Prepared for: **CITY OF RIVERSIDE** Community & Economic Development Department
Planning Division, 3900 Main Street, Third Floor, Riverside, California 92522

Final Environmental Impact Report

PROPOSED CANYON SPRINGS HEALTHCARE CAMPUS SPECIFIC PLAN AND AMENDMENT TO THE CANYON SPRINGS BUSINESS PARK SPECIFIC PLAN

Prepared by:
DUDEK
3544 University Avenue
Riverside, California 92501

November 2017

Final
Environmental Impact Report for the Proposed Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan
SCH No. 2016031001

Prepared for:

City of Riverside
Community & Economic Development Department
Planning Division
3900 Main Street Third Floor
Riverside, California 92522
Contact: Sean P. Kelleher, Associate Planner

Prepared by:

DUDEK
3544 University Avenue
Riverside, California 92501
Contact: Ruta K. Thomas, REPA

This FEIR has been prepared in compliance with the California Environmental Quality Act and City of Riverside CEQA Resolution No. 21106, and reflects the independent judgment of the City of Riverside.

Ted White, City Planner

NOVEMBER 2017

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ATTACHMENTS

TABLES

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CHAPTER 1
INTRODUCTION

The Final Environmental Impact Report (Final EIR), as required pursuant to State *CEQA Guidelines* Sections 15089 and 15132, includes the Draft Environmental Impact Report (Draft EIR) or a revision thereof, comments and recommendations received on the Draft EIR, a list of persons, organizations, and public agencies commenting on the Draft EIR, and the responses of the lead agency, which is the City of Riverside (City) for this Project, to significant environmental points raised in the review and consultation process. A Mitigation Monitoring and Reporting Program (MMRP) is also included to ensure compliance during Project implementation (Public Resources Code Section 21081.6, State *CEQA Guidelines* Section 15097).

1.1 Public Review Summary

The EIR process for this Project consisted of three parts: the Notice of Preparation (NOP), Draft EIR, and Final EIR. The City distributed the NOP on March 2, 2016, to agencies, local governments, and interested parties of the general public. Pursuant to State *CEQA Guidelines* Section 15082, recipients of the NOP were requested to provide responses within 30 days upon receipt. Copies of the NOP and comments received are included in Appendix A to the Draft EIR.

The City circulated the Draft EIR for the Project for a 45-day public review period from July 8, 2017, through August 22, 2017. Notices of Completion and Availability of the Draft EIR were circulated to the State Clearinghouse, responsible agencies, trustee agencies, and other interested parties on July 7, 2017.

General public Notice of Availability of the Draft EIR was also given by publication in The Press-Enterprise daily circulation newspaper on July 8, 2017. As required by Public Resources Code Section 21092.3, a copy of the public notice was posted with the Riverside County Clerk on July 7, 2017.

As provided in the public notice and in accordance with Public Resources Code Section 21091(d), the City accepted written comments through August 22, 2017. During the public review period for the Project, the City received nine comment letters from agencies, community members, and other organizations. The comments are listed below, based on the order in which they were received by the City.

The Responses to Comments, along with the comment letters, are included in Chapter 2 of this Final EIR. In accordance with the provisions of Public Resources Code Section 21092.5, the City has provided a written response to each commenting public agency no less than 10 days prior to the proposed certification date.

1.2 List of Persons, Organizations, and Agencies that Commented on the Draft EIR

Comment Letter	Name/Agency	Date
A	Native American Heritage Commission	July 17, 2017
B	Riverside County Flood Control and Water Conservation District	July 20, 2017
C	California Department of Transportation, Division of Aeronautics	August 7, 2017
D	California Department of Transportation, District 8	August 17, 2017
E	Moreno Valley Unified School District	August 17, 2017
F	State of California Department of Water Resources	August 16, 2017
G	Soboba Band of Luiseno Indians	August 22, 2017
H	City of Moreno Valley	August 22, 2017
I	State of California, Governor's Office of Planning and Research, State Clearinghouse and Planning Unit	August 22, 2017

CHAPTER 2
RESPONSE TO COMMENTS

2.1 Overview

Pursuant to State *CEQA Guidelines* Section 15088, the responses to comments presented in this chapter address specific, relevant comments on environmental issues raised in the submitted comment letters.

All of the comment letters are included in this chapter. Each comment letter is followed by the responses to each of its comments. All of the comment letters are included in this chapter and are organized based on the alphabetic labels provided in Section 1.2 of this Final EIR. Individual issues within each comment letter have been bracketed and given an alphanumeric label. Each letter is followed by responses to the individual comments within the letter, and identifying information for each commenter is provided at the beginning of the corresponding responses.

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Comment Letter A

STATE OF CALIFORNIA
NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710

Edmund G. Brown Jr., Governor

July 17, 2017

Sean P. Kelleher
City of Riverside
3900 Main Street, Third Floor
Riverside, CA 92522

sent via e-mail: skelleher@riversideca.gov

Re: SCH# 2016031001, Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park SP Project, City of Riverside and City of Moreno Valley; Riverside County, California

Dear Mr. Kelleher:

The Native American Heritage Commission (NAHC) has reviewed the Draft Environmental Impact Report prepared for the project referenced above. The review included the Summary and Project Description, the Summary of Environmental Impacts and Mitigation Measures, the Environmental Impact Analysis section 4.4 Cultural Resources and Appendix I, Cultural Resources Report prepared by Dudek for the City of Riverside. We have the following concerns:

1. There is no Tribal Cultural Resources section or subsection in the Executive Summary or Environmental Checklist as per California Natural Resources Agency (2016) "Final Text for tribal cultural resources update to Appendix G: Environmental Checklist Form," http://resources.ca.gov/ceqa/docs/ab52/Clean-final-AB-52-App-G-text-Submitted.pdf

2. Although there is discussion of consultation and input from tribes under Archaeological Resources, there are no mitigation measures specifically addressing impacts to Tribal Cultural Resources separately from Archaeology. Mitigation language for archaeological resources is not always appropriate for or similar to measures specifically for handling Tribal Cultural Resources. For sample mitigation measures, please refer to the California Natural Resources Agency (2016) "Final Text for tribal cultural resources update to Appendix G: Environmental Checklist Form," http://resources.ca.gov/ceqa/docs/ab52/Clean-final-AB-52-App-G-text-Submitted.pdf

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A-2

The California Environmental Quality Act (CEQA)[1], specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.[2] If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared.[3] In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

A-3

CEQA was amended in 2014 by Assembly Bill 52. (AB 52).[4] **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** AB 52 created a separate category for "tribal cultural resources"[5], that now includes "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment.[6] Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.[7] Your project may also be subject to **Senate Bill 18 (SB 18)** (Burton, Chapter 905, Statutes of 2004), Government Code 65352.3, if it also involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space. **Both SB 18 and AB 52 have tribal consultation requirements**. Additionally, if your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966[8] may also apply.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

A-4

[1] Pub. Resources Code § 21000 et seq.
[2] Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b); CEQA Guidelines Section 15064.5 (b)
[3] Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd.(a)(1); CEQA Guidelines § 15064 (a)(1)
[4] Government Code 65352.3
[5] Pub. Resources Code § 21074
[6] Pub. Resources Code § 21084.2
[7] Pub. Resources Code § 21084.3 (a)
[8] 154 U.S.C. 300101, 36 C.F.R. § 800 et seq.

Agencies should be aware that AB 52 does not preclude agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52. For that reason, we urge you to continue to request Native American Tribal Consultation Lists and Sacred Lands File searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/. Additional information regarding AB 52 can be found online at http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf, entitled "Tribal Consultation Under AB 52: Requirements and Best Practices".

The NAHC recommends lead agencies consult with all California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources.

A brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments is also attached.

Please contact me at gayle.totton@nahc.ca.gov or call (916) 373-3710 if you have any questions.

Sincerely,

Gayle Totton, B.S., M.A., Ph.D
Associate Governmental Project Analyst

Attachment

cc: State Clearinghouse

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Cont.

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Pertinent Statutory Information:

Under AB 52:
AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:
Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a **lead agency** shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice.
A **lead agency** shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project.[9] and **prior to the release of a negative declaration, mitigated negative declaration or environmental impact report**. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18).[10]
The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

a. Alternatives to the project.
b. Recommended mitigation measures.
c. Significant effects.[11]

1. The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.

If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. [12]
With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process **shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10.** Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.[13]
If a project may have a significant impact on a tribal cultural resource, **the lead agency's environmental document shall discuss** both of the following:

a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource.[14]

Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.[15]

Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 **shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program**, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable.[16]
If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, **the lead agency shall consider feasible mitigation** pursuant to Public Resources Code section 21084.3 (b).[17]
An environmental impact report **may not be certified**, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

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[9] Pub. Resources Code § 21080.3.1, subds. (d) and (e)
[10] Pub. Resources Code § 21080.3.1 (b)
[11] Pub. Resources Code § 21080.3.2 (a)
[12] Pub. Resources Code § 21080.3.2 (a)
[13] Pub. Resources Code § 21082.3 (c)(1)
[14] Pub. Resources Code § 21082.3 (b)
[15] Pub. Resources Code § 21080.3.2 (b)
[16] Pub. Resources Code § 21082.3 (a)
[17] Pub. Resources Code § 21082.3 (e)

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A-4
Cont.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days.[18]

This process should be documented in the Tribal Cultural Resources section of your environmental document.

Under SB 18:

Government Code § 65352.3 (a) (1) requires consultation with Native Americans on general plan proposals for the purposes of "preserving or mitigating impacts to places, features, and objects described § 5097.9 and § 5091.993 of the Public Resources Code that are located within the city or county's jurisdiction. Government Code § 65560 (a), (b), and (c) provides for consultation with Native American tribes on the open-space element of a county or city general plan for the purposes of protecting places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code.

- SB 18 applies to **local governments** and requires them to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf
- Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.**[19]
- There is no Statutory Time Limit on Tribal Consultation under the law.
- Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research,[20] the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction.[21]
- Conclusion Tribal Consultation: Consultation should be concluded at the point in which:
  - The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
  - Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation.[22]

NAHC Recommendations for Cultural Resources Assessments:

- Contact the NAHC for:
  - A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
  - A Native American Tribal Contact List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.
    - The request form can be found at http://nahc.ca.gov/resources/forms/.
- Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
  - If part or the entire APE has been previously surveyed for cultural resources.
  - If any known cultural resources have been already been recorded on or adjacent to the APE.
  - If the probability is low, moderate, or high that cultural resources are located in the APE.
  - If a survey is required to determine whether previously unrecorded cultural resources are present.
- If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
  - The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

[18] Pub. Resources Code § 21082.3 (d)
[19] (Gov. Code § 65352.3 (a)(2)).
[20] pursuant to Gov. Code section 65040.2,
[21] (Gov. Code § 65352.3 (b)).
[22] (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

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A-4 Cont.

Examples of Mitigation Measures That May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

- Avoidance and preservation of the resources in place, including, but not limited to:
  - Planning and construction to avoid the resources and protect the cultural and natural context.
  - Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
- Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
  - Protecting the cultural character and integrity of the resource.
  - Protecting the traditional use of the resource.
  - Protecting the confidentiality of the resource.
- Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed.[23]
- Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated.[24]

The lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

- Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources.[25] In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
- Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
- Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

A-4 Cont.

[23] (Civ. Code § 815.3 (c)).
[24] (Pub. Resources Code § 5097.991).
[25] per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)).

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Response to Comment Letter A

Native American Heritage Commission
July 17, 2017

A-1 The commenter notes that the Native American Heritage Commission (NAHC) reviewed the Draft Environmental Impact Report (EIR) for the Project, which included a review of the Summary and Project Description, the Summary of Environmental Impacts and Mitigation Measures, Section 4.4 Cultural Resources of the Environmental Impact Analysis, and Appendix I (*Phase I Cultural Resources and Paleontological Inventory for the Canyon Springs Healthcare Campus*). The City appreciates the NAHC's review of the Draft EIR.

The commenter states that there is no distinct tribal cultural resources section or subsection in the Executive Summary or Environmental Checklist, as per California Natural Resources Agency (2016) "Final Text for tribal cultural resources update to Appendix G: Environmental Checklist Form." According to the 2017 State CEQA Guidelines Section 15063(f), the checklist form provided as part of Appendix G is "only suggested, and public agencies are free to devise their own format for an initial study." The City has not created a distinct tribal cultural resources section in its environmental checklist form. However, potential effects to tribal cultural resources are discussed in the Draft EIR. As described in Appendix I of the Draft EIR, the City has undergone the Assembly Bill 52 (AB 52) notification and consultation process (see pages 39 and 40 of Appendix I). As described in Appendix I, two tribes with traditional lands or cultural places located within and near the Project site requested formal consultation with the City (the Pechanga Band of Luiseño Indians and Soboba Band of Luiseño Indians). These tribes did not identify any known tribal cultural resources on the Project site. In addition to the AB 52 process, tribal outreach was also conducted in support of the *Phase I Cultural Resources and Paleontological Inventory for the Canyon Springs Healthcare Campus* that was commissioned by the City. The tribal outreach involved correspondence with potentially interested tribal parties provided in a list received from the NAHC. Five tribes responded to the outreach effort: the Agua Caliente Band of Cahuilla Indians, the Morongo Band of Mission Indians, the Pauma Band of Luiseno Indians, the Pala Tribal Historic Preservation Office, and the Rincon Band of Luiseno Indians. These tribes did not indicate the presence of cultural resources in the Project area. However, several tribes identified concerns related to resources that have not yet been identified. As such, mitigation measures have been provided in the Draft EIR requiring a cultural monitoring program to be implemented during ground-disturbing work on the Project site. The cultural monitoring program must include designated Native American

Tribal Monitors from the consulting tribes during grading, excavation, and ground-disturbing activities on the site. In the event that a previously unidentified tribal cultural resource were to be uncovered or encountered during construction, the monitor would be able to stop and redirect grading activities in coordination with the Project archaeologists (see MM-CUL-2 and MM-CUL-3, which are provided on pages 4.4-29 through 4.4-31 of the Draft EIR).

As such, while there is no specific section or subsection in the Draft EIR for tribal cultural resources, this issue was nevertheless addressed in the Draft EIR. As described in Section 4.4 and in Appendix I of the Draft EIR, no tribal cultural resources were identified on the Project site by tribes with traditional lands or cultural places located within and near the Project site. In the event that a previously unidentified tribal cultural resource were to be discovered during Project construction, mitigation has been provided so that Native American Tribal Monitors would be able to stop construction activities and coordinate the appropriate treatment and disposition of the resource. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

A-2 The commenter states that there are no mitigation measures specifically addressing tribal cultural resources separately from archaeological resources. The commenter further states that the mitigation language for archaeological resources is not always appropriate for, or similar to, measures specific to handling tribal cultural resources. As described in Response A-1, no tribal cultural resources have been identified on the Project site by Native American tribes with traditional lands or cultural places located within and near the Project site. However, tribes identified concerns relative to previously unidentified cultural resources. The nature of any buried, previously undiscovered cultural resources on the Project site (if any) is currently unknown. Therefore, at this time, it cannot be determined whether such resources would be archaeological resources, tribal cultural resources, or both. As such, the required mitigation measures provided in the Draft EIR address impacts related to the potential for inadvertent discovery of cultural resources, which would include archaeological and/or tribal cultural resources. As described in Response A-1, in the event that a previously undiscovered tribal cultural resource were to be uncovered or encountered during construction, the Native American monitor would be able to stop and redirect grading activities in coordination with the Project archaeologists and would be able to coordinate the appropriate treatment and disposition of the resource (see MM-CUL-2 and MM-CUL-3, which are provided in on pages 4.4-29 through 4.4-31 of the Draft EIR). This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

A-3 The commenter cites CEQA, specifically Public Resources Code 21084.1, to note that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. The commenter further states that in order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of project affect.

Historical resources are addressed in Section 4.2.5(a) of the Initial Study for the Project, which is contained in Appendix A of the Draft EIR. As stated in Section 4.2.5(a) of the Initial Study, no previously recorded cultural resources (including historical resources) have been identified within the Project site. However, one previously recorded cultural resource has been recorded within one mile of the Project site. This historical resource consists of a segment of the 1880s Atchison, Topeka, and Santa Fe railroad, also known as the Burlington Northern Santa Fe Railroad or the San Jacinto Valley railway. The rail-line has been mapped along the western side of Interstate 215, west (outside) of the project area. An intensive pedestrian survey was completed of this area in support of the Initial Study analysis. No cultural resources, including extant portions of the rail, associated rail facilities, or associated refuse (within or outside of the Project area), were identified during pedestrian inspection. Additionally, no structures or other features are represented within the Project area on the 1942 Riverside 15-minute USGS maps or on the 1901 Elsinore 30-minute topographic maps. As stated on page 30 of the Initial Study, no built environment historical resources were identified on the Project site, and no impacts to historical resources would occur as a result of the Project. As substantiated by the Initial Study analysis, the Project would not cause a substantial change in the significance of an historical resource as defined in CEQA Guidelines Section 15064.5, and no impacts would result. As such, the City has determined that there are no historical resources within the Project site. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

A-4 The commenter makes a blanket statement regarding CEQA and how it was amended in 2014 by AB 52 and that AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration was filed on or after July 1, 2015. The commenter describes why AB 52 was created and also describes the general AB 52 process. The commenter states that the Project may also be subject to Senate Bill 18 (SB 18) and Section 106 of the National Historic Preservation Act. A brief summary of portions of AB 52 and SB 18, as well as the summary of NAHC's recommendations for conducting cultural resources assessments, is attached to the comment letter. These recommendations have not been specifically crafted for the Project. Nowhere does commenter state that this Project hasn't complied with AB 52 and/or SB 18.

As stated on page 39 of Appendix I to the Draft EIR, the City has in fact complied with both AB 52 and SB 18 and has conducted government-to-government consultation. Two tribes with traditional lands or cultural places located within and near the Project site requested formal consultation with the City (the Pechanga Band of Luiseño Indians and Soboba Band of Luiseño Indians). All records related to the AB 52 and SB 18 notification/consultation process are on file with the City. Furthermore, the Project is not subject to NEPA, and therefore, the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 do not apply. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

Comment Letter B

JASON E. UHLEY
General Manager-Chief Engineer

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RIVERSIDE, CA 92501
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www.rcflood.org

214197

RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

July 20, 2017

City of Riverside
Community Development Department
Planning Division
3900 Main Street, 3rd Floor
Riverside, CA 92522

Attention: Sean Kelleher, Associate Planner Re: Canyon Springs Healthcare Campus Specific Plan

The District does not normally recommend conditions for land divisions or other land use cases in incorporated cities. The District also does not plan check City land use cases, or provide State Division of Real Estate letters or other flood hazard reports for such cases. District comments/recommendations for such cases are normally limited to items of specific interest to the District including District Master Drainage Plan facilities, other regional flood control and drainage facilities which could be considered a logical component or extension of a master plan system, and District Area Drainage Plan fees (development mitigation fees). In addition, information of a general nature is provided. B-1

The District has not reviewed the proposed project in detail and the following comments do not in any way constitute or imply District approval or endorsement of the proposed project with respect to flood hazard, public health and safety or any other such issue:

1. This project is located within the limits of the District's West End (Moreno Valley) Area Drainage Plan for which drainage fees have been adopted; applicable fees should be paid for by cashier's check or money order written out only to the Flood Control District or City prior to issuance of building or grading permits. Fees to be paid should be at the rate in effect at the time of issuance of the actual permit. B-2

2. An encroachment permit shall be obtained for any construction related activities occurring within District right of way or facilities, specifically the Canyon Springs Retention Basin "A" located near the intersection of Day Street and Eucalyptus Avenue. For further information, contact the District's Encroachment Permit Section at 951.955.1266.

GENERAL INFORMATION

This project may require a National Pollutant Discharge Elimination System (NPDES) permit from the State Water Resources Control Board. Clearance for grading, recordation or other final approval should not be given until the City has determined that the project has been granted a permit or is shown to be exempt. B-3

If this project involves a Federal Emergency Management Agency (FEMA) mapped floodplain, then the City should require the applicant to provide all studies, calculations, plans and other information required to meet FEMA requirements, and should further require that the applicant obtain a Conditional Letter of Map Revision (CLOMR) prior to grading, recordation or other final approval of the project, and a Letter of Map Revision (LOMR) prior to occupancy. B-4

If a natural watercourse or mapped floodplain is impacted by this project, the City should require the applicant to obtain a Section 1602 Agreement from the California Department of Fish and Wildlife and a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers, or written correspondence from these agencies indicating the project is exempt from these requirements. A Clean Water Act Section 401 Water Quality Certification may be required from the local California Regional Water Quality Control Board prior to issuance of the Corps 404 permit. B-5

Very truly yours,

Mike M. Wong

MIKE WONG
Engineering Project Manager

c: Riverside County Planning Department
Attn: Kristy Lovelady
NO:blm

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Response to Comment Letter B

Riverside County Flood Control and Water Conservation District
July 20, 2017

B-1 The commenter states that the Riverside County Flood Control and Water Conservation District (District) does not typically recommend conditions or complete plan checks for land use cases in incorporated cities. The commenter states that the District's comments and recommendations are limited to items of specific interest to the District, District Area Drainage Plan fees, and information of a general nature. The City appreciates the District's general comments and recommendations. This comment is introductory in nature and does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

B-2 The commenter states that the District has not reviewed the Project in detail and that the following comments do not constitute or imply District approval or endorsement of the Project. The commenter states that the Project is located within the District's West End (Moreno Valley) Area Drainage Plan, which has adopted drainage fees. The commenter states that the applicable fees should be paid prior to the issuance of building or grading permits for the Project. The applicant would be required to pay all applicable fees, including those associated with the West End (Moreno Valley) Area Drainage Plan, at the appropriate stage of the permitting process. Additionally, the commenter states that an encroachment permit needs to be obtained for any construction-related activities occurring within District right of way or facilities, specifically the Canyon Springs Retention Basin "A," located near the intersection of Day Street and Eucalyptus Avenue. As stated in Section 4.8.5 of the Draft EIR, the applicant's contractor would be required to obtain all necessary encroachment permits prior to construction and would also be required to comply with all applicable encroachment permit guidelines and any permit conditions, including those associated with District right-of-ways or facilities (see page 4.8-30 of the Draft EIR). This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

B-3 The commenter states that the Project may require a National Pollutant Discharge Elimination System (NPDES) permit from the State Water Resources Control Board and that clearance for grading, recordation, or other final approval should not be given for the Project until the City has determined that the Project has been given a permit or is shown to be exempt. As described in Section 4.7 of the Draft EIR, the Project would require an NPDES permit (see page 4.7-11 of the Draft EIR). As stated in Section 2.6 of the Draft EIR, the developer would file a Notice of Intent with the

Regional Water Quality Control Board (RWQCB), Santa Ana Region, and obtain a General Construction Activity Stormwater Permit pursuant to the NPDES regulations (see page 2-29 of the Draft EIR). This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

B-4 This comment describes requirements for projects within a Federal Emergency Management Agency (FEMA) floodplain. As described in Section 4.7.1 of the Draft EIR, the Project is not within a FEMA 100-year flood hazard area (see page 4.7-1 of the Draft EIR). As such, the requirements described in this comment do not apply to the Project. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

B-5 This comment describes requirements for projects that affect a natural watercourse or mapped floodplain: a Section 1602 Agreement from the California Department of Fish and Wildlife (CDFW), a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers, and a Clean Water Act Section 401 Water Quality Certification from the Regional Water Quality Control Board, which may be required prior to issuance of the 404 permit. As described in Section 4.3.5 of the Draft EIR, the Project may affect jurisdictional areas on a portion of the Project site (Site B), consisting of non-wetland waters under U.S. Army Corps and Regional Water Quality Control Board jurisdiction and a CDFW-jurisdictional streambed (see pages 4.3-14 and 4.3-15 of the Draft EIR). Implementation of mitigation measure MM-BIO-1 is required to address any potential effects to these jurisdictional resources resulting from development of the Project. Mitigation measure MM-BIO-1 requires the Project developer to obtain a Clean Water Act Section 404 Permit and a Regional Water Quality Control Board Clean Water Act Section 401 Water Quality Certification prior to issuance of grading permits for Site B. This measure also requires compliance with Section 1602 of the California Fish and Game Code, including execution of a Streambed Alteration Agreement, if requested by CDFW (see page 4.3-19 of the Draft EIR). As such, while the Project may affect a natural watercourse, the developer would comply with the applicable permitting requirements, as listed in this comment and as listed in MM-BIO-1. As such, this comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

Comment Letter C

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN JR., Governor

DEPARTMENT OF TRANSPORTATION
DIVISION OF AERONAUTICS – M.S. #40
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www.dot.ca.gov

Making Conservation a California Way of Life.

August 7, 2017

Mr. Sean Kelleher
City of Riverside
Community Development Department
3900 Main Street, 3rd Floor
Riverside, CA 92522

Dear Mr. Kelleher:

Re: Draft Environmental Impact Report for the Canyon Springs Healthcare Campus; SCH# 2016031001

The California Department of Transportation, Division of Aeronautics (Division), reviewed the above-referenced document with respect to airport-related noise and safety impacts and regional aviation land use planning issues pursuant to the California Environmental Quality Act (CEQA). The Division has technical expertise in the areas of airport operations safety and airport land use compatibility. We are a funding agency for airport projects and we have permit authority for public-use and special-use airports and heliports.

We offer the following comments after reviewing the project in our role as a state heliport permitting authority which designates the Division a responsible agency under CEQA, and as a state reviewing agency with technical expertise in aircraft noise and safety issues for projects near airports. The project site is in the airport influence area of the March Air Reserve Base (MRB).

The proposed project is a new healthcare campus development that will include new buildings for senior housing, assisted living/skilled nursing, medical treatment and administration, and multi-level vehicle parking. The campus will be spread out over three separate areas within the 50.85 acre project site in the City of Riverside. The project will require an amended specific plan, a new specific plan and amend the city's general plan. A heliport will be built on top of the new hospital building during the final phase of the campus development. The healthcare campus is approximately 2.60 miles northwest from the end of Runway 14/32 at MRB. C-1

The new hospital heliport will require the issuance of a State heliport permit by the Division. One of the required permit checklist items is approval of the heliport plan of construction by the City of Riverside as appropriate, in accordance with California Public Utilities Code (PUC) section 21661.5. The applicant should also be advised to contact the Division's Aviation Safety Officer for Riverside County, Mike Smith, at (916) 654-4380, for assistance with the State permit requirements. Information regarding the State heliport permit process is available on-line at http://www.dot.ca.gov/hq/planning/aeronaut/heliportpermit.html.

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Mr. Sean Kelleher
August 7, 2017
Page 2

Prior to issuing a State heliport permit, the Division, as a responsible agency, must be assured that the proposal is in full compliance with CEQA. The issues of primary concern to us include heliport-related noise and safety impacts on the surrounding community. To ensure that the community will not be adversely impacted by helicopter operations, flight paths should avoid noise-sensitive and people intensive uses. Environmental documentation should include the anticipated number of operations, daytime and/or nighttime use, a noise study with heliport Community Noise Equivalent Level (CNEL) noise contours, diagrams showing the proposed landing site and the approach/departure flight paths. The helicopter noise contours should at least show 60 dB, and 65 dB CNEL. The diagrams should also depict the proximity of the proposed flight paths to any existing or proposed noise sensitive or people intensive land uses. The notice of determination must also be filed with the Office of Planning and Research. Consideration given to the issue of compatible land uses in the vicinity of a heliport should help to relieve future conflicts between the heliport and the surrounding neighborhood. C-2

It is also necessary to consider the whole project in regard to its proximity to MRB. In accordance with CEQA, Public Resources Code Section 21096, the California Airport Land Use Planning Handbook (Handbook) must be utilized as a resource in the preparation of environmental documents for projects within airport land use compatibility plan boundaries or if such a plan has not been adopted, within two miles of an airport. The project site appears to be in Safety Zone D of the MRB airport land use compatibility plan. The Handbook is available on-line at:
http://dot.ca.gov/hq/planning/aeronaut/documents/alucp/AirportLandUsePlanningHandbook.pdf C-3

Although the project site appears to be located outside the 60 dB CNEL contour for MRB (as shown in the land use compatibility plan), this does not take into account cumulative noise impacts associated with the site's proximity to the airport along with roadways and railway lines or the "single-event" impacts associated with individual aircraft overflights. It is likely that some future residents will be annoyed by aircraft noise in this area. We advise requiring an avigation easement as shown in Appendix H of the Handbook. C-4

In accordance with PUC section 21676 *et seq.*, prior to the amendment of a general plan or specific plan, or the adoption or approval of a zoning ordinance or building regulation within the planning boundary established by an Airport Land Use Commission (ALUC), the local agency shall first refer the proposed action to the ALUC.

If the ALUC determines that the proposed action is inconsistent with the airport land use compatibility plan, the referring agency shall be notified. The local agency may, after a public hearing, propose to overrule the ALUC by a two-thirds vote of its governing body after it makes specific findings. At least 45 days prior to the decision to overrule the ALUC, the local agency's governing body shall provide to the ALUC and the Division a copy of the proposed decision and findings. The Division reviews and comments on the specific findings a local government intends to use when proposing to overrule an ALUC. The Division specifically looks at the proposed findings to gauge their relationship to the overrule. Also, pursuant to the PUC 21670 *et seq.*, findings should show evidence that the local agency is minimizing "…the public's exposure to excessive noise and safety hazards within areas around public airports to C-5

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Mr. Sean Kelleher
August 7, 2017
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the extent that these areas are not already devoted to incompatible uses." C-5 Cont.

In addition to submitting the proposal to the ALUC, it should also be coordinated with MRB staff to ensure that the proposal will be compatible with future as well as existing airport operations. C-6

Section 21659 of the PUC prohibits structural hazards near airports and heliports. Structures should not be at a height that will result in penetration of the approach imaginary surfaces. If the heliport is planned for operation prior to completion of the later phases of construction activities, impacts to the heliport imaginary surfaces from temporary construction-related impacts (e.g. construction cranes, etc.) should be identified. Federal Aviation Administration (FAA) Advisory Circular 150/5370-2E "Operational Safety on Airports During Construction," available at http://faa.gov, can be incorporated into the project design in order to identify any permanent or temporary construction-related impacts to the heliport imaginary surfaces. The FAA may also require the filing of a Notice of Proposed Construction or Alteration (Form 7460-1) for certain project-specific activities in accordance with Federal Aviation Regulations Part 77 "Objects Affecting Navigable Airspace." Form 7460-1 is available at https://oeaaa.faa.gov/oeaaa/external/portal.jsp and should be submitted electronically.

The FAA will require the filing of a Notice of Landing Area Proposal (Form 7480-1). A copy of the form is available on the FAA website at:
http://www.faa.gov/forms/index.cfm/go/document.information/documentID/185334 C-7

Thank you for the opportunity to review and comment on this proposal. If you have any questions, please contact me at (916) 654-6223, or by email at philip.crimmins@dot.ca.gov. C-8

Sincerely,

PHILIP CRIMMINS
Aviation Environmental Specialist

c: State Clearinghouse, Riverside County ALUC, March Air Reserve Base

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Response to Comment Letter C

California Department of Transportation – Division of Aeronautics
August 7, 2017

C-1 The commenter summarizes the Project and describes the California Department of Transportation – Division of Aeronautics' responsibilities. The commenter states that the Department of Transportation – Division of Aeronautics (Caltrans Division of Aeronautics) is a responsible agency for the Project under CEQA.

The Draft EIR (specifically, Section 4.6 at page 4.6-8) describes the permits that are required for the Project's helipad, including the Caltrans Division of Aeronautics' permitting requirements. The Project would comply with these permitting requirements. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

C-2 The commenter states that CEQA compliance for the Project must be demonstrated to the Caltrans Division of Aeronautics before it issues a State heliport permit. The commenter also states that the primary concerns of the Caltrans Division of Aeronautics include heliport-related noise and safety effects on the surrounding community. These effects are addressed in Section 4.6 (Hazards and Hazardous Materials) and Section 4.9 (Noise) of the Draft EIR. The commenter further states that the flight paths should avoid noise-sensitive and people-intensive uses. Conceptual helicopter approaches are shown in Figure 4.9-3 of the Draft EIR. As shown, the approaches would avoid the proposed senior housing on the Project site and would also avoid residential neighborhoods south and southeast of the Project site. Additionally, mitigation measure MM-HAZ-3 has been provided to address potential flight hazards and includes a requirement that flight paths must be to and from the southwest and to and from the northwest for noise-abatement reasons (see page 4.6-19 of the Draft EIR).

The commenter then lists information on effects of the helipad that Caltrans Division of Aeronautics would like included in the environmental documentation for the Project. This information pertains to noise and land use compatibility. Noise impacts of the Project (including those of the helipad) are addressed in Section 4.9 of the Draft EIR. The analysis characterizes typical helicopter activities and trauma helicopter activities and includes a diagram showing the conceptual helicopter flight path and landing location that also shows locations of the proposed on-site uses (Figure 4.9-3). The locations of nearby sensitive receptors are also described (see pages 4.9-4 and 4.9-5) in the Draft EIR. The analysis includes calculations of the

operational noise levels of the Project, with typical helicopter activities and with trauma helicopter activities, and describes and depicts the locations of nearby noise-sensitive receptors (see pages 4.9-28 through 4.9-38 of the Draft EIR). The operational effects of the Project (including the effects of typical helicopter activities or trauma helicopter activities) were determined to be less than significant after incorporation of mitigation measure MM-NOI-1 (see pages 4.9-48 and 4.9-49). This measure includes a requirement for the Project applicant to demonstrate compliance with all federal, state, regional, and local agencies' regulations, including those of the Federal Aviation Administration, the Riverside County Airport Land Use Commission, the March Air Reserve Base/Inland Port Airport, the State of California Heliport Permitting process, and the City of Riverside Entitlement process.

Detailed helipad design plans were not available when the noise analysis was being conducted for the Draft EIR. As such, the analysis focused on operational noise level impacts at the closest sensitive receiver locations to determine compliance with local City of Riverside noise regulations. The Project's operational noise analysis included both helicopter and typical Project operational noise sources all operating simultaneously to present a worst-case, conservative approach at the closest noise-sensitive receiver locations. Since Project heliport activities are shown to exceed the City of Riverside Municipal Code noise level standards with trauma helicopter operations, mitigation measure (MM-NOI-1) in the form of mandatory permitting review and conditions of approval by the Division of Aeronautics and other regulating agencies is required to ensure that once heliport plans are finalized, the appropriate noise-reducing measures are included in the design and operation of the Project helipad. Additionally, once helipad plans are finalized, the operational community noise equivalent level (CNEL) contour boundaries can be determined using a detailed heliport noise model as a part of permit approval, with the exhibits and figures identified in this comment.

Potential hazards (including those related to the helipad) are addressed in Section 4.6 of the Draft EIR. Effects were determined to be less than significant after incorporation of mitigation measures MM-HAZ-1 through MM-HAZ-3, which are shown in Section 4.6.6 of the Draft EIR (see pages 4.6-17 through 4.6-19). These measures include requirements for coordination with the applicable aviation agencies and for compliance with any conditions of approval that are applied to the Project by those agencies.

The commenter also states that the Notice of Determination for the Project must be filed with the Office of Planning and Research and that consideration should be given to the issue of compatible land uses in the vicinity of the heliport to relieve future

conflicts between the heliport and the surrounding neighborhood. In accordance with CEQA, the Notice of Determination will be filed with the Office of Planning and Research (as well as with the County Clerk) should the Project be approved. Land use compatibility of the Project is addressed in Section 4.8 of the Draft EIR. Impacts were determined to be less than significant with mitigation (see pages 4.8-31 and 4.8-32 of the Draft EIR). Additionally, the noise analysis in Section 4.9 and Appendix K of the Draft EIR includes a compatibility analysis for both exterior and interior noise levels. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

C-3 The commenter states that the Project is in Safety Zone D of the March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan. The commenter states that the California Airport Land Use Planning Handbook must be used for the preparation of environmental documents for projects within airport land use compatibility plan boundaries.

The Project's location within Safety Zone D and its relationship to the March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan is discussed throughout the Draft EIR. A variety of mitigation measures have been identified to ensure that the Project is consistent with the airport land use compatibility plan. (See specifically MM-TRAF-14 on page 4.11-84 of the Draft EIR). Furthermore, the Project was reviewed by the Riverside County Airport Land Use Commission on June 8, 2017. The commission found that the Project is consistent with the airport land use compatibility plan. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

C-4 The commenter states that the Project site is outside the 60 decibel community noise equivalent level (dB CNEL) for the March Air Reserve Base. However, the commenter notes that the noise contours do not include cumulative noise impacts associated with the site's proximity to the airport, railways lines, and roadways, or the potential for "single-event" impacts associated with individual aircraft overflights. The comment states that some future residents of the Project may be annoyed by aircraft noise. The commenter advises requiring an avigation easement, as shown in the California Airport Land Use Planning Handbook.

The Project does not involve an avigation easement. However, the Riverside County Airport Land Use Commission has required that a "Notice of Airport in Vicinity" be recorded against each property on the Project site as a condition of their determination that the Project is consistent with the airport land use compatibility plan. A detailed assessment of interior noise levels was conducted for the Project and

can be found in Appendix K of the Draft EIR, which is the *Canyon Springs Healthcare Campus and Senior Living Noise Impact Analysis*. As stated in Appendix K of the Draft EIR, the exterior noise levels at the Project would exceed those of a typical hospital due to the proximity of the Project to the March Air Reserve Base, Interstate 215, and State Route 60. Appendix K of the Draft EIR includes calculations of interior noise levels for the Project, which take into account future exterior noise levels, as well as a variety of design features that would be included to help the Project meet the City's interior noise standard of 45 dBA CNEL. As noted in Appendix K of the Draft EIR, the City's standard is more stringent than the California Green Building Standards Code requirement of a 50 dBA CNEL interior noise level. As demonstrated in Appendix K of the Draft EIR, the Project's interior would meet the City's 45 dBA CNEL interior noise standard. As such, no further measures beyond the design requirements of the Project would be applied. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

C-5 This comment describes the requirements for the Riverside County Airport Land Use Commission's review of the Project. The Riverside County Airport Land Use Commission is listed in Section 2.6 of the Draft EIR as one of several public agencies that would need to issue permits or other forms of approval in order for the Project to proceed. Section 2.6 specifically states that "The Riverside County Airport Land Use Commission will review the Project plans and condition the Project, as necessary, in order to ensure compliance with the March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan" (Draft EIR, page 2-30). As such, the Draft EIR takes into consideration that the Project would be reviewed by the Riverside County Airport Land Use Commission, which would evaluate the Project's consistency with the March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan. Accordingly, the Project was reviewed by the Riverside County Airport Land Use Commission on June 8, 2017. The commission found the Project to be consistent with the March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan. Section 4.6, Hazards and Hazardous Materials, of the Draft EIR provides a comprehensive analysis of the Project's consistency with the March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

C-6 This comment states that the Project should also be coordinated with March Air Reserve Base staff to ensure that the Project would be compatible with future and existing airport operations. As stated in Section 2.6 of the Draft EIR, "March Air Reserve Base (ARB) Air Traffic Control will review plans related to the proposed

helistop location and proposed helicopter flight path alignments and condition the Project, as necessary, to ensure no conflicts occur between the proposed helicopter flight paths and March ARB flight operations. Additionally, a letter of agreement shall be developed between March ARB Air Traffic Control and the Canyon Springs Healthcare Campus operator. The applicant has worked with March ARB and has reached a general agreement (see Attachment A) on technical aspects with respect to flight path and flight protocols. Once the hospital operator has been selected and the helipad design completed, March ARB and the Operator will use the parameters defined the "letter" to reach a definitive agreement. The letter of agreement will define specific flight paths and communication procedures for helicopter operations to and from the hospital. The Canyon Springs Healthcare Campus operator will require all helicopter operators using the helistop to sign the letter of agreement" (Draft EIR, page 2-30). Additionally, mitigation measure MM-HAZ-2 requires coordination with the March ARB. As such, March ARB staff would be made aware of the Project and would have the ability to comment on the Project and to work with the Project applicant and operator to ensure that any potential conflicts between the Project and the March ARB are avoided or minimized. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

C-7 This comment describes other requirements pertaining to operations of the proposed helipad. First, the comment states that structures should not be at a height that will result in penetration of the approach imaginary surfaces. The comment states that impacts to the helipad imaginary surfaces from temporary construction-related activities (e.g., construction cranes) should be identified, and that the Federal Aviation Administration (FAA) advisory Circular 150/5370-2E, "Operational Safety on Airports During Construction," can be incorporated into the Project design to address construction-related impacts to the helipad imaginary surfaces. The comment further states that the FAA may also require a Notice of Proposed Construction or Alteration (Form 7460-1) in accordance with Federal Aviation Regulations Part 77 "Objects Affecting Navigable Airspace." As described in Section 4.6.5 of the Draft EIR, the Project would comply with FAA requirements related to equipment that exceeds maximum height limits. The Draft EIR specifically states that "In the event Project construction or operation requires the use of cranes or other equipment that will exceed 1,676 feet AMSL at Site A, 1,669 feet AMSL at Site B, and/or 1,664 feet AMSL at the hospital, MOB 1, 2, or Parking Structure 2 areas of Site C, or 1,660 feet AMSL at the MOB 3, 4, 5 or Parking Structure 1 areas of Site C, mitigation measure MM-HAZ-1 requires the applicant to notify the FAA" (Draft EIR, page 4.6-16).

The commenter also states that the FAA will require a Notice of Landing Area Proposal (Form 7480-1). This requirement is characterized in Section 4.6.2 of the Draft EIR, on page 4.6-2. As such, the Project would comply with all applicable FAA requirements. The FAA is also listed as a permitting agency for the Project in Section 2.6 of the Draft EIR. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

C-8 The commenter thanks the City for the opportunity to review the Project and provides contact information for the Caltrans Division of Aeronautics. The City appreciates the Caltrans Division of Aeronautics' comments and will use the contact information provided, as needed. This comment is does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

Comment Letter D

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr. Governor

DEPARTMENT OF TRANSPORTATION
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PLANNING (MS 722)
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Make Conservation
A California Way of Life

August 17, 2017

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AUG 21 2017
Community & Economic Development Department

City of Riverside
Community & Economic Development
Planning Department
Sean Kelleher
3900 Main Street, 3rd Floor
Riverside, CA 92522

Canyon Springs Healthcare Campus SCH#2016031001 (Riv 215 PM R37.43)

Mr. Kelleher,

We have completed our initial review for the above mentioned proposal to construct a Hospital with 300 beds, 375,000 square foot Medical Office Buildings and Surgical Center, a 234 Dwelling Unit Senior Housing and Assisted Living Facility with 250 beds. Located south of Canyon Springs Parkway, north of Eucalyptus Avenue and west of Day Street.

As the owner and operator of the State Highway System (SHS), it is our responsibility to coordinate and consult with local jurisdictions when proposed development may impact our facilities. As the responsible agency under the California Environmental Quality Act (CEQA), it is also our responsibility to make recommendations to offset associated impacts with the proposed project. Although the project is under the jurisdiction of the City of Riverside due to the Project's potential impact to State facilities it is also subject to the policies and regulations that govern the SHS. D-1

We recommend the following to be provided:

- Please include the Synchro analysis output for review.
- Section 1.2.3 Cumulative (Opening Year) Conditions – The proposed project is anticipated to be completed in 2016. This opening year has passed, please update all traffic data for the opening year and include: project traffic volumes, cumulative traffic volumes, existing plus ambient plus project traffic volumes, existing plus ambient plus project plus cumulative traffic volumes, and all the Level of Service (LOS) tables accordingly. D-2
- Please resubmit Hydrology Maps with larger Fonts current size is too small to read.

We appreciate the opportunity to offer comments concerning this project. If you have any questions regarding this letter, please contact Talvin Dennis at (909) 806-3957 or myself at (909) 383-4557 for assistance. D-3

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Mr. Kelleher
August 17, 2017
Page 2

Sincerely,

MARK ROBERTS
Office Chief
Intergovernmental Review, Community and Regional Planning

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Response to Comment Letter D

California Department of Transportation – District 8 Planning
August 17, 2017

D-1 The commenter summarizes the Project and describes the California Department of Transportation – District 8 (Caltrans) responsibilities. The commenter states that Caltrans is a responsible agency for the Project under CEQA.

This comment is introductory in nature and does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR. As described in Response to Comment Letter C, Caltrans' Division of Aeronautics is a responsible agency for the Project under CEQA, since the proposed heliport would require a State heliport permit from Caltrans. The applicant will comply with all applicable policies and regulations set forth by responsible agencies for the Project.

D-2 The commenter lists three recommendations from Caltrans: 1) provide the Synchro analysis output for Caltrans' review; 2) update the opening year and the associated analysis, since the opening year that was used for the analysis (2016) has passed; and 3) resubmit hydrology maps with larger fonts.

The Synchro analysis output is provided in Appendix L of the Draft EIR. The City discussed the availability of the Synchro analysis with the commenter via phone on August 22, 2017. Pursuant to the conversation, the City emailed the commenter on August 22, 2017, identifying the location of the Synchro analysis on the City's website. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

The Draft EIR was released in 2017; as such, the EIR acknowledges and discusses the fact that an opening year of 2016 is not possible. However, the underlying technical calculations of the traffic analysis remain conservative despite the fact that the opening year has passed. The ambient growth that is used in the traffic analysis constitutes a small portion of the background traffic, and the opening year traffic volumes include full buildout of all cumulative projects, along with full buildout of the Canyon Springs Healthcare Campus Specific Plan project. Therefore, the results of the traffic impact analysis in the Draft EIR are conservative and overstate potential impacts. As such, this comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR. While no further analysis is necessary, in response to this comment the City prepared a supplemental cumulative traffic evaluation to study an opening year of 2019 (see Attachment B of this Final EIR for the supplemental traffic evaluation). Under Cumulative With

Project Conditions (Opening Year 2019), no new impacts were identified that were not previously disclosed in the Draft EIR. As shown in Attachment B, several additional improvements are recommended to address impacts at the Day Street/Eucalyptus Avenue and Day Street/Alessandro Boulevard intersections that would occur under Cumulative With Project Conditions (Opening Year 2019). However, these recommended improvements have been previously identified in the Draft EIR as mitigation measures to address impacts under Cumulative With Project Conditions (Opening Year 2016) and General Plan Buildout Conditions. See specifically MM-TRAF-6, MM-TRAF-8, and MM-TRAF-10 on pages 4.11-82 and 4.11-83 of the Draft EIR. These mitigation measures specify that the Project applicant would be required to comply with the measures prior to opening the Project for operation. As such, these measures would be implemented prior to the opening year of the Project and would address impacts under the Cumulative With Project Conditions (Opening Year 2019) traffic scenario, as well as General Plan Buildout Conditions. As such, no new mitigation measures are required to address traffic impacts under Cumulative With Project Conditions (Opening Year 2019).

Maps pertaining to hydrology are provided in Section 4.7 of the Draft EIR and in Appendix J. The Draft EIR, including the maps in Section 4.7 and Appendix J, are available for downloading on the City's webpage (https://riversideca.gov/static/planning/). Therefore, these maps can be viewed electronically and expanded to the necessary size for optimal viewing. As identified in Section 4.7 of the Draft EIR, impacts to hydrology and water quality are less than significant. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

D-3 The commenter thanks the City for the opportunity to review the Project and provides contact information for Caltrans District 8. The City appreciates Caltrans' comments and will use the contact information provided, as needed. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

Comment Letter E

Board of Education
Cleveland Johnson, President
Gary E. Baugh, Ed.S, Vice President
Susan Smith, Clerk
Jesus M. Holguin
Evan Morgan

Superintendent of Schools
Martinrex Kedziora, Ed.D.

Moreno Valley Unified School District

25634 Alessandro Boulevard
Moreno Valley, California 92553
951-571-7500
www.mvusd.net

The mission of Moreno Valley Unified School District is to ensure all students graduate high school prepared to successfully enter into higher education and/or pursue a viable career path.

August 17, 2017

RECEIVED
AUG 21 2017
Community & Economic Development Department

Sean Kelleher, Associate Planner
City of Riverside
Community & Economic Development Department
Planning Division
3900 Main Street, 3rd Floor
Riverside, CA 92522

SUBJECT: Response to DRAFT EIR for the Canyon Springs Healthcare Center

Thank you for the opportunity to review and comment on the Draft Environmental Impact Report for the Canyon Springs Health Care Center.

The Moreno Valley Unified School District, Facilities and Planning Department has reviewed the documents and maps provided to us.

As previously stated in our letter dated October 4, 2016 to Paula Purcell with TDA, Inc. (letter attached), this project is directly next to one of our existing elementary schools: Edgemont Elementary at 21790 Eucalyptus Avenue in Moreno Valley, just southeast of the subject project.

We have the following exceptions/comments to this DEIR for the Canyon Springs Healthcare Center:

(1) Ambulance noise would be a disruption and distraction to the educational process for our students attending Edgemont Elementary. To help alleviate the noise interruptions, a concrete eight foot (8') wall needs to be constructed (similar to the one at Sunnymead Middle School that butts up against the Kaiser Medical Complex on Heacock.). This wall would run along the West and North sides of Edgemont Elementary. E-1
(2) An emergency exit/access gate to be located at the Northwest end of the concrete wall. E-1
(3) Developer Fees: This project will be subject to Level I Developer Fees. E-2

Thank you and best regards,

Samer Alzubaidi
Director
Facilities Planning & Development
MORENO VALLEY UNIFIED SCHOOL DISTRICT
13911 Perris Blvd., Building A
Moreno Valley, CA 92553
salzubaidi@mvusd.net

/cla

Moreno Valley Unified School District

25634 Alessandro Boulevard
Moreno Valley, California 92553
951-571-7500
www.mvusd.net

The mission of Moreno Valley Unified School District is to ensure all students graduate high school prepared to successfully enter into higher education and/or pursue a viable career path.

October 4, 2016

COPY

Paula Purcell
TDA, Inc.
2025 Pioneer Court
San Mateo, CA 94403

SUBJECT: Response to Pre-DEIR for the Canyon Springs Healthcare Center

Thank you for the opportunity to review and comment on the Pre-Draft Environmental Impact Report for the Canyon Springs Health Care Center.

The Moreno Valley Unified School District, Facilities and Planning Department has reviewed the documents and maps provided to us.

This project is directly next to one of our existing elementary schools: Edgemont Elementary at 21790 Eucalyptus Avenue in Moreno Valley, just southeast of the subject project.

We have the following exceptions/comments to this Pre-DEIR for the Canyon Springs Healthcare Center:

(1) Ambulance noise would be a disruption and distraction to the educational process for our students attending Edgemont Elementary. To help alleviate the noise interruptions, a concrete eight foot (8') wall needs to be constructed (similar to the one at Sunnymead Middle School that butts up against the Kaiser Medical Complex on Heacock.). This wall would run along the West and North sides of Edgemont Elementary.
(2) An emergency exit/access gate to be located at the Northwest end of the concrete wall.
(3) Developer Fees: This project will be subject to Level I Developer Fees.

E-3

Looking forward to receiving the DEIR in the near future.

Thank you and best regards,

Alice Grundman
Interim Director
Facilities Planning & Development
MORENO VALLEY UNIFIED SCHOOL DISTRICT
23301 Dracaea Avenue
Moreno Valley, CA 92553
agrundman@mvusd.net

/cla

Response to Comment Letter E

Moreno Valley Unified School District
August 17, 2017

E-1 The commenter expresses concern regarding ambulance noise that could be heard at Edgemont Elementary School, which is adjacent to the Project site. The commenter requests that an 8-foot-tall concrete wall be constructed along the west and north sides of Edgemont Elementary School to address noise concerns. The commenter also requests that an emergency exit/access gate be constructed at the northwest end of this wall.

A detailed noise impact analysis was conducted as part of the Draft EIR for the Project and is contained in Section 4.9 and Appendix K of the Draft EIR. Edgemont Elementary School is considered a noise-sensitive receptor for the purposes of the noise impact analysis (see page 4.9-4 of the Draft EIR). Noise that is anticipated to be heard at Edgemont Elementary School was modeled and calculated as part of the analysis.

The noise analysis was conducted assuming that a noise barrier would be constructed along the western boundary and northeastern corner of the Edgemont Elementary School property; as such, the calculated noise levels include attenuation provided by this noise barrier that would be below the required thresholds. As such, implementation of MM-NOI-1 requires the Project applicant to construct an 8-foot-high perimeter wall along the western boundary and northeastern corner of the Edgemont Elementary School property. Upon implementation of MM-NOI-1, operational noise produced by the Project would result in a less than significant effect to sensitive receptors, including Edgemont Elementary School. Additionally, the Specific Plan dictates that this perimeter wall would also extend along the northern boundary of the Edgemont Elementary School property (see Figure 7-3, Fencing and Wall Plan, in the Specific Plan). As such, in accordance with MM-NOI-1 and with the Specific Plan, the wall that is requested by the commenter (along the north, east and west school property boundary) would be installed. Regarding the recommended emergency exit/access gate along the wall, emergency access would be provided per fire code requirements. For the reasons described above, this comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

E-2 The commenter states that the Project would be subject to Level I Developer Fees. The Project applicant would pay developer fees for the Project as required. This

comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

E-3 This comment constitutes an attachment to Comment Letter E, which is a letter that the Moreno Valley School District submitted to the Project applicant on October 4, 2016. The Project applicant received the Moreno Valley School District's letter dated October 2016, and the recommendations in this letter were considered in preparing the Draft EIR. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

Comment Letter F

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY

EDMUND G. BROWN JR., *Governor*

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

August 16, 2017

RECEIVED
AUG 22 2017
Community & Economic
Development Department

Mr. Sean Kelleher
City of Riverside
Community Development Department
Planning Division
3900 Main Street, 3rd Floor
Riverside, CA 92522

Draft Environmental Impact Report (DEIR), Canyon Springs Healthcare Campus Specific Plan in Riverside County, Approximate Milepost 433.59, Santa Ana Pipeline (SAPL), Southern Field Division, SCH2016031001

Dear Mr. Kelleher:

Thank you for the opportunity to review and comment on the DEIR for the Canyon Springs Healthcare Campus Specific Plan and Amendment (SPA), to replace Canyon Springs Business Park Specific Plan (SP). The notice describes a site masterplan to be developed which includes both short-term and long-range planning goals that cover an anticipated construction period of approximately 10 years. The SPA would include future development over five phases. The approximately 50.85-acre project site consists of three separate, non-contiguous, previously graded areas located within the SP area in Riverside, California. Future Project phasing could overlap, be out of sequence, or be concurrent, depending on market conditions. F-1

The Department of Water Resources (DWR) has reviewed the submitted materials, and has the following comments:

1. It is anticipated there will be impact for DWR access to the SAPL and related appurtenances, which are part of the State Water Project (SWP). It is our objective to maintain a clear and accessible right-of-way when approving new encroachments, i.e. parking lots, fences, etc. within DWR right-of-way. F-2

2. This development will require an encroachment permit, or agreement from DWR. All encroachment elements of the project must conform to specifications as outlined in California Code of Regulations, Title 23, Sections 600 to 635. More information about encroachments within DWR right-of-way can be found at: http://www.water.ca.gov/engineering/Services/Real_Estate/Encroach_Rel/

3. Please provide DWR with a copy of any subsequent documentation when it becomes available for review. Any future correspondence relating to this project should be sent to: F-3

Department of Water Resources

Mr. Sean Kelleher
August 16, 2017
Page 2

Department of Water Resources
Division of Operations and Maintenance
Attn: Leroy Ellinghouse, Chief,
SWP Right-Of-Way Management Section
1416 9th Street, Room 641-1
Sacramento, California 95814

F-3
Cont.

If you have any questions, please contact Leroy Ellinghouse, Chief of the SWP Right of Way Management Section, at (916) 659-7168 or Robert Martinez at (916) 654-8982.

Sincerely,

David M. Samson, Chief
State Water Project Operations Support Office
Division of Operations and Maintenance

cc: State Clearinghouse
Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, California 95814

TDA Investment Group
2025 Pioneer Court
San Mateo, CA 94403
Attn: Paula Purcell

Response to Comment Letter F

Department of Water Resources
August 16, 2017

F-1 This comment consists of a summary of the Project. This comment is introductory in nature and does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

F-2 The commenter states that the Project would impact Department of Water Resources (DWR) access to the Santa Ana Pipeline and related appurtenances, which are part of the State Water Project. The commenter states that it is DWR's objective to maintain a clear and accessible right-of-way when approving new encroachments, such as parking lots, fences, etc., within DWR's right of way. The commenter further states that the Project would require an encroachment permit or agreement from DWR and that all encroachment elements of the Project must conform to specifications as outlined in California Code of Regulations, Title 23, Sections 600 to 635. The commenter then provides an online resource for more information regarding encroachments within the DWR's right of way.

As stated in Section 4.8.5 of the Draft EIR, the applicant's contractor would be required to obtain all necessary encroachment permits prior to construction and would also be required to comply with all applicable encroachment permit guidelines and any permit conditions. Upon obtaining the required permits and complying with the stipulations of the permits, the Project would comply with the land use adjacency regulations associated with DWR rights-of-way (see page 4.8-30 of the Draft EIR). This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

F-3 The commenter requests that DWR be provided with a copy of any subsequent documentation for the Project when it becomes available for review and provides an address where future correspondence regarding the Project should be directed. The commenter also provides contact information for the State Water Project Right of Way Management Section. The City appreciates DWR's comments and will use the contact information provided, as needed. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

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Comment Letter G

From: Jessica Valdez
To: Kelleher, Sean
Cc: Joseph Ontiveros
Subject: [External] Canyon Springs Healthcare Campus Specific Plan & Amendment to the Canyon Springs Business Park Specific Plan
Date: Tuesday, August 22, 2017 4:36:47 PM
Attachments: image001.jpg

Sean,

Our office is in receipt of your Notice of Availability of a Draft Environmental Impact Report for the **Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park Specific Plan (State Clearinghouse No. 2016031001)**. The information provided has been reviewed. The tribe is in agreeance with the cultural resource mitigation measures that are being proposed. The Soboba Band of Luiseño Indians appreciates your observance of Tribal Cultural Resources and their preservation in your project. G-1

Jessica Valdez, Cultural Resource Specialist
Soboba Band of Luiseño Indians
Cultural Resources Department
Office: (951)-654-5544 Ext: 4139
JValdez@soboba-nsn.gov

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Response to Comment Letter G

Soboba Band of Luiseño Indians
August 22, 2017

G-1 The commenter states that the Soboba Band of Luiseño Indians is in agreeance with the cultural resource mitigation measures that are being proposed for the Project. The City appreciates the Soboba Band of Luiseño Indians' response. This comment expresses support for the proposed cultural resources mitigation measures set forth in the Draft EIR and does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

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Comment Letter H

Community Development Department
Planning Division
14177 Frederick Street
P. O. Box 88005
Moreno Valley CA 92552-0805
Telephone: 951.413-3206
FAX: 951.413-3210

August 22, 2017

Mr. Sean P. Kelleher
Associate Planner
City of Riverside
Planning Division
3900 Main Street, Third Floor
Riverside, CA 92522

Re: Comments on the Draft Environmental Impact Report (DEIR) for the Proposed Canyon Springs Healthcare Campus - State Clearinghouse No. 2016031001

Dear Mr. Kelleher:

The City of Moreno Valley appreciates the opportunity to comment on the proposed Draft Environmental Impact Report (DEIR) for the Proposed Canyon Springs Healthcare Campus Project. The project proposes a phased healthcare campus to include a hospital, medical buildings, assisted living, skilled nursing, and age restricted housing on a 50.85 acre parcel of land in the Canyon Springs Business Park. The project site is located in the City of Riverside, east of Interstate 215, west of Day Street, north of Eucalyptus Avenue, and immediately adjacent to and south of the City of Moreno Valley. H-1

The proposed Project is located at key entries/gateways to the City of Moreno Valley including Day Street and Eucalyptus Avenue directly from State Route 60 and Interstate 215. Given the proximity of the project to these gateways, the potential for impacts to established and emerging developments in Moreno Valley are of concern. Further, given the proposed project envisions a substantial land use change in an area that has not been previously considered the concern for Urban Decay expressed in our March 31, 2016 comment letter on the Notice of Preparation (NOP) remains. H-2

The City of Moreno Valley is providing comments on the DEIR as follows, including NOP comments not addressed from our original letter:

1 **General DEIR Comment:** On Page ES-51, the DEIR states, "it is anticipated that as the City's residents age, they may move from one area of the City to locate in the proposed project's senior housing facility, independent living/memory care, assisted living, or skilled nursing facility, as needed, depending on medical needs." H-3

Canyon Springs Healthcare Campus Project
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The DEIR statement above is misleading. .A majority of the population utilizing the facility would likely be drawn from the City of Moreno Valley and not from the City of Riverside. Please make that clarification in the document and all related technical studies. H-3 Cont.

2 Aesthetics

NOP Comments - The Initial Study noted that Aesthetics are not considered a potential significant impact. Section 4.2.1(b) in particular is checked "No Impact" but must be corrected to "Potentially Significant Unless Mitigation Incorporated." H-4 Section 4.2.1(d) of the Initial Study is insufficient in addressing the potential impact to the existing eleven single family residences along Eucalyptus Avenue that back up to the project site. H-5 The City requests early consultation on aesthetic aspects of the project and analysis on the proposed project's architectural and landscape style/theme. H-6

DEIR Comments - The finding in the DEIR (Sections 4.1.6 and 4.1.7) with regard to Aesthetics needs to be changed from "No Impact" to "Significant impact." The document has not yet clearly described and discussed the impacts the project will have on the adjoining Moreno Valley residential community directly along the southern edge of the project. A parking structure, two separate three to four story medical office buildings up to 50 feet in height, and an internal circulation connection are all proposed for the southwest portion of Planning Area 7 (Site C-2). The placement of three story medical buildings 75 feet from existing residential structures is a significant concern that must be addressed in the EIR. Consideration, at a minimum, of the loss of the scenic vista to Box Springs mountain from the homes, and consideration of the new light, glare and shade impacts that could be created on the homes as a result of the proposed new structures must be addressed. Mitigation measures to minimize those impacts must be added. H-7 In our March 31, 2016 NOP comment letter, The conceptual elevations and landscape images provided in the DEIR show that the residences will be directly adjacent to the back side of medical office buildings and a parking structure, which are not typically the structural facades that receive enhanced architectural treatments. H-8 In addition, you are showing a local driveway (Driveway #14) would be located directly behind the homes, which present significant concerns. H-9 The requirement for enhanced architecture, and appropriate attention to elements such as generators, trash enclosures, loading docks, delivery doors, etc. must be addressed. H-10 The landscape concepts suggest significant growth of plants and color over a five year period; however, what mitigation will be put in place to ensure the landscape is achieved? As the plans are conceptual only, we have concern that such robust landscape can actually be achieved and maintained if Driveway #14 is actually implemented behind the homes. Detail must be put into the Specific Plan to address this edge condition. H-11

Canyon Springs Healthcare Campus Project
Draft Environmental Impact Report
August 22, 2017
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3 Air Quality

DEIR Comment- Mitigation Measure MM-AQ-1 states, "During construction activity, all construction equipment (≥ 150 horsepower) shall be California Air Resources Board (CARB) Tier 3 Certified or better."

MM AQ-1 (Section 4.26 on Page 4.2-37) must be revised to require, at minimum, Tier 4 construction equipment during project construction. The EPA Tier 4 emissions standards are available for use as a mitigation measure. Incorporation of equipment meeting Tier 4 emission standards would further reduce the project's expected significant and unavoidable air quality impacts by using the best available mitigation. The best and most effective mitigation must be applied to the project prior to the City of Riverside giving consideration to adoption of a Statement of Overriding Considerations related to air quality impacts. H-12

4. Land Use Planning

NOP Comment - The NOP letter requested an Urban Decay Analysis be prepared with the DEIR and that Land Use/Planning be included as a significant impact due to urban decay possibilities and other impacts from changes to land use that affects existing and surrounding uses. H-13

DEIR Comments - An urban decay analysis (Appendix G - Referenced in DEIR Section 3.3, Pages 3-10 through 3-15) was completed by the City of Riverside; however there are remaining concerns regarding the analysis. The analysis did not, and must provide a fair and thorough assessment of how the regional demand for hospital care, assisted living, medical office buildings and hospital beds would be met with full consideration of all planned projects coming to fruition in Moreno Valley (e.g., Riverside University Medical Center (RUMC), Kaiser Hospital, March Life Care) prior to assuming need for the proposed Riverside Healthcare Campus. H-14

The Land Use Planning section did not include mitigation measures to minimize impacts on nearby sensitive receptors, particularly the residential units along the southern project edge. The document discloses that an eight foot tall wall and trees shall be located along the southern perimeter of Planning Area 7. At minimum, the DEIR should have addressed the impact as "significant with mitigation imposed" and included additional mitigation measures to further minimize light, glare and noise. As noted above, the proposal to have a driveway (Driveway #14) directly behind these homes presents concerns for noise, and security and crime prevention must also be considered in this area of the project. H-15

5, Transportation and Traffic

NOP/TIA Comments - The following items related to the February 2017 Traffic Impact Analysis (TIA) have not been addressed in the DEIR: H-16

Canyon Springs Healthcare Campus Project
Draft Environmental Impact Report
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Cumulative Development - The City of Moreno Valley project PA15-0047 to 0051 and PA16-0012 (Master Plot Plan to develop a 112-room hotel, a 104-room hotel, a service station with convenience store, retail buildings, and a fast-food restaurant with drive-through on six parcels located at the northwest corner of Day Street/Eucalyptus Avenue) must be included in the Cumulative Developments list for this study. Future vehicle trips generated from all pertinent intersections included for the Level of Service analysis must be included in the TIA and DEIR. H-16 Cont.

Mitigation Measures - Any proposed mitigation measures for Project Opening Year (2016) that involve lane addition/street widening at the following intersections in the City of Moreno Valley must be re-evaluated and mitigation measures must be identified as warranted:

- Day Street/Cottonwood Avenue (Exhibit 9-3);
- Day Street/Bay Avenue (Exhibit 9-4);
- Day Street/Alessandro Boulevard (Exhibit 9-5);
- Memorial Way/Towngate Boulevard (Exhibit 9-6).

The proposed mitigation measures for the three intersections on Day Street cannot be achieved by Project Opening Year without significant and challenging right-of-way acquisitions. Detailed preliminary cost estimates, including consideration of all potentially significant right-of-way acquisitions, are needed for each location to ensure that the full potential costs are understood, as well as to evaluate the potential additional environmental impacts that may be incurred to carry out each improvement. The striping recommendation for the intersection of Memorial Way/Towngate Boulevard is not practical due to the fact that deleting a through lane at the intersection will significantly impact southbound traffic operation on Memorial Way and will also require modification to the existing lane striping of the entire segment of Memorial Way, north of Towngate Boulevard. H-17

Fair Share Cost Estimate - List sources for the estimated costs of the recommended improvements in Table 9-4 and 9-5. Were costs based on a recent TUMF nexus study or a study of program costs for capital improvements in Riverside County?

DEIR Comments - The following are additional comments on the DEIR:

Site Access - Driveway 1 is not a full access driveway. Traffic movements at Driveway 1/Day Street intersection will be restricted to right-in/right-out/left-in only by a raised concrete median currently under construction on Day Street. The analysis must be cleaned up to exclude the movement of full left turns out of the site. H-18

Canyon Springs Healthcare Campus Project
Draft Environmental Impact Report
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Site Access – Driveway #14 (intersection 33) shown on Figure 5-1 of the Specific Plan, needs to be relocated to the north or eliminated. In its current location it presents a potential unsafe traffic operational condition due to the short distance from the driveway to Eucalyptus. Furthermore, the proximity of the driveway to the existing residences is not acceptable because of the adverse impacts the driveway will have on the homes. It is unclear why the driveway may only be designed for right-out movements. H-19

Table 9-3 - An explanation is required on why the project impact at the intersection of Bay Ave/Day Street is identified as "NOT A SIGNIFICANT IMPACT" H-20

Table 9-4: The cost estimate for the recommended improvements for the following intersections must be revised to include the cost of right-of-way acquisition at current market value:

- Day Street/Cottonwood Avenue (Exhibit 9-3);
- Day Street/Bay Avenue (Exhibit 9-4);
- Day Street/Alessandro Boulevard (Exhibit 9-5).

The cost estimate for the recommended improvements for Memorial Way/Towngate Boulevard (Exhibit 9-6) must be revised to include the cost of modification to the existing lane striping of the entire segment of Memorial Way, north of Towngate Boulevard. H-21

Fair Share Cost Estimate: With the revised cost estimates for the recommended improvements, the amounts of Fair Share Cost must also be revised:

- Day Street/Cottonwood Avenue (Exhibit 9-3);
- Day Street/Bay Avenue (Exhibit 9-4);
- Day Street/Alessandro Boulevard (Exhibit 9-5);
- Memorial Way/Towngate Boulevard (Exhibit 9-6).

Queuing analysis: In addition to the queuing analysis for the left-turn lanes of northbound and southbound traffic as shown in Table 8-1, the traffic study also must include queuing analysis for east bound and westbound left-turn lanes at all impacted intersections along Day Street. H-22

Pedestrian/Bicycle Connectivity: The traffic study must evaluate pedestrian and bicyclist connectivity from the project buildings to the adjacent streets and transit service routes within the study area. H-23

Based upon the above transportation review comments, the Traffic Impact Analysis for the project must be revised and resubmitted to the City of Moreno Valley's Transportation Engineering Division for further review. H-24

Canyon Springs Healthcare Campus Project
Draft Environmental Impact Report
August 22, 2017
Page 6 of 7

6. Mandatory CEQA Topics

NOP Comment - The Initial Study did not address what land uses are being contemplated in Planning Area 6 on the west side of Valley Springs Road. The City is aware of prior site planning documents that show potential for hotels on this site. In addition, the City of Moreno Valley has been contacted on several occasions over the past couple of years to inquire about development projects at the northwest corner of Valley Springs and Eucalyptus.

DEIR Comment – All known or reasonably known future development of Project Area 6 must be included and evaluated in Section 5.2 "Cumulative Impacts Analysis" of the DEIR. Potential segmentation of the project is a concern as it does not allow for full consideration of the potential and probable impacts.

H-25

7 Evaluation of Alternatives

NOP Comments - The Initial Study did not discuss whether or not the DEIR document would include an evaluation of alternative sites for the proposed Healthcare Campus. The DEIR must evaluate alternative site(s) for the proposed project, and could include site(s) within the City of Moreno Valley. The City respectfully requests to be consulted early on the selection of alternate sites.

DEIR Comments – It is recognized that alternatives, including alternative project sites, were considered; however, the City of Moreno Valley was not consulted on the alternative sites considered in Moreno Valley which would have been appropriate. The determinations to eliminate alternate sites 15, 16, 17, and 18 warrant further discussion in the EIR. For example, it is not clear why Site No. 15 - Festival Shopping Center in DEIR Section 6.5 (Table 6, Pages 6-4 through 6-6) was rejected as an alternative site for the proposed medical complex. One observation is that the area shown for Site 15 on Figure 6-1 of the DEIR does not encompass the full Festival Center properties. The reason given for dropping this site from consideration was the site included, "too many ownerships." The concern is that multiple ownerships would not be a basis for rejection as an alternative site. One property owner owns 42.15 acres or over half of the 81.29 acres included in the existing Festival Specific Plan. The site, which includes comparable acreage, is located outside the Airport Influence Area Boundary and is close to the project site (2.5 miles away). Other potential sites evaluated in table 6-1 were not rejected due to multiple project owners. Proposed uses included in the Canyon Springs project would be conditionally permitted in the Festival Specific Plan (zoned Community Commercial) and would not require a change of zone or general plan amendment as the Riverside site requires.

H-26

Canyon Springs Healthcare Campus Project
Draft Environmental Impact Report
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The City of Moreno Valley appreciates the opportunity to provide comments on the DEIR, and looks forward to working with the City of Riverside as the document is finalized. We respectfully request that the City of Moreno Valley receive copies of the Final EIR and associated responses to comments when available. Please include the City on any final EIR mailing lists and provide future notification of meetings/public hearings associated with the project. H-27

Should you have any questions or concerns, please contact Mark Gross, Senior Planner at (951) 413-3215.

Sincerely,

Richard J. Sandzimier
Planning Official

c City Council
City Manager
Assistant City Manager
City Attorney
Department Heads
Adria Reinerston, Fire Marshall
Eric Lewis, City Traffic Engineer
Michael Llyod, Land Development Division Manager/Assistant City Engineer
Candace Cassel, Special Districts Division Manager
Michele Patterson, Economic Development Manager
Mark Gross, Senior Planner
Claudia Manrique, Associate Planner
Joy Chen, Planning Intern

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Response to Comment Letter H

City of Moreno Valley
August 22, 2017

H-1 This comment consists of a summary of the Project. This comment is introductory in nature and does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-2 The commenter states that the Project is located at key entries/gateways to the City of Moreno Valley, including Day Street, Eucalyptus Avenue, State Route 60, and Interstate 215. The commenter expresses concern regarding the proximity of the Project to these gateways and the potential for impacts to established and emerging developments in Moreno Valley to occur. The commenter expresses concern that the land use changes caused by the Project would lead to urban decay. (The commenter then references a previous comment on urban decay submitted in response to the Notice of Preparation and states that urban decay remains a concern for the City of Moreno Valley.)

Throughout the Draft EIR, the proximity of the Project site to the City of Moreno Valley is acknowledged and discussed. In response to the City of Moreno Valley's NOP comment letter, the issue of aesthetics has been included as a stand-alone section in the Draft EIR (despite being deemed as having less than significant impacts in the Initial Study). The aesthetics section of the Draft EIR (Section 4.1) analyzes views of the Project as observed from State Route 60, since this highway is identified as a scenic highway in the City of Moreno Valley's General Plan. The analysis in the Draft EIR determined that the Project would not result in a substantial adverse effect on scenic resources as observed by motorists along State Route 60 (see pages 4.1-41 and 4.1-42 of the Draft EIR). Other visual impacts of the Project as observed from surrounding areas (including areas within the City of Moreno Valley), are also addressed in Section 4.1 of the Draft EIR. Impacts were determined to be less than significant; see Section 4.1 of the Draft EIR for substantiation of this determination and for more details of the aesthetics analysis. Additionally, the land use and planning effects of the Project were discussed in the Draft EIR. The land use and planning analysis characterizes surrounding areas in the City of Moreno Valley and addresses the compatibility of the Project with these surrounding land uses. Impacts were determined to be less than significant with the implementation of mitigation measures that address effects in the categories of air quality, cultural resources, noise, traffic, and utilities and service

systems. See Section 4.8 of the Draft EIR for substantiation of this impact determination and for more details of the land use and planning analysis.

In response to the City of Moreno Valley's NOP comment letter, an urban decay analysis was prepared as part of the Draft EIR. The urban decay analysis is included as Appendix G to the Draft EIR and is summarized in Section 3.3 of the Draft EIR. As stated in Section 3.3, the analysis concluded that the Project would not lead to urban decay. See pages 3-10 through 3-14 of the Draft EIR, which contain substantiation for this conclusion. As stated in Section 3.3, a 2004 court ruling (Bakersfield Citizens for Local Control v. City of Bakersfield, 124 Cal. App. 4th 1184) defined urban decay as "…a chain reaction of store closures and long-term vacancies, ultimately destroying existing neighborhoods and leaving decaying shells in their wake" (Draft EIR, Appendix G). Subsequent cases have refined the definition of urban decay as follows: "Urban decay is defined as, among other characteristics, visible symptoms of physical deterioration that invite vandalism, loitering, and graffiti that is caused by a downward spiral of business closures and multiple long term vacancies. This physical deterioration to properties or structures is so prevalent, substantial, and lasting for a significant period of time that it impairs the proper utilization of the properties and structures, or the health, safety, and welfare of the surrounding community. The manifestations of urban decay include such visible conditions as plywood-boarded doors and windows, parked trucks and long term unauthorized use of the properties and parking lots, extensive gang and other graffiti and offensive words painted on buildings, dumping of refuse on site, overturned dumpsters, broken parking barriers, broken glass littering the site, dead trees and shrubbery together with weeds, lack of building maintenance, abandonment of multiple buildings, homeless encampments, and unsightly and dilapidated fencing." (Joshua Tree Downtown Business Alliance v. County of San Bernardino (2016) 1.Cal.App.5th 677, 685.) The Project does not consist of a "big-box" retail development that has the potential to cause economic and social problems, including physical blight manifested from long term vacancies; rather, it will provide healthcare services to an area in need of these types of services. The City of Moreno Valley has introduced no substantial evidence that a new healthcare facility will result in the type of blight noted in the *Joshua Tree* case, cited above; instead, the City of Moreno Valley appears to argue that the Project could impede development of currently vacant sites that could be used for competing medical projects. The Project area is underserved with healthcare facilities, and the Project's hospital would represent less than one-half of available hospital capacity identified for the 5-mile trade area surrounding the Project location. As such, the need for additional healthcare facilities in the area will persist even after development of the Project. As noted in Appendix G

of the Draft EIR, given the existing demand for additional hospital beds in the area, and throughout Riverside County in general, no one facility will be able to meet the existing minimum requirements for this area to satisfy the current undersupply. Ultimately, multiple facilities will need to be constructed in order to satisfy the demands that exist today (see page 3-14 of the Draft EIR). For these reasons, the Project is not expected to interfere with any established and emerging developments in Moreno Valley, nor is it expected to lead to urban decay. Further, in the event that multiple healthcare projects are ultimately constructed that serve the area's current and future needs and a currently vacant site proximate to the Project upon which a healthcare facility could be developed remains vacant, this would still not result in the type of extreme blight and urban decay discussed in the *Bakersfield* and *Joshua Tree* cases cited above. Therefore, this comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-3 This comment contains a quote from the Draft EIR which states that as the City residents age, they may move from one area of the City to locate in the Project's housing facilities. The commenter states that this is misleading and that a majority of the population using the Project's facilities would likely be drawn from the City of Moreno Valley and not from the City of Riverside. The commenter requests that the Draft EIR and all related technical studies be revised to reflect that a majority of the Project's patrons would come from the City of Moreno Valley.

The quote in this comment was extracted from the growth inducement analysis prepared for the Draft EIR, which is contained in Section 7-1 of the Draft EIR and is summarized in Section ES.7.2. The environmental analysis in the Draft EIR and the conclusions of this analysis are not substantially influenced by the source of the Project's residents, with the exception of the growth inducement analysis. The growth inducement analysis includes a quantitative assessment assuming a worst-case scenario in which all of the Project's residents move to the City from outside of the City, thereby increasing the population of the City. This scenario would account for the potential for a majority of residents to come from other cities, including the City of Moreno Valley. Even under these worst-case scenario conditions for population growth, the analysis in the Draft EIR determined that population growth attributable to the Project would be less than significant. However, the analysis also notes the potential for existing residents of the City to move to the Project as they age. While existing residents from the City of Moreno Valley may also move to the Project as they age, it is also possible that residents of the Project may come from the City of Riverside. The commenter provides no substantial evidence that most residents of the Project would move from the City of Moreno Valley to Project facilities. And, because the analysis in the Draft EIR

accounts for a worst-case scenario in which all residents of the Project would move to the City from somewhere outside of the City, this comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR. No changes to the analysis in the Draft EIR are necessary.

H-4 This comment consists of a concern that was previously expressed by the City of Moreno Valley in response to the NOP for the Project. The comment requests that the impact determination in Section 4.2.1(b) of the Initial Study be revised from "No Impact" to "Potentially Significant Unless Mitigation Incorporated."

Section 4.2.1(b) of the Initial Study discusses potential effects to scenic resources within a State Scenic Highway. In response to the City of Moreno Valley's NOP comment letter, the issue of aesthetics has been included as a stand-alone section in the Draft EIR (Section 4.1). Therefore, an additional discussion of potential effects to scenic resources within a State Scenic Highway was conducted as part of the Draft EIR analysis (see Section 4.1.5 of the Draft EIR). Impacts in this category were determined to be less than significant for the reasons described in Section 4.1.5 of the Draft EIR. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-5 This comment states that Section 4.2.1(d) of the Initial Study is insufficient in addressing the potential impact of the Project to the existing single-family residences along Eucalyptus Avenue that are adjacent to the Project site.

Section 4.2.1(d) of the Initial Study discusses the Project's potential to create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. In response to the City of Moreno Valley's NOP comment letter, the topic of aesthetics has been addressed in a stand-alone section of the Draft EIR (Section 4.1). Therefore, an additional discussion of light and glare effects was conducted as part of the Draft EIR analysis (see Section 4.1.5). Impacts in the category of light and glare were determined to be less than significant, for the reasons described in Section 4.1.5 of the Draft EIR. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-6 The commenter requests early consultation on aesthetic aspects of the Project and an analysis of the Project's architectural and landscape style/theme.

The City of Moreno Valley's NOP comments regarding aesthetics were reviewed and taken into consideration by the City of Riverside and the Project applicant. Additionally, the aesthetics section of the Draft EIR includes discussions and analysis of the Project's architectural and landscape style/theme. Aesthetics impacts were

determined to be below a level of significance under CEQA, as described and substantiated in Section 4.1 of the Draft EIR. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-7 The commenter requests that the significance finding for aesthetics in the Draft EIR be changed from "No Impact" to "Significant Impact." The commenter states that the analysis in the Draft EIR did not clearly describe and discuss impacts that the Project may have on the residences that are located along the southern boundary of the Project site. The commenter further expresses concern that the development of the Project components that are located near these residences may create impacts by blocking the scenic vista of Box Springs Mountain that is currently observed from these residences, and by causing new light, glare, and shade impacts on the residences. The commenter states that these impacts must be addressed and that mitigation measures to minimize these effects must be added to the Project.

The Draft EIR concludes that impacts in the category of aesthetics would be "less than significant." As such, aesthetic impacts have been identified in the Draft EIR; however, based on the analysis and substantiation contained in Section 4.1 of the Draft EIR, impacts were determined to be below a level of significance under CEQA thresholds. This determination is supported by substantial evidence and expert opinion. While the Draft EIR discusses effects on scenic vistas observed from Box Springs Mountain, effects on private views (i.e., views of this mountain from residences) are not generally considered impacts on the environment under CEQA. This is supported by numerous CEQA cases, including *Ocean View Estates Homeowners Assn., Inc. v. Montecito Water Dist., (2004),* 116 Cal.App.4th, at p. 402; *Mira Mar Mobile Community v. City of Oceanside, (2004),* 119 Cal.App.4th, at pp. 492-493; and *Association for Protection etc. Values v. City of Ukiah* (1991) 2 Cal.App.4th 720, 734 [3 Cal. Rptr. 2d 488]. As such, the Draft EIR addresses effects from public streets within and surrounding the Project area and determined that effects would be less than significant.

Section 4.1.6, Threshold AES-4, discusses the potential light and glare effects of the Project. Impacts were determined to be less than significant. As such, mitigation measures are not required in this category. The commenter does not provide any evidence of a significant light and glare impact that could be caused by the Project. Shade impacts would not occur at the residences that are located along the southern boundary of the Project site, because the new buildings associated with the Project are located to the north of these residences. As such, the new buildings would not cast shade/shadow on the residences. For these reasons, this comment does not identify

any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-8 The commenter states that the conceptual elevations and landscape images in the Draft EIR show that the existing residences along the southern Project site boundary would be directly adjacent to the back side of medical office buildings and a parking structure. The commenter expresses concerns that the facades facing the residences would not receive enhanced architectural treatments.

Design guidelines in the Canyon Springs Healthcare Campus Specific Plan would provide for architectural treatments on all sides of the new buildings. As stated in Section 4.1.4 of the Draft EIR, "building articulation will be present on all sides and rear walls of the buildings," "all facades of a building must feature design characteristics to help reduce the perceived scale of buildings," and "distinct architectural elements must divide and articulate all newly constructed building facades, in order to soften the scale and mass of buildings" (see page 4.1-13 of the Draft EIR). The buildings within the Project, including those adjacent to the residences, would be designed and constructed pursuant to these design guidelines. The commenter presents no evidence that the facades facing the adjacent residences would lack architectural treatment. Conversely, the Draft EIR presents evidence that the design of all building facades would be subject to a number of design guidelines ensuring that the facades facing the residences are built with articulation, design characteristics to reduce the perceived scale, and architectural elements. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-9 The commenter states that Driveway #14, which would be located behind the existing residences along the southern boundary of the Project site, presents significant concerns. However, the commenter does not list or otherwise provide any specific concerns pertaining to this driveway, nor does the commenter provide any evidence that a significant impact on the environment would occur as a result of this driveway.

As stated in Section 4.11 of the Draft EIR, the driveway behind the residences would be used for emergency access only. As such, daily trips and regular vehicular traffic would not occur at this driveway. The driveway would be used very sporadically, if at all. Additionally, as shown in Figure 4.1-2C of the Draft EIR, there would be a minimum 25-foot landscape setback where Site C borders the single-family residences to the south, and Project buildings along this boundary would be set back between 75 feet and 100 feet from the adjacent homes. As stated in Section 4.1.4 of the Draft EIR, the site access along the southern boundary of Site C would in fact

create additional buffer space between Project development and the existing uses immediately to the south of the Project site (see page 4.1-13 of the Draft EIR). Because the Project will implement design guidelines and appropriate setbacks as outlined in the Canyon Springs Healthcare Campus Specific Plan, the Project will not degrade the existing visual quality of the Project site and its surroundings (including the adjacent single-family residences), and impacts to the visual character and quality of the area were, therefore, determined to be less than significant (see page 4.1-43 of the Draft EIR). As such, this comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-10 The commenter states that the requirement for enhanced architecture and appropriate attention to elements such as generators, trash enclosures, loading docks, delivery doors, etc. must be addressed.

The Canyon Springs Healthcare Campus Specific Plan contains design guidelines that set forth criteria for architectural design and Project elements such as generators, trash enclosures, loading docks, delivery doors, etc. The design guidelines state that "loading, emergency vehicle access, delivery service areas, outdoor storage, and standalone mechanical facilities must be located and designed to minimize their visibility, circulation conflicts, and adverse noise impacts." The design guidelines also provide that "landscaping must be used to create screens and buffers for parking areas, storage areas, and trash/recyclable collection enclosures and provide separations between uses or activities where required." Refer to Chapter 8 of the Canyon Springs Healthcare Campus Specific Plan for additional details on the Project's design criteria for architecture and for Project elements such as generators, trash enclosures, loading docks, delivery doors, etc. The Draft EIR takes into account these design criteria in its environmental analysis. As stated and substantiated in Section 4.1.6 of the Draft EIR, the Project (including its architectural design and Project elements such as generators, trash enclosures, loading/deliver area, etc.) would have less than significant impacts to the visual character and quality of the site and its surroundings. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-11 The commenter expresses concern that the landscape plans shown in the Draft EIR will not be achieved. The commenter asks what mitigation would be put in place to ensure that the planned landscaping is implemented and expresses concern that Driveway #14 may interfere with landscaping plans behind the residences that are south of Site C. The commenter requests that details be put into the Specific Plan to address landscaping between Site C and the residences to the south.

The Specific Plan dictates the landscaping plans for the Project, including the landscaping that would be installed between Site C and the adjacent residences. The Specific Plan includes plant palettes that were designed for the Project site, and future landscaping development within the Specific Plan area would adhere to these selected palettes. The Specific Plan also contains stipulations for Project landscaping that would help ensure that the planned landscaping is established. For example, Table 6-1 of the Specific Plan states "to ensure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions." Furthermore, finalized landscaping plans would be reviewed and approved by the City prior to implementation, which would help ensure that the plans are developed pursuant to the Specific Plan and would also help ensure that the plans appear viable.

The analysis in the Draft EIR takes into account the landscaping design criteria established in the Specific Plan. As stated and substantiated in Section 4.1.6 of the Draft EIR, the Project would have less than significant impacts to the visual character and quality of the site and its surroundings, including the adjacent residences. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-12 The commenter states that MM-AQ-1 must be revised to require, at a minimum, Tier 4 construction equipment during project construction. The commenter further states that use of equipment meeting Tier 4 emission standards would further reduce the Project's expected significant and unavoidable air quality impacts by using the best available mitigation. The commenter states that the best and most effective mitigation must be applied to the Project prior to the City of Riverside giving consideration to adoption of a Statement of Overriding Considerations related to air quality impacts.

According to the air quality section in the Draft EIR (Section 4.2), MM-AQ-1 reduces the potentially significant construction-related oxides of nitrogen (NO_x) emissions to a less than significant level. MM-AQ-2 through MM-AQ-6 reduce operational impacts, but not to a level below significance. As such, a stricter version of MM-AQ-1 (e.g., requiring Tier 4 equipment instead of Tier 3) is not required, since the analysis determined that use of Tier 3 equipment is sufficient for reducing construction effects to a less than significant level. The significant and unavoidable impacts that are mentioned in this comment are attributable to operational impacts only, which would not be reduced through use of more efficient pieces of construction equipment. As such, construction emissions have been adequately addressed and mitigated in the Draft EIR; this comment does not identify any

significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-13 The commenter states that the City of Moreno Valley requested an urban decay analysis in their NOP comment letter and that they also requested the impact determination for land use/planning to be changed to "significant" due to urban decay possibilities and other impacts from land use changes that could affect existing and surrounding uses.

In response to the City of Moreno Valley's NOP comment letter, an urban decay analysis was prepared and included as Appendix G to the Draft EIR. As stated in Response H-2 above, the analysis concluded that the Project would not lead to urban decay. Regarding the issue of land use and planning, this category was addressed as a stand-alone section in the Draft EIR (Section 4.8), and impacts were determined to be potentially significant. However, with the implementation of mitigation measures identified in the Draft EIR, potential impacts relative to land use and planning would be reduced below a level of significance. As such, the City of Moreno Valley's request for an urban decay analysis and for an assessment of land use and planning were incorporated. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-14 The commenter states that the urban decay analysis included in the Draft EIR did not provide a fair and thorough assessment of how the regional demand for hospital care, assisted living, medical office buildings, and hospital beds would be met with full consideration of all planned projects coming to fruition in Moreno Valley. The commenter lists the following as examples of planned projects: Riverside University Medical Center (RUMC), Kaiser Hospital, and March Life Care. The commenter states that this issue must be assessed prior to assuming a need for the proposed Riverside Healthcare Campus.

The urban decay analysis contained in Appendix G of the Draft EIR characterized and considered new and expanding hospital opportunities that are potentially available in the Project area. This analysis included the March LifeCare Campus, the Riverside University Health System Medical Center expansion, the Highland Fairview Wellness Campus, and the Riverside Community Hospital expansion (see Appendix G of the Draft EIR for details). A new Kaiser Permanente Hospital in Ontario was also taken into account in the urban decay analysis, as well as the existing Kaiser hospitals in Moreno Valley, Riverside, and Fontana. As such, planned healthcare projects in the City of Moreno Valley have been taken into account in the Draft EIR's analysis of regional demand for hospital care. The analysis in Appendix

G of the Draft EIR determined that even if all of the proposed hospitals and ancillary medical facilities were developed, they would not adequately meet the current demand for hospital beds in Riverside County. This conclusion has been supported by substantial evidence and expert opinion in Appendix G of the Draft EIR. As such, the Project would not lead to urban decay effects. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-15 The commenter states that the land use and planning section of the Draft EIR does not include mitigation measures to minimize impacts on nearby sensitive receptors, particularly the residential units adjacent to the southern boundary of the Project site. The commenter further states that the Draft EIR describes an 8-foot-tall wall and trees that would be located along the southern boundary of Site C. The commenter states that the Draft EIR should have addressed the impact as "significant with mitigation imposed" and included additional mitigation measures to further minimize light, glare, and noise. The commenter also states that Driveway #14 presents concerns for noise and that security and crime prevention must also be considered in this area.

Contrary to the statements made in this comment, the land use and planning section of the Draft EIR (Section 4.8) refers to numerous mitigation measures. Impacts were determined to be below a level of significance upon implementation of these measures. One of these mitigation measures (MM-NOI-1) would reduce noise effects at the nearby residences. Regarding light and glare effects, the analysis in the Draft EIR determined that impacts in the category of light and glare would be less than significant. As such, no mitigation measures are necessary under CEQA for addressing light and glare.

As discussed in Response H-9 above, Driveway #14 is for emergency access only. As such, daily trips and regular vehicular traffic is not expected to occur from this driveway. Furthermore, upon implementation of MM-NOI-1, impacts in the category of noise were determined to be less than significant.

Security and crime are not impacts to the environment that are evaluated under CEQA. However, the Specific Plan addresses security and crime prevention, and it sets forth several design standards that would help support security and crime prevention at the Project site. For example, the use of security cameras and security cameras integrated with lighting is encouraged (see page 8-8 of the Specific Plan). The Specific Plan also sets forth policies to provide 24-hour security patrol throughout the Project site, to incorporate alarm systems in buildings so that the Police Department is notified in the event the alarm is triggered by an intruder, and to

incorporate sufficient lighting and encourage the placement of buildings in such a way as to reduce dark spaces and hiding places (see page 3-4 of the Specific Plan). Additionally, there are numerous design standards for the parking structures that would minimize security concerns within and near the proposed parking structures, including interior lighting requirements and provisions for adequate visibility. As such, design practices to support security and crime prevention would be dictated through the Specific Plan.

While crime and security are not impacts to the environment that are evaluated under CEQA, environmental analyses under CEQA must evaluate whether a project would place increased demand on police protection services such that new or physically altered police facilities are required, the construction of which could cause environmental impacts. The Project's potential effects on police protection services are addressed in Section 4.2.14(b) of the Initial Study. The analysis determined that the Project site can be adequately served by existing police services in the City, and that impacts would be less than significant. As such, this comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-16 The commenter describes a development proposal for a property within the City of Moreno Valley that is located near the Project site. The commenter states that this development must be included in the cumulative projects list that is analyzed in the Draft EIR's traffic impact analysis. (This analysis is contained in Appendix L of the Draft EIR and is summarized in Section 4.11 of the Draft EIR.)

The list of cumulative projects that is included in the traffic impact analysis was developed by Urban Crossroads, the author of the traffic impact analysis report, in coordination with the City of Riverside and the City of Moreno Valley. The City of Moreno Valley approved the scope of work for the traffic impact analysis, which included the list of cumulative projects. As such, the City of Moreno Valley has agreed to the list of reasonably foreseeable development projects located in the study area that are analyzed in the cumulative conditions section of traffic analysis. In preparing the cumulative analyses, CEQA requires the consideration of all known probable related projects at the time the Notice of Preparation (NOP) of an EIR is issued. However, the development proposal that is specifically described in Comment H-16 was not yet known when the NOP for this Project was issued. The date at which the NOP is issued serves as the environmental baseline for the analysis in the EIR. As such, analysis of the development proposal that is described in this comment does not need to be added to the traffic impact analysis.

H-17 The commenter states that proposed mitigation measures involving lane additions and/or street widening must be re-evaluated. The commenter specifically lists the mitigation measures that apply to the intersections of Day Street and Cottonwood Avenue, Day Street and Bay Avenue, Day Street and Alessandro Boulevard, and Memorial Way and Towngate Boulevard (namely, MM-TRAF-4, MM-TRAF-5, MM-TRAF-6, MM-TRAF-7, MM-TRAF-9, and MM-TRAF-10). The commenter further states that the improvements on Day Street that are set forth in the proposed mitigation measures cannot be achieved by the Project's opening year without right-of-way acquisitions that may be challenging. The commenter states that detailed preliminary cost estimates, including consideration of right-of-way acquisitions, are needed to ensure that the full potential costs of the improvements are understood. The commenter also states that the potential additional environmental impacts of the improvements that are set forth in these mitigation measures must be evaluated.

The mitigation measures that are discussed in this comment (MM-TRAF-4, MM-TRAF-5, MM-TRAF-6, MM-TRAF-7, MM-TRAF-9, and MM-TRAF-10) have been set forth in the Draft EIR to address cumulative impacts and impacts under General Plan Buildout conditions. Significant impacts would occur at the intersections listed in this comment with or without the Project, as shown in Table 4.11-23 and Table 4.11-27 of the Draft EIR. Mitigation measures MM-TRAF-4, MM-TRAF-5, MM-TRAF-6, MM-TRAF-7, MM-TRAF-9, and MM-TRAF-10 have been set forth to address the Project's contribution to cumulative traffic impacts. As such, these mitigation measures do not require the specified improvements to be implemented by the Project's opening year. Rather, they require the Project developer to pay the Project's fair share cost of the improvement prior to opening the Project. As such, the mitigation measures set forth in the Draft EIR do not require the improvements to be implemented by the Project's opening year, nor do the mitigation measures require the improvements to be fully funded and/or implemented by the Project developer. Rather, implementation of these mitigation measures would require paying a portion of the cost of the improvement.

As stated in CEQA Guidelines Section 15130(a)(3), a project's contribution to a significant cumulative impact is less than cumulatively considerable "if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact." As such, mitigation measures MM-TRAF-4, MM-TRAF-5, MM-TRAF-6, MM-TRAF-7, MM-TRAF-9, and MM-TRAF-10 are allowable and effective means of reducing the Project's contribution to significant cumulative traffic impacts to a level that is below cumulatively considerable. See Table 4.11-23 and Table 4.11-27 in the Draft EIR, which show impacts after mitigation.

As stated in MM-TRAF-4, MM-TRAF-5, MM-TRAF-6, MM-TRAF-7, MM-TRAF-9, and MM-TRAF-10, the Project applicant will enter into an agreement with the City of Moreno Valley, if required by the City. During this process, more detailed cost estimates and associated fair share contributions can be determined by the applicant and the City of Moreno Valley.

The commenter also states that the striping recommendation for the intersection of Memorial Way and Towngate Boulevard that is provided in MM-TRAF-7 is not practical because removing a through lane at this intersection would significantly affect southbound traffic operations on Memorial Way and would also require modification to the existing lane striping of the entire segment of Memorial Way, north of Towngate Boulevard. However, as determined in the traffic impact analysis, the modifications set forth in MM-TRAF-7 would provide adequate capacity at the intersection of Memorial Way and Towngate Boulevard, resulting in an anticipated level of service at this intersection that meets the thresholds for intersection operations under both City of Riverside and City of Moreno Valley criteria. As such, the improvements specified in MM-TRAF-7 are sufficient under CEQA; changes to the existing lane striping of the entire segment of Memorial Way are not required to accomplish these improvements and the resulting level of service.

The commenter further requests a list of sources for the estimated costs of the recommended improvements that are listed in Table 9-4 and Table 9-5 of Appendix L in the Draft EIR. The commenter asks whether the cost estimates are based on a recent Transportation Uniform Mitigation Fee (TUMF) nexus study or a study of program costs for capital improvements in Riverside County.

During preparation of the traffic impact analysis, Urban Crossroads discussed rough order of magnitude unit costs with City staff. The estimates shown in Appendix L of the Draft EIR are not intended to be engineering calculated estimates, which would be prepared during the design phases for these improvements. Additionally, the traffic mitigation measures set forth in the Draft EIR that specify improvements within the City of Moreno Valley require coordination between the Project applicant and the City of Moreno Valley, if required by the City. As such, specific cost estimates and fair share calculations will be refined in the future, to accurately account for market conditions at the time the improvements are planned to occur, as well as the design of the improvements.

In summary, MM-TRAF-4, MM-TRAF-5, MM-TRAF-6, MM-TRAF-7, MM-TRAF-9, and MM-TRAF-10 are appropriate and sufficient mitigation measures under

CEQA. As such, this comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-18 This comment states that Driveway #1 is not a full access driveway and that traffic movements at the Driveway #1/Day Street would be restricted to right-in/right-out/left-in only by a raised concrete median that is currently under construction on Day Street. The commenter requests that the traffic analysis be revised to exclude the movement of full left turns out of Driveway #1.

In response to this comment, Urban Crossroads conducted an analysis that reconfigured Driveway #1 to eliminate left-out activity (see Attachment B). (This change in Project access involved re-routing the eastbound left-out traffic volumes from Driveway #1 to the northbound lane of Day Street, which now travels south to the intersection of Day Street at Eucalyptus Avenue to make a U-turn before heading north.) No new impacts or mitigation measures were identified as a result of these adjustments. As such, this comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR. The only change would be the design of the driveway, which is described in Section 5.9 of Appendix L in the Draft EIR. This section identifies that the eastbound approach of this driveway would have a shared left/right turn lane. In response to Comment H-18, the eastbound approach of this driveway will have a right turn lane only.

H-19 The commenter states that Driveway #14 needs to be relocated to the north or eliminated, as it presents a potential unsafe traffic operational condition due to the short distance from the driveway to Eucalyptus Avenue. The commenter also states that the proximity of this proposed driveway to adjacent residences is not acceptable due to the adverse impacts that the driveway will have on the homes. The commenter also states that "it is unclear why the driveway may only be designed for right-out movements."

As described in Response H-9 above, Driveway #14 is for emergency access only. As such, daily trips and regular vehicular traffic is not expected to occur from this driveway. The commenter does not describe any specific, adverse impacts that would be caused by this proposed emergency access, nor does the commenter provide substantial evidence that an adverse impact would occur on the environment as a result of this emergency access. This proposed driveway would be constructed pursuant to all applicable design requirements of the City, which would address potential safety concerns. Additionally, implementation of MM-NOI-1 would ensure that a wall is installed between the driveway and the adjacent residences, thereby reducing noise effects associated with the Project. Designing the driveway for right-

out movements only would further minimize safety concerns. As correctly described in this comment, Driveway #14 is located near the intersection of Eucalyptus Avenue and Valley Springs Parkway. Allowing for right-out movements only would minimize potential conflicts between emergency vehicles exiting this driveway and the operations of the nearby intersection. Furthermore, because this driveway would be for emergency vehicle access only, it would be used only in the event of an emergency at Site C. Therefore, this driveway would be used very sporadically, if at all. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-20 The commenter states that an explanation is required regarding why impacts at the intersection of Bay Avenue and Day Street are identified as "not a significant impact."

Contrary to this comment, the Draft EIR identifies a significant impact at the Day Street/Bay Avenue intersection under Cumulative With Project conditions and General Plan Buildout With Project Conditions. However, the Draft EIR identifies mitigation measures that were determined to reduce impacts at this intersection to a level below significance (see page 4.11-85 of the Draft EIR). As such, significant impacts have been identified at this intersection, but they would be addressed through the implementation of the proposed mitigation measures. Therefore, this comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-21 The commenter states that the cost estimates for the improvements at the intersections of Day Street and Cottonwood Avenue, Day Street and Bay Avenue, and Day Street and Alessandro Boulevard must be revised to include the cost of right-of-way acquisition at current market value. Additionally, the commenter states that the cost estimate for the improvements at the intersection of Memorial Way and Towngate Boulevard must be revised to include the cost of the modification to the existing lane striping of the entire segment of Memorial Way, north of Towngate Boulevard. The commenter also states that the fair share costs for these improvements must be updated based on the updated cost estimates.

See Response to Comment H-17. During preparation of the traffic impact analysis, Urban Crossroads discussed rough order of magnitude unit costs with City staff. The estimates shown in Appendix L of the Draft EIR are not intended to be engineering calculated estimates, which would be prepared during the design phases for these improvements. Additionally, the traffic mitigation measures set forth in the Draft EIR that specify improvements within the City of Moreno Valley require coordination between the Project applicant and the City of Moreno Valley, if required by the City.

As such, specific cost estimates and fair share calculations will be refined in the future, to account for market conditions at the time the improvements are planned to occur, as well as the design of the improvements. Regarding the lane striping of the entire segment of Memorial Way, the modification at the intersection of Memorial Way and Towngate Boulevard does not require changes to the existing lane striping of an entire segment of Memorial Way (see Response to Comment H-17). As explained in Response to Comment H-17, the modifications at this intersection would provide adequate capacity, resulting in an anticipated level of service at this intersection that would meet thresholds for intersection operations under both City of Riverside and City of Moreno Valley criteria. Changes to the existing lane striping of the entire segment of Memorial Way are not required to accomplish these improvements and the resulting level of service. As described in this response and in Response to Comment H-17, the improvements set forth in mitigation measures identified for the intersections of Day Street and Cottonwood Avenue, Day Street and Bay Avenue, Day Street and Alessandro Boulevard, and Memorial Way and Towngate Boulevard are appropriate and sufficient under CEQA. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-22 The commenter states that the traffic impact analysis must include queuing analysis for eastbound and westbound left-turn lanes at all impacted intersections along Day Street.

The scope of work for preparation of a traffic impact analysis for the Project was reviewed and approved by the City of Moreno Valley. Per the approved scope of work, the Draft EIR included a progression analysis along Day Street between the State Route 60 Westbound Ramps and Cottonwood Avenue. The approved scope of work for the traffic impact analysis did not include a queuing analysis for eastbound and westbound left-turn lanes along Day Street. As such, the City of Moreno Valley previously indicated that a queuing analysis for eastbound and westbound left-turn lanes along Day Street was not necessary for the purposes of the Draft EIR's traffic impact analyses. Furthermore, any current impacts at these intersections are related to existing conditions, and the scope of work was developed to analyze the potential impacts of developing the Project. It would not be the responsibility of the Project to mitigate existing impacts at these intersections. As such, this comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-23 The commenter states that the traffic impact analysis must evaluate pedestrian and bicyclist connectivity from the Project buildings to the adjacent streets and transit service routes within the study area.

The traffic impact analysis in the Draft EIR shows the on-street bike routes, pedestrian paths, and existing/new Riverside Transit Authority bus stops recommended for the Project (see Exhibit 1-2 in Appendix L of the Draft EIR). As such, this topic is covered in the traffic impact analysis for this Project. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-24 The commenter states that the traffic impact analysis for the Project must be revised based on the concerns expressed by the City of Moreno Valley in Comment Letter H. The commenter further requests that a revised traffic impact analysis be resubmitted to the City of Moreno Valley's Transportation Engineering Division for further review.

Urban Crossroads conducted analysis to incorporate the City of Moreno Valley's comments and corrections regarding the operation of proposed Driveway #1 (see Attachment B). These revisions have not changed the impact determinations or mitigation measures in the Draft EIR. And, as demonstrated in Response to Comments H-16, H-17, and H-19 through H-23 above, the City of Moreno Valley has not expressed any other concerns that warrant revisions to the traffic impact analysis or to the traffic and transportation impact determinations and mitigation measures in the Draft EIR. The traffic impact analysis for the Project is sufficient for evaluating the Project under the required CEQA thresholds. As such, the traffic impact analysis does not need to be revised and resubmitted, and this comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-25 The commenter states that the Initial Study does not address the land uses contemplated for "Planning Area 6," which is located on the west side of Valley Springs Road, west of the Project site. The commenter further states that all known or reasonably known future development of this area must be included and evaluated in the cumulative impacts analysis of the Draft EIR. The commenter states that "potential segmentation of the project is a concern as it does not allow for full consideration of the potential and probable impacts."

The areas to the west of Valley Springs are outside of the Project site (see Figure 2-4). As such, analysis of this area is not included as part of the Initial Study or the

Draft EIR, since it is not part of the Project. Planning Area 6 has been designated for Commercial Retail development in the Canyon Springs Business Park Specific Plan. However, at the time of this writing, there are no specific proposed, planned, or reasonably foreseeable development projects within Planning Area 6. As such, the cumulative projects list contained in Section 5.2 of the Draft EIR does not show any proposed, planned, or reasonably foreseeable projects within Planning Area 6, since none exist at this time. Therefore, the cumulative impacts analysis does not include any current or future development at Planning Area 6.

The City's Final Program EIR for the General Plan analyzes buildout of the City (including Planning Area 6 of the Canyon Springs Business Park Specific Plan area) pursuant to the current land use and zoning designations through the General Plan buildout out year, which is 2025. As such, the potential for development to occur within Planning Area 6 pursuant to the land use and zoning designations that are currently in place has been analyzed programmatically pursuant to CEQA in the General Plan Final Program EIR. The Project would not increase the development potential within Planning Area 6. In the event that a development proposal were processed for this area, the project would be subject to the Canyon Springs Business Park Specific Plan and would also be subject to CEQA. And, in the event that development of a project at Planning Area 6 were to occur concurrently with development at the Canyon Springs Healthcare Campus Specific Plan area, the Canyon Springs Healthcare Campus Specific Plan would be included in the cumulative impact analysis for the development proposed within Planning Area 6. However, as described above, there are currently no proposed, planned, or reasonably foreseeable development projects within Planning Area 6. As such, this comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-26 The commenter states that the City of Moreno Valley requested in an NOP comment letter that the Draft EIR include an evaluation of alternative sites for the Project. The City of Moreno Valley's NOP comment letter also stated that the alternative sites analysis could include properties within the City of Moreno Valley. The City of Moreno Valley also requested to be consulted early in the alternative sites selection process. The commenter acknowledges that the Draft EIR included an alternative sites analysis. However, the commenter states that the City of Moreno Valley was not consulted regarding the properties within the City of Moreno Valley that were selected for analysis.

The alternatives analysis presented in the Draft EIR was prepared in accordance with the CEQA Guidelines for alternatives analysis, which are set forth in CEQA

Guidelines Section 15126.6. The CEQA Guidelines requires that an EIR "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." The CEQA Guidelines further state that "an EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation… The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason" (CEQA Guidelines Section 15126.6(a)). While other agencies (such as the City of Moreno Valley) can comment on the scope, content, and analysis of the EIR (including the alternatives analysis), the City of Riverside as lead agency is ultimately responsible for selecting the alternatives, including the alternative locations. As such, the City selected and evaluated alternatives to the project in accordance with the requirements of CEQA Guidelines Section 15126.6 and has described and analyzed these alternatives in Chapter 6 of the Draft EIR.

The commenter further states that the City's determinations to eliminate alternative sites 15, 16, 17, and 18 warrant further discussion in the EIR. CEQA Guidelines Section 15126.6(c) states that an EIR should "identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Additional information explaining the choice of alternatives may be included in the administrative record." Section 6.5 of the Draft EIR identifies 20 alternative locations to the Project site that were assessed by the City as potential alternate locations. Of the sites that were assessed, the City eliminated 18 from further discussion and selected 2 sites for further, more detailed, evaluation in the EIR. As recommended in CEQA Guidelines Section 15126.6(c), the City briefly identified the reason underlying the rejection of the 18 sites that were eliminated from detailed analysis in the EIR. As such, the City has discussed its reasoning for eliminating sites from further analysis, including sites 15, 16, 17, and 18. As shown in the excerpt from CEQA Guidelines Section 15126.6(c) above, CEQA does not require a robust discussion or analysis of a lead agency's reasons for eliminating alternatives from detailed analysis. Nevertheless, CEQA Guidelines Section 15126.6(c) also allows for additional information explaining the choice of alternatives to be included in the administrative record. In response to this comment, the City has included information below explaining its rejection of sites 15, 16, 17, and 18 in greater detail.

Site 15. This site does not provide services to the same area as the Project. Additionally, the site is crossed by several drainage features, which have the potential to support riparian and riverine habitat. As such, development of the Project on this site would have the potential to increase effects to biological resources. Further, this site is smaller than the Project site, which would reduce the size and scope of the facilities and services provided by the Project, thereby decreasing the extent to which the Project would meet the objective of addressing the existing shortage of healthcare services in the area.

Site 16. This site does not provide services to the same area as the Project. Further, the areas near this site are already served by the Riverside County Regional Medical Center and Kaiser Permanente Moreno Valley. As such, developing the Project at this site would decrease the extent to which the Project would meet the objective of providing healthcare services to an area that currently has a shortage of such services. Additionally, the site has limited freeway access, which would decrease the Project's ability to meet the objectives of assisting in a disaster situation and of improving access to healthcare.

Site 17. This site does not provide services to the same area as the Project. Further, the areas near this site are already served by the Riverside County Regional Medical Center and Kaiser Permanente Moreno Valley. As such, developing the Project at this site would decrease the extent to which the Project would meet the objective of providing healthcare services to an area that currently has a shortage of such services. Additionally, the site has limited freeway access, which would decrease the Project's ability to meet the objectives of assisting in a disaster situation and of improving access to healthcare.

Site 18. Another hospital development is currently proposed for this site. Developing the Project on this site would preclude this proposed hospital from being built, thereby decreasing the total number of hospitals in the area (i.e., development of the Project at the Project site and development of another hospital at Site 18 would maximize the amount of additional healthcare services that are being added to the region).

For the reasons described in the Draft EIR and for the additional reasons described above, alternative sites 15, 16, 17, and 18 were rejected from further analysis. In accordance with CEQA Guidelines Section 15126.6, the Draft EIR identified and evaluated a range of reasonable alternatives to the project. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

H-27 The commenter requests that the City of Moreno Valley receive copies of the Final EIR and associated responses to comments when available, that the City of Moreno Valley be placed on any Final EIR mailing lists, and that the City of Moreno Valley be provided notification of meetings/public hearings associated with the Project. The commenter then provides contact information for the City of Moreno Valley. The City appreciates Moreno Valley's comments and will use the contact information provided, as needed. The City will also provide the City of Moreno Valley with a copy of the Final EIR including responses to comments, will retain the City of Moreno Valley on the mailing list for the Project, and will notify the City of Moreno Valley of any public meetings/hearings for the Project. This comment does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

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Comment Letter I

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

Edmund G. Brown Jr.
Governor

Ken Alex
Director

August 22, 2017

RECEIVED
AUG 24 2017
Community & Economic Development Department

Sean P. Kelleher
City of Riverside
3900 Main Street, 3rd Floor
Riverside, CA 92522

Subject: Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park SP
SCH#: 2016031001

Dear Sean P. Kelleher:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on August 21, 2017, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

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

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

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly. I-1

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

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH#	**2016031001**
Project Title	Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park SP
Lead Agency	Riverside, City of
Type	**EIR** Draft EIR
Description	The proposed project is for the development of a new Healthcare Campus on a 50.85 acre project site general located at Valley Springs Parkway and Gateway Drive. The project area is comprised of three sites (sites A, B, and C).

Lead Agency Contact

Name	Sean P. Kelleher		
Agency	City of Riverside		
Phone	(951) 826-5712	***Fax***	
email			
Address	3900 Main Street, 3rd Floor		
City	Riverside	***State*** CA	***Zip*** 92522

Project Location

County	Riverside			
City				
Region				
Lat / Long	33° 55' 6" N / 117° 16' 57" W			
Cross Streets	Gateway Drive and Valley Springs Parkway			
Parcel No.	various			
Township	3S	***Range*** 4W	***Section*** 03	***Base*** Riv East

Proximity to:

Highways	I-215, SR-60
Airports	March Air Reserve Base
Railways	BNSF
Waterways	
Schools	Edgemont ES
Land Use	Z: CR SP -Commercial Retail, CSBPSP; O SP - Office, CSBPSP; GPD: C - Commercial
Project Issues	Biological Resources; Drainage/Absorption; Economics/Jobs; Flood Plain/Flooding; Geologic/Seismic; Noise; Public Services; Sewer Capacity; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Water Quality; Water Supply; Wetland/Riparian; Growth Inducing; Landuse; Cumulative Effects; Aesthetic/Visual; Air Quality; Archaeologic-Historic; Other Issues
Reviewing Agencies	Resources Agency; Department of Conservation; Department of Fish and Wildlife, Region 6; Cal Fire; Department of Parks and Recreation; Department of Water Resources; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 8; Office of Emergency Services, California; Department of Housing and Community Development; Regional Water Quality Control Board, Region 8; Native American Heritage Commission; Public Utilities Commission

Date Received 07/07/2017 ***Start of Review*** 07/07/2017 ***End of Review*** 08/21/2017

I-1 Cont.

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN JR., Governor

DEPARTMENT OF TRANSPORTATION
DIVISION OF AERONAUTICS – M.S. #40
1120 N STREET
P. O. BOX 942874
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PHONE (916) 654-4959
FAX (916) 653-9531
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

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Governor's Office of Planning & Research
AUG 14 2017
STATE CLEARINGHOUSE

August 7, 2017

Mr. Sean Kelleher
City of Riverside
Community Development Department
3900 Main Street, 3rd Floor
Riverside, CA 92522

Dear Mr. Kelleher:

Re: Draft Environmental Impact Report for the Canyon Springs Healthcare Campus; SCH# 2016031001

The California Department of Transportation, Division of Aeronautics (Division), reviewed the above-referenced document with respect to airport-related noise and safety impacts and regional aviation land use planning issues pursuant to the California Environmental Quality Act (CEQA). The Division has technical expertise in the areas of airport operations safety and airport land use compatibility. We are a funding agency for airport projects and we have permit authority for public-use and special-use airports and heliports.

We offer the following comments after reviewing the project in our role as a state heliport permitting authority which designates the Division a responsible agency under CEQA, and as a state reviewing agency with technical expertise in aircraft noise and safety issues for projects near airports. The project site is in the airport influence area of the March Air Reserve Base (MRB).

The proposed project is a new healthcare campus development that will include new buildings for senior housing, assisted living/skilled nursing, medical treatment and administration, and multi-level vehicle parking. The campus will be spread out over three separate areas within the 50.85 acre project site in the City of Riverside. The project will require an amended specific plan, a new specific plan and amend the city's general plan. A heliport will be built on top of the new hospital building during the final phase of the campus development. The healthcare campus is approximately 2.60 miles northwest from the end of Runway 14/32 at MRB.

The new hospital heliport will require the issuance of a State heliport permit by the Division. One of the required permit checklist items is approval of the heliport plan of construction by the City of Riverside as appropriate, in accordance with California Public Utilities Code (PUC) section 21661.5. The applicant should also be advised to contact the Division's Aviation Safety Officer for Riverside County, Mike Smith, at (916) 654-4380, for assistance with the State permit requirements. Information regarding the State heliport permit process is available on-line at http://www.dot.ca.gov/hq/planning/aeronaut/heliportpermit.html.

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Mr. Sean Kelleher
August 7, 2017
Page 2

Prior to issuing a State heliport permit, the Division, as a responsible agency, must be assured that the proposal is in full compliance with CEQA. The issues of primary concern to us include heliport-related noise and safety impacts on the surrounding community. To ensure that the community will not be adversely impacted by helicopter operations, flight paths should avoid noise-sensitive and people intensive uses. Environmental documentation should include the anticipated number of operations, daytime and/or nighttime use, a noise study with heliport Community Noise Equivalent Level (CNEL) noise contours, diagrams showing the proposed landing site and the approach/departure flight paths. The helicopter noise contours should at least show 60 dB, and 65 dB CNEL. The diagrams should also depict the proximity of the proposed flight paths to any existing or proposed noise sensitive or people intensive land uses. The notice of determination must also be filed with the Office of Planning and Research. Consideration given to the issue of compatible land uses in the vicinity of a heliport should help to relieve future conflicts between the heliport and the surrounding neighborhood.

It is also necessary to consider the whole project in regard to its proximity to MRB. In accordance with CEQA, Public Resources Code Section 21096, the California Airport Land Use Planning Handbook (Handbook) must be utilized as a resource in the preparation of environmental documents for projects within airport land use compatibility plan boundaries or if such a plan has not been adopted, within two miles of an airport. The project site appears to be in Safety Zone D of the MRB airport land use compatibility plan. The Handbook is available on-line at:
http://dot.ca.gov/hq/planning/aeronaut/documents/alucp/AirportLandUsePlanningHandbook.pdf

Although the project site appears to be located outside the 60 dB CNEL contour for MRB (as shown in the land use compatibility plan), this does not take into account cumulative noise impacts associated with the site's proximity to the airport along with roadways and railway lines or the "single-event" impacts associated with individual aircraft overflights. It is likely that some future residents will be annoyed by aircraft noise in this area. We advise requiring an avigation easement as shown in Appendix H of the Handbook.

In accordance with PUC section 21676 *et seq.*, prior to the amendment of a general plan or specific plan, or the adoption or approval of a zoning ordinance or building regulation within the planning boundary established by an Airport Land Use Commission (ALUC), the local agency shall first refer the proposed action to the ALUC.

If the ALUC determines that the proposed action is inconsistent with the airport land use compatibility plan, the referring agency shall be notified. The local agency may, after a public hearing, propose to overrule the ALUC by a two-thirds vote of its governing body after it makes specific findings. At least 45 days prior to the decision to overrule the ALUC, the local agency's governing body shall provide to the ALUC and the Division a copy of the proposed decision and findings. The Division reviews and comments on the specific findings a local government intends to use when proposing to overrule an ALUC. The Division specifically looks at the proposed findings to gauge their relationship to the overrule. Also, pursuant to the PUC 21670 *et seq.*, findings should show evidence that the local agency is minimizing "…the public's exposure to excessive noise and safety hazards within areas around public airports to

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Mr. Sean Kelleher
August 7, 2017
Page 2

the extent that these areas are not already devoted to incompatible uses."

In addition to submitting the proposal to the ALUC, it should also be coordinated with MRB staff to ensure that the proposal will be compatible with future as well as existing airport operations.

Section 21659 of the PUC prohibits structural hazards near airports and heliports. Structures should not be at a height that will result in penetration of the approach imaginary surfaces. If the heliport is planned for operation prior to completion of the later phases of construction activities, impacts to the heliport imaginary surfaces from temporary construction-related impacts (e.g. construction cranes, etc.) should be identified. Federal Aviation Administration (FAA) Advisory Circular 150/5370-2E "Operational Safety on Airports During Construction," available at http://faa.gov, can be incorporated into the project design in order to identify any permanent or temporary construction-related impacts to the heliport imaginary surfaces. The FAA may also require the filing of a Notice of Proposed Construction or Alteration (Form 7460-1) for certain project-specific activities in accordance with Federal Aviation Regulations Part 77 "Objects Affecting Navigable Airspace." Form 7460-1 is available at https://oeaaa.faa.gov/oeaaa/external/portal.jsp and should be submitted electronically.

The FAA will require the filing of a Notice of Landing Area Proposal (Form 7480-1). A copy of the form is available on the FAA website at:
http://www.faa.gov/forms/index.cfm/go/document.information/documentID/185334

Thank you for the opportunity to review and comment on this proposal. If you have any questions, please contact me at (916) 654-6223, or by email at philip.crimmins@dot.ca.gov.

Sincerely,

Original Signed by

PHILIP CRIMMINS
Aviation Environmental Specialist

c: State Clearinghouse, Riverside County ALUC, March Air Reserve Base

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

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY

EDMUND G. BROWN JR., *Governor*

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

CC EOR
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August 16, 2017

Governor's Office of Planning & Research
AUG 21 2017
STATE CLEARINGHOUSE

Mr. Sean Kelleher
City of Riverside
Community Development Department
Planning Division
3900 Main Street, 3rd Floor
Riverside, CA 92522

Draft Environmental Impact Report (DEIR), Canyon Springs Healthcare Campus Specific Plan in Riverside County, Approximate Milepost 433.59, Santa Ana Pipeline (SAPL), Southern Field Division, SCH2016031001

Dear Mr. Kelleher:

Thank you for the opportunity to review and comment on the DEIR for the Canyon Springs Healthcare Campus Specific Plan and Amendment (SPA), to replace Canyon Springs Business Park Specific Plan (SP). The notice describes a site masterplan to be developed which includes both short-term and long-range planning goals that cover an anticipated construction period of approximately 10 years. The SPA would include future development over five phases. The approximately 50.85-acre project site consists of three separate, non-contiguous, previously graded areas located within the SP area in Riverside, California. Future Project phasing could overlap, be out of sequence, or be concurrent, depending on market conditions.

The Department of Water Resources (DWR) has reviewed the submitted materials, and has the following comments:

1. It is anticipated there will be impact for DWR access to the SAPL and related appurtenances, which are part of the State Water Project (SWP). It is our objective to maintain a clear and accessible right-of-way when approving new encroachments, i.e. parking lots, fences, etc. within DWR right-of-way.

2. This development will require an encroachment permit, or agreement from DWR. All encroachment elements of the project must conform to specifications as outlined in California Code of Regulations, Title 23, Sections 600 to 635. More information about encroachments within DWR right-of-way can be found at: http://www.water.ca.gov/engineering/Services/Real_Estate/Encroach_Rel/

3. Please provide DWR with a copy of any subsequent documentation when it becomes available for review. Any future correspondence relating to this project should be sent to:

Department of Water Resources

Mr. Sean Kelleher
August 16, 2017
Page 2

Department of Water Resources
Division of Operations and Maintenance
Attn: Leroy Ellinghouse, Chief,
SWP Right-Of-Way Management Section
1416 9th Street, Room 641-1
Sacramento, California 95814

If you have any questions, please contact Leroy Ellinghouse, Chief of the SWP Right of Way Management Section, at (916) 659-7168 or Robert Martinez at (916) 654-8982.

Sincerely,

David M. Samson

David M. Samson, Chief
State Water Project Operations Support Office
Division of Operations and Maintenance

cc: State Clearinghouse
Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, California 95814

TDA Investment Group
2025 Pioneer Court
San Mateo, CA 94403
Attn: Paula Purcell

STATE OF CALIFORNIA
NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710

Edmund G. Brown Jr., Governor

8-21-17
E

July 17, 2017

AUG 01 2017
STATE CLEARINGHOUSE

Sean P. Kelleher
City of Riverside
3900 Main Street, Third Floor
Riverside, CA 92522

sent via e-mail: skelleher@riversideca.gov

Re: SCH# 2016031001, Canyon Springs Healthcare Campus Specific Plan and Amendment to the Canyon Springs Business Park SP Project, City of Riverside and City of Moreno Valley; Riverside County, California

Dear Mr. Kelleher:

The Native American Heritage Commission (NAHC) has reviewed the Draft Environmental Impact Report prepared for the project referenced above. The review included the Summary and Project Description, the Summary of Environmental Impacts and Mitigation Measures, the Environmental Impact Analysis section 4.4 Cultural Resources and Appendix I, Cultural Resources Report prepared by Dudek for the City of Riverside. We have the following concerns:

1. There is no Tribal Cultural Resources section or subsection in the Executive Summary or Environmental Checklist as per California Natural Resources Agency (2016) "Final Text for tribal cultural resources update to Appendix G: Environmental Checklist Form," http://resources.ca.gov/ceqa/docs/ab52/Clean-final-AB-52-App-G-text-Submitted.pdf

2. Although there is discussion of consultation and input from tribes under Archaeological Resources, there are no mitigation measures specifically addressing impacts to Tribal Cultural Resources separately from Archaeology. Mitigation language for archaeological resources is not always appropriate for or similar to measures specifically for handling Tribal Cultural Resources. For sample mitigation measures, please refer to the California Natural Resources Agency (2016) "Final Text for tribal cultural resources update to Appendix G: Environmental Checklist Form," http://resources.ca.gov/ceqa/docs/ab52/Clean-final-AB-52-App-G-text-Submitted.pdf

The California Environmental Quality Act (CEQA)[1], specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.[2] If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared.[3] In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended in 2014 by Assembly Bill 52. (AB 52).[4] **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** AB 52 created a separate category for "tribal cultural resources"[5], that now includes "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment.[6] Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.[7] Your project may also be subject to **Senate Bill 18 (SB 18)** (Burton, Chapter 905, Statutes of 2004), Government Code 65352.3, if it also involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space. **Both SB 18 and AB 52 have tribal consultation requirements**. Additionally, if your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966[8] may also apply.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

[1] Pub. Resources Code § 21000 et seq.
[2] Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b); CEQA Guidelines Section 15064.5 (b)
[3] Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd.(a)(1); CEQA Guidelines § 15064 (a)(1)
[4] Government Code 65352.3
[5] Pub. Resources Code § 21074
[6] Pub. Resources Code § 21084.2
[7] Pub. Resources Code § 21084.3 (a)
[8] 154 U.S.C. 300101, 36 C.F.R. § 800 et seq.

Agencies should be aware that AB 52 does not preclude agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52. For that reason, we urge you to continue to request Native American Tribal Consultation Lists and Sacred Lands File searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/. Additional information regarding AB 52 can be found online at http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf, entitled "Tribal Consultation Under AB 52: Requirements and Best Practices".

The NAHC recommends lead agencies consult with all California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources.

A brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments is also attached.

Please contact me at gayle.totton@nahc.ca.gov or call (916) 373-3710 if you have any questions.

Sincerely,

Gayle Totton, B.S., M.A., Ph.D
Associate Governmental Project Analyst

Attachment

cc: State Clearinghouse

2

Pertinent Statutory Information:

Under AB 52:
AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:
Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a **lead agency** shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice.
A **lead agency** shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project.[9] and **prior to the release of a negative declaration, mitigated negative declaration or environmental impact report**. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18).[10]
The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

a. Alternatives to the project.
b. Recommended mitigation measures.
c. Significant effects.[11]

1. The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.

If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. [12]
With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process **shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10.** Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.[13]
If a project may have a significant impact on a tribal cultural resource, **the lead agency's environmental document shall discuss** both of the following:

a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource.[14]

Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.[15]

Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 **shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program**, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable.[16]
If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, **the lead agency shall consider feasible mitigation** pursuant to Public Resources Code section 21084.3 (b).[17]
An environmental impact report **may not be certified**, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

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[9] Pub. Resources Code § 21080.3.1, subds. (d) and (e)
[10] Pub. Resources Code § 21080.3.1 (b)
[11] Pub. Resources Code § 21080.3.2 (a)
[12] Pub. Resources Code § 21080.3.2 (a)
[13] Pub. Resources Code § 21082.3 (c)(1)
[14] Pub. Resources Code § 21082.3 (b)
[15] Pub. Resources Code § 21080.3.2 (b)
[16] Pub. Resources Code § 21082.3 (a)
[17] Pub. Resources Code § 21082.3 (e)

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c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days.[18]

This process should be documented in the Tribal Cultural Resources section of your environmental document.

Under SB 18:

Government Code § 65352.3 (a) (1) requires consultation with Native Americans on general plan proposals for the purposes of "preserving or mitigating impacts to places, features, and objects described § 5097.9 and § 5091.993 of the Public Resources Code that are located within the city or county's jurisdiction. Government Code § 65560 (a), (b), and (c) provides for consultation with Native American tribes on the open-space element of a county or city general plan for the purposes of protecting places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code.

- SB 18 applies to **local governments** and requires them to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf
- Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.**[19]
- There is no Statutory Time Limit on Tribal Consultation under the law.
- Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research,[20] the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction.[21]
- Conclusion Tribal Consultation: Consultation should be concluded at the point in which:
  - The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
  - Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation.[22]

NAHC Recommendations for Cultural Resources Assessments:

- Contact the NAHC for:
  - A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
  - A Native American Tribal Contact List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.
    - The request form can be found at http://nahc.ca.gov/resources/forms/.
- Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
  - If part or the entire APE has been previously surveyed for cultural resources.
  - If any known cultural resources have been already been recorded on or adjacent to the APE.
  - If the probability is low, moderate, or high that cultural resources are located in the APE.
  - If a survey is required to determine whether previously unrecorded cultural resources are present.
- If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
  - The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

[18] Pub. Resources Code § 21082.3 (d)
[19] (Gov. Code § 65352.3 (a)(2)).
[20] pursuant to Gov. Code section 65040.2,
[21] (Gov. Code § 65352.3 (b)).
[22] (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

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Examples of Mitigation Measures That May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

- Avoidance and preservation of the resources in place, including, but not limited to:
  - Planning and construction to avoid the resources and protect the cultural and natural context.
  - Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
- Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
  - Protecting the cultural character and integrity of the resource.
  - Protecting the traditional use of the resource.
  - Protecting the confidentiality of the resource.
- Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed.[23]
- Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated.[24]

The lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

- Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources.[25] In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
- Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
- Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

[23] (Civ. Code § 815.3 (c)).
[24] (Pub. Resources Code § 5097.991).
[25] per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)).

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Response to Comment Letter I

Governor's Office of Planning and Research
State Clearing House and Planning Unit
August 24, 2017

This comment letter was received outside the comment period for the public review of the Draft Environmental Impact Report (DEIR). Section 15088(a) of the California Environmental Quality Act (CEQA) Guidelines states, "the lead agency shall respond to comments received during the noticed comment period and any extensions and may respond to late comments." The Comment period for the DEIR was from July 8, 2017, to August 22, 2017. Accordingly, nothing in CEQA "requires the lead agency to respond to comments not received within the comment periods" (Pub. Res. Code, § 21092.5(c); see also *Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1111). Comments received by the City outside the comment period have been included within this Final Environmental Impact Report (FEIR). Although not required by CEQA, the City has included this letter and reviewed the letter to verify that it does not raise new environmental issues related to the DEIR.

I-1 The State Clearinghouse confirms that the City has complied with the State Clearinghouse review requirements for Draft EIRs, pursuant to CEQA. The State Clearinghouse attaches comment letters received directly from State agencies, which consisted of letters from the California Department of Transportation (Caltrans) Division of Aeronautics, the State of California Department of Water Resources (DWR), and the Native American Heritage Commission (NAHC). These comment letters are also included in this chapter of the Final EIR as Letter A (NAHC), Letter C (Caltrans Division of Aeronautics), and Letter F (DWR), and the comments contained in these letters are addressed under "Response to Comment Letter A," "Response to Comment Letter C," and "Response to Comment Letter F," respectively. The State Clearinghouse provides contact information in the event there are questions regarding the environmental review process. The State Clearinghouse letter does not identify any significant new environmental issues or impacts that were not already addressed in the Draft EIR.

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CHAPTER 3
MITIGATION MONITORING AND REPORTING PROGRAM

CEQA requires the adoption of feasible mitigation measures to reduce the severity and magnitude of significant environmental impacts associated with project development. The Project's Draft Environmental Impact Report (Draft EIR) includes mitigation measures to reduce the potential environmental effects of the Project. CEQA also requires reporting on, and monitoring of, mitigation measures adopted as part of the environmental review process (Public Resources Code Section 21081.6). This mitigation monitoring and reporting program (MMRP), contained in Table 3-1 below, is designed to aid the City in its implementation and monitoring of measures adopted from the Project.

Pursuant to State *CEQA Guidelines* Section 15097, a written monitoring and reporting program has been compiled to verify implementation of adopted mitigation measures. "Monitoring" refers to the ongoing or periodic process of Project oversight provided by the "Responsible Party" listed in the following table. "Reporting" refers to written compliance review that will be presented to the decision-making body or authorized staff person identified in the table below. A report can be required at various stages throughout the Project implementation or upon completion of the mitigation measure. The following table provides the required information which includes identification of the potential impact, various mitigation measures, applicable implementation timing, agencies responsible for implementation, and the monitoring/reporting method for each mitigation measure identified.

The following list clarifies the meaning of each column in the following table:

- **Impact Category.** Identifies a potentially affected resource/environmental condition.
- **Mitigation Measure.** Those measures that will be implemented to minimize potential significant environmental impacts.
- **Monitoring Phase.** The phase of the Project during which the mitigation measure shall be implemented and monitored.
- **Implementation Timing.** The phase of the Project in which implementation and compliance will be monitored.
- **Responsible Party.** Identifies the entity responsible for monitoring implementation of the mitigation measure.
- **Method of Reporting/Monitoring.** Identifies mechanism by which implementation will be verified.

Throughout this chapter, references may be made to the “Project applicant,” “Project developer,” “Project developer/applicant,” “developer/applicant,” and “Project operator.” These all refer to the party that is responsible for the Project at the time the specific event or requisite activity is taking place.

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
Air Quality	**MM-AQ-1:** During construction activity, all construction equipment (≥ 150 horsepower) shall be California Air Resources Board (CARB) Tier 3 Certified or better. Additionally, during grading activity, total horsepower-hours per day for all equipment shall not exceed 24,608 horsepower-hours per day, and the maximum disturbance (actively graded) area shall not exceed 6 acres per day.	Project construction	Community & Economic Development Department, Building & Safety Division and Public Works Department, Land Development Division. Construction contractor	Prior to the issuance of a grading permit by the City, the Project applicant/developer or their construction contractor shall submit evidence to the City that all construction equipment (≥ 150 horsepower) is CARB Tier 3 Certified or better.
Air Quality	**MM-AQ-2:** Prior to the issuance of building permits, the Project developer/applicant shall submit energy usage calculations to the Planning Division showing that the Project is designed to achieve 5% efficiency beyond the 2016 California Building Code Title 24 requirements. Example of measures that reduce energy consumption include, but are not limited to, the following (it being understood that the items listed below are not all required and merely present examples; the list is not all-inclusive and other features that reduce energy consumption also are acceptable): • Increase in insulation such that heat transfer and thermal bridging is minimized; • Limit air leakage through the structure and/or within the heating and cooling distribution system; • Use of energy-efficient space heating and cooling equipment; • Installation of electrical hook-ups at loading dock areas; • Installation of dual-paned or other energy-efficient windows; • Use of interior and exterior energy-efficient lighting that exceeds then incumbent California Title 24 Energy Efficiency performance standards;	Prior to building permit issuance	Community & Economic Development Department, Planning and Building & Safety Divisions	Energy usage calculations submitted to the City

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
	• Installation of automatic devices to turn off lights where they are not needed; • Application of a paint and surface color palette that emphasizes light and off-white colors that reflect heat away from buildings; • Design of buildings with "cool roofs" using products certified by the Cool Roof Rating Council, and/or exposed roof surfaces using light and off-white colors; • Design of buildings to accommodate photo-voltaic solar electricity systems or the installation of photo-voltaic solar electricity systems; • Installation of Energy Star-qualified energy-efficient appliances, heating and cooling systems, office equipment, and/or lighting products.			
Air Quality	**MM-AQ-3:** To reduce water consumption and the associated energy-usage, the Project shall be designed to comply with the mandatory reductions in indoor water usage contained in the incumbent California Green Building Code and any mandated reduction in outdoor water usage contained in the City's water-efficient landscape requirements. Additionally, the Project shall implement the following: • Landscaping palette emphasizing drought-tolerant plants; • Use of water-efficient irrigation techniques; • U.S. Environmental Protection Agency (EPA) Certified WaterSense labeled or equivalent faucets, high-efficiency toilets, and water-conserving shower heads.	Prior to building permit issuance	Community & Economic Development Department, Planning and Building and Safety Divisions, Public Works Department, and Landscape and Tree Division	Approval of landscape plans

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
Air Quality	**MM-AQ-4:** The Project shall reduce vehicle miles traveled and emissions by implementing the following measure: • Pedestrian and bicycle connections shall be provided to surrounding areas consistent with the City's General Plan.	Prior to building permit issuance	Community & Economic Development Department, Planning Division and Public Works Department, Traffic Division	Approval of plans showing locations of pedestrian and bicycle connections, consistent with the City's General Plan
Air Quality	**MM-AQ-5:** The Project developer/applicant shall encourage its tenants to use water-based or low volatile organic compound cleaning products by providing publicly available information from the Southern California Air Quality Management District, CARB, and EPA on such cleaning products.	Prior to issuance of a Certificate of Occupancy	Community & Economic Development Department, Planning Division Project developer/applicant	The Project applicant/developer shall submit the education materials to be provided to the tenants, for review and approval by the City.
Air Quality	**MM-AQ-6:** Electric lawn equipment including but not limited to lawn mowers, leaf blowers and vacuums, shredders shall be used in lieu of conventional gas-powered equipment. This requirement shall be included in all Covenants, Conditions, and Restrictions for Project properties.	Prior to issuance of a Certificate of Occupancy Project operation	Community & Economic Development Department, Planning Division And Code Enforcement Division Project developer/applicant	The Project applicant/developer shall demonstrate to the City that the Covenants, Conditions, and Restrictions for Project properties include a requirement for tenants to use electric lawn equipment. Periodic inspections
Biological Resources	**MM-BIO-1:** Prior to the issuance of grading permit on the Site B, the Project developer/applicant shall obtain a Clean Water Act Section 404 permit, obtain a Regional Water Quality Control Board Clean Water Act Section 401 Water Quality Certification, and comply with Section 1602 of the California Fish and Game Code, including execution of a Streambed Alteration Agreement, if requested by the California Department of Fish and Wildlife (CDFW). All conditions of approval by these regulatory permitting agencies shall be adhered to by the Project.	Prior to issuance of grading permit on Site B Project construction	Community & Economic Development Department, Planning Division U.S. Army Corps of Engineers	Prior to grading, the City will be provided with evidence of issuance of regulatory permits by the Army Corps of Engineers, the Regional Water Quality Control Board, and the California Department of Fish and Wildlife (as required) related to impacts to jurisdictional waters.

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
			Santa Ana Regional Water Quality Control Board CDFW	
Biological Resources	**MM-BIO-2:** In accordance with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), potentially suitable habitat to support burrowing owl is present within the Project site. Prior to the initiation of construction activities, a qualified biologist shall conduct focused surveys for burrowing owl in accordance with the Burrowing Owl Survey Instructions for the MSHCP Area (dated March 29, 2006), which includes four site visits during the burrowing owl breeding season (March 1–August 31). Preconstruction clearance surveys for burrowing owl shall be conducted within 30 days of the commencement of site disturbance to determine whether burrowing owl is present at the site. Preconstruction surveys shall include suitable burrowing owl habitat within the Project footprint and an appropriate buffer as required in the most recent guidelines and where legal access to conduct the survey exists. If burrowing owls are not detected during the clearance survey, no additional mitigation is required. If burrowing owl is detected, occupied burrowing owl burrows shall not be disturbed during the nesting season (February 1–August 31) unless a qualified biologist approved by CDFW verifies through noninvasive methods that either the birds have not begun egg-laying and incubation or that juveniles from the occurred burrows are foraging independently and capable of independent survival. A 500-foot nondisturbance buffer (where no work activities may be conducted) will be maintained	Prior to grading and construction and during the burrowing owl breeding season (March 1–August 31) Prior to ground disturbance for each phase of the Project (within 30 days of ground disturbance)	Community & Economic Development Department, Planning and Building & Safety Divisions and Public Works Department	Focused Survey Report(s) and Preconstruction Survey Report(s) submitted to City for each phase of the Project.

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
	between Project activities and nesting burrowing owls during the nesting season, unless otherwise authorized by CDFW. If burrowing owl is detected during the nonbreeding season (September 1–January 31) or confirmed to not be nesting, a 160-foot nondisturbance buffer will be maintained between the Project activities and occupied burrow. If disturbance of burrowing owl cannot be avoided, passive or active relocation of burrowing owls will be implemented. Relocation will be conducted by a qualified biologist in accordance with procedures set forth by the MSHCP. Relocation of occupied burrows will be conducted outside the breeding season (February 1–August 31), pursuant to the California Fish and Game Code and the Migratory Bird Treaty Act.			
Biological Resources	**MM-BIO-3:** In order to avoid potential impacts to nesting birds in conformance with the Migratory Bird Treaty Act and California Fish and Game Code during all phases of the Project, a qualified biologist will conduct a nesting bird survey within 1 week prior to the commencement of any ground-disturbing activities from February 1 to August 31, which covers the breeding season for most birds that may occur in the Project area. If active nests are not observed, no further mitigation is required. However, if an active bird nest is found, the nest will be flagged and mapped on the construction plans along with an appropriate buffer, which will be determined by a qualified biologist based on the biology of the species. The nest area will be avoided until the nest is vacated and the juveniles have fledged or the nest is determined to be inactive (no eggs or young). The nest area will be demarcated in the field with flagging and stakes or construction fencing for avoidance.	One week prior to any ground disturbance between February 1 to August 31	Community & Economic Development Department, Planning and Building & Safety Divisions and Public Works Department	Nesting Bird Survey Report submitted to City

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
Cultural Resources	**MM-CUL-1:** Prior to grading permit issuance, if there are any changes to Project site design and/or proposed grades, the Applicant and the City shall contact interested tribes to provide an electronic copy of the revised plans for review. Additional consultation shall occur between the City, developer/applicant, and interested tribes to discuss any proposed changes and review any new impacts and/or potential avoidance/preservation of the cultural resources on the project site. The City and the developer/applicant shall make all attempts to avoid and/or preserve in place as many cultural and paleontological resources as possible that are located on the Project site if the site design and/or proposed grades should be revised.	Prior to issuance of grading permit, if there are any changes to the project site design and/or proposed grades	Community & Economic Development Department, Planning Division and Public Works Department	Consultation logs showing the Project applicant/developer and the City's efforts to contact interested tribes and the outcome of any such consultations
Cultural Resources	**MM-CUL-2: Archaeological and Paleontological Monitoring:** At least 30 days prior to application for a grading permit and before any grading, excavation and/or ground disturbing activities take place, the developer/applicant shall retain a Secretary of Interior Standards qualified archaeological monitor to monitor all ground-disturbing activities in an effort to identify any unknown archaeological resources. 1. The Project archaeologist, in consultation with interested tribes, the Developer, and the City, shall develop an Archaeological Monitoring Plan to address the details, timing, and responsibility of all archaeological and cultural activities that will occur on the project site. Details in the plan shall include: a. Project grading and development scheduling; b. The development of a rotating or simultaneous schedule in coordination with the developer/applicant and the Project archaeologist for designated Native American Tribal Monitors from the consulting tribes during grading, excavation, and ground-disturbing activities on the site, including the scheduling, safety	30 days prior to issuance of a grading permit	Community & Economic Development Department, Planning Division Qualified Archaeological/ Paleontological Monitor Native American Monitors	Archaeological Monitoring Plan Evidence that a qualified archaeological/paleontological monitor has been retained shall be provided to the City

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
	requirements, duties, scope of work, and Native American Tribal Monitors' authority to stop and redirect grading activities in coordination with all Project archaeologists; c. The protocols and stipulations that the Applicant, tribes, and project archaeologist/paleontologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits, or nonrenewable paleontological resources that shall be subject to a cultural resources evaluation; d. Treatment and final disposition of any cultural and paleontological resources, sacred sites, and human remains if discovered on the project site; and e. The scheduling and timing of the Cultural Sensitivity Training noted in mitigation measure **MM-CUL-4**.			
Cultural Resources	**MM-CUL-3: Treatment and Disposition of Cultural Resources:** In the event that Native American cultural resources are inadvertently discovered during the course of grading for this Project, the following procedures will be carried out for treatment and disposition of the discoveries: 1. **Temporary Curation and Storage:** During the course of construction, all discovered resources shall be temporarily curated in a secure location on site or at the offices of the Project archaeologist. The removal of any artifacts from the Project site will need to be thoroughly inventoried with tribal monitor oversight of the process; and 2. **Treatment and Final Disposition:** The landowner(s) shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains as part of the required mitigation for impacts to cultural	During grading and construction	Community & Economic Development Department, Planning Division Project applicant/developer Landowner Qualified Archaeological Monitor Native American Monitors	Report prepared that documents the finding and disposition of any Native American cultural resources If resources are found and curated, a copy of the curation agreement shall be provided to the City Completed Phase IV Monitoring Report shall be submitted to the City.

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
	resources. The Applicant shall relinquish the artifacts through one or more of the following methods and provide the City of Riverside Community and Economic Development Department with evidence of same: a. Accommodate the process for on-site reburial of the discovered items with the consulting Native American tribes or bands. This shall include measures and provisions to protect the future reburial area from any future impacts. Reburial shall not occur until all cataloguing and basic recordation have been completed; b. A curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 CFR Part 79 and therefore will be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation; c. For purposes of conflict resolution, if more than one Native American tribe or band is involved with the project and cannot come to an agreement as to the disposition of cultural materials, they shall be curated at the Western Science Center or Riverside Metropolitan Museum by default; and d. At the completion of grading, excavation, and ground-disturbing activities on the site, a Phase IV Monitoring Report shall be submitted to the City documenting monitoring activities conducted by the Project archaeologist and Native Tribal Monitors within 60 days of completion of grading. This report shall document			

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
	the impacts to the known resources on the property; describe how each mitigation measure was fulfilled; document the type of cultural resources recovered and the disposition of such resources; provide evidence of the required cultural sensitivity training for the construction staff held during the required pre-grade meeting; and, in a confidential appendix, include the daily/weekly monitoring notes from the archaeologist. All reports produced will be submitted to the City of Riverside, Eastern Information Center, and interested tribes.			
Cultural Resources	**MM-CUL-4: Cultural Sensitivity Training:** The Secretary of Interior Standards County certified archaeologist and Native American monitors shall attend the pre-grading meeting with the developer/permit holder's contractors to provide Cultural Sensitivity Training for all construction personnel. This shall include the procedures to be followed during ground disturbance in sensitive areas and protocols that apply in the event that unanticipated resources are discovered. Only construction personnel who have received this training can conduct construction and disturbance activities in sensitive areas. A sign-in sheet for attendees of this training shall be included in the Phase IV Monitoring Report.	Prior to grading	Community & Economic Development Department, Planning Division Qualified Archaeological Monitor Native American Monitors	Completed Phase IV Monitoring Report shall be submitted to the City.
Hazards and Hazardous Materials	**MM HAZ-1:** A minimum of 45 days prior to submittal of an application for a building permit, the Project developer/applicant shall inform the City of Riverside Planning Division and Building and Safety Division if any Project-related vertical structures or construction equipment will exceed 1,664 feet above mean sea level (AMSL). Prior to construction, if it is determined that any Project-related vertical structures or construction equipment will exceed 1,664 AMSL, then at the beginning of construction, the Project developer/applicant shall submit a Federal Aviation	45 days prior to submittal of a building permit application	Community & Economic Development Department, Planning and Building & Safety Divisions Construction contractor	Copy of filed FAA Form 7460-1 (if needed) and determination from FAA that construction will not be a hazard to air navigation shall be submitted to the City.

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
	Administration (FAA) Form 7460-1 to the FAA to ensure compliance with the FAA standards and air space obstruction-clearance. If FAA Form 7460-1 is required to be filed, the City shall not issue a building permit until the FAA issues a determination stating that the proposed construction will not be a hazard to air navigation.			
Hazards and Hazardous Materials	**MM-HAZ-2:** The Project developer/applicant shall submit applicable plans and forms for the proposed helipad/helistop to the March Air Reserve Base (March ARB), Riverside County Airport Land Use Commission (ALUC), Riverside City Council, and California Department of Transportation (Caltrans) Division of Aeronautics for review and approval. All conditions of approval from FAA, March ARB, and Riverside County ALUC shall be adhered to by the Project.	Prior to issuance of a building permit	Community & Economic Development Department, Planning Division March ARB Riverside County ALUC Riverside City Council Caltrans Division of Aeronautics FAA	Helipad/helistop plan submittal to and approval from the following reviewing agencies: March ARB; Riverside County ALUC; City of Riverside; Caltrans Division of Aeronautics; and FAA. Final project plans and entitlements submitted to and approved by the City as per the City's Plan Check submittal requirements. Compliance with any conditions of approval provided by March ARB, Riverside County ALUC, Caltrans Division of Aeronautics, and FAA for the helipad/helistop.
Hazards and Hazardous Materials	**MM-HAZ-3:** The following additional March ARB-required risk-reduction Project design features shall be incorporated into Project design: • **Reduce bird attractants at the Project site.** To avoid increasing the risk of bird-aircraft strikes for March ARB or other aircraft transiting the vicinity of the Project site, the following measures shall be taken: ***Project Design*:** When possible, the Project shall incorporate passive bird exclusion designs into the structural design. Windows, ledges, roof edges, air vents and other features shall be designed to prevent roosting if	Prior to issuance of a building permit, project construction, project operation	Community & Economic Development Department, Planning and Building & Safety Divisions March ARB Project applicant/developer	Approval of landscape plans. Compliance to be verified by the City and by the March ARB during Design Review entitlement process, and during plan check. Periodic inspections during construction and operation

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
	possible, by incorporating angles of 45 degrees or more. For problem areas such as flat roofs where it is difficult to create slopes, the Project developers shall install a physical barrier to perching such as bird spikes, bird netting, or bird wire. The Project operator shall maintain these physical barriers to remove accumulated debris and ensure they continue to function. Installation of bird exclusion devices shall be by an experienced specialist, and any installation shall comply with the Migratory Bird Treaty Act, Endangered Species Act, California Endangered Species Act, and any other applicable federal, state, or local regulations. The Project developer and operator shall ensure that stormwater drainage does not allow for ponding of water on site or adjacent to the Project site. ***Project Construction:*** During construction, all trash shall be disposed of in enclosed bins. Feeding of birds by workers on the Project site shall be prohibited. The prohibition of bird feeding shall be part of the construction personnel training directive as a requirement of daily working conditions. The construction contractor shall be responsible for monitoring and enforcing this requirement. ***Project Landscaping:*** The Project shall avoid the creation of large areas of turf grass or open water. When selecting landscaping trees, bushes, or other ornamental landscaping, the Project shall avoid planting any that produce fruit. Bird perching on Project landscaping shall be monitored by Project operators, and any landscaping that attracts substantial numbers of birds shall be removed and replaced with another variety. • The take-off and landing patterns from the proposed			

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
	helicopter operations shall be designed in a way to avoid conflicts with March ARB's flight operations. • The helistop shall be designed per FAA criteria with dimensions of 65 feet x 65 feet to serve the larger Sikorsky UH-60 Blackhawk helicopter for response to mass casualty events, especially if and when the hospital achieves trauma center status. • Proposed flight paths shall be to and from the southwest and to and from the northwest for noise-abatement reasons, as well as to minimize potential conflicts with March Air Reserve Base/Inland Port Airport fixed-wing traffic.			
Noise	**MM-NOI-1: Operational Noise Mitigation Measures** • Prior to certificate of occupancy for the proposed Hospital, Medical Office Building 3, Medical Office Building 4, or Parking Structure 1, whichever may be constructed first, the Project Applicant shall construct the proposed 8-foot-high perimeter wall (as shown on Figure 4.9-2) to reduce the operational noise levels at the adjacent sensitive receiver locations. • Prior to certificate of occupancy for the proposed Hospital, the Project shall demonstrate compliance with the requirements of all federal, state, regional, and local agencies. At a minimum, such agencies include the Federal Aviation Administration, the Riverside County Airport Land Use Commission, the March Air Reserve Base/Inland Port Airport, the State of California Heliport Permitting process, and the City of Riverside Entitlement process. ▪ The proposed helipad shall be reviewed pursuant to the provisions of Riverside Municipal Code Title 19, Chapter 19.320.	Prior to certificate of occupancy	Community & Economic Development Department, Planning and Building & Safety Divisions Project applicant/developer FAA Riverside County ALUC March ARB/Inland Port Airport State of California Heliport Permitting	Plans submitted to the City showing the perimeter wall and demonstrating compliance with requirements from the FAA, the Riverside County ALUC, the March ARB/Inland Port Airport, the State of California Heliport Permitting process, and the City of Riverside Entitlement process.

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
Transportation/ Traffic	**MM-TRAF-1: Valley Springs Parkway/Eucalyptus Avenue (#4):** Prior to opening the Project for operation, the Project developer/applicant shall pay for and install two five-section signal heads as well as modify the signal phasing such that there is an overlap phase for the existing dual right turn lanes on the southbound approach. The Project applicant will enter into an agreement with the City of Moreno Valley to complete these improvements.	Prior to certificate of occupancy	Public Works Department, Traffic Division Project applicant/developer City of Moreno Valley	Installation to be verified by the City of Riverside and the City of Moreno Valley
Transportation/ Traffic	**MM-TRAF-2: I-215 Southbound Ramps/Eucalyptus Avenue (#3):** Prior to opening the Project for operation, the Project developer shall pay the Project's fair share of the cost for the installation of a traffic signal, and construct the traffic signal, to serve the southbound right turn only off-ramp and westbound through traffic. This configuration will be similar to the existing I-215 northbound right turn only off-ramp / Eucalyptus Avenue intersection design.	Prior to certificate of occupancy	Public Works Department, Traffic Division Project applicant/developer Caltrans	Installation to be verified by the City of Riverside and Caltrans
Transportation/ Traffic	**MM-TRAF-3: Valley Springs Parkway/Eucalyptus Avenue (#4):** Prior to opening the Project for operation, the Project developer shall pay the Project's fair share of the cost to modify striping to provide a second left turn lane, in addition to the existing two through lanes on the northbound approach. The Project applicant will enter into an agreement with the City of Moreno Valley to complete these improvements if required by the City.	Prior to certificate of occupancy	Public Works Department, Traffic Division Project applicant/developer City of Moreno Valley	Payment of the fair share cost to be verified by the City of Riverside and the City of Moreno Valley. Applicant is required to provide the City of Riverside with documentation of payment to the City of Moreno Valley.

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
Transportation/ Traffic	**MM-TRAF-4: Day Street/Cottonwood Avenue (#13):** Prior to opening the Project for operation, the Project developer shall pay the Project's fair share of the cost to widen Day Street to provide a separate right turn lane, in addition to the existing left turn lane and one through lane on the northbound approach. The Project applicant will enter into an agreement with the City of Moreno Valley to complete these improvements if required by the City.	Prior to certificate of occupancy	Public Works Department, Traffic Division Project applicant/developer City of Moreno Valley	If required, payment of the fair share cost to be verified by the City of Riverside and the City of Moreno Valley. Applicant is required to provide the City of Riverside with documentation of payment to the City of Moreno Valley. Evidence of an agreement with the City of Moreno Valley to complete the improvements (if required by the City of Moreno Valley). Applicant is required to submit the agreement to the City of Riverside.
Transportation/ Traffic	**MM-TRAF-5: Day Street / Bay Avenue (#14):** Prior to opening the Project for operation, the Project developer shall pay the Project's fair share of the cost to complete the following improvements: • Northbound approach: Install a traffic signal and widen Day Street to provide a second through lane. • Southbound approach: Widen Day Street to provide a second through lane. The Project applicant will enter into an agreement with the City of Moreno Valley to complete these improvements if required by the City.	Prior to certificate of occupancy	Public Works Department, Traffic Division Project applicant/developer City of Moreno Valley	If required, payment of the fair share cost to be verified by the City of Riverside and the City of Moreno Valley. Applicant is required to provide the City of Riverside with documentation of payment to the City of Moreno Valley. Evidence of an agreement with the City of Moreno Valley to complete the improvements (if required by the City of Moreno Valley). Applicant is required to submit the agreement to the City of Riverside.
Transportation/ Traffic	**MM-TRAF-6: Day Street/Alessandro Boulevard (#15):** Prior to opening the Project for operation, the Project developer shall pay the Project's fair share of the cost to modify striping and the existing raised median to provide a second left turn lane, in	Prior to certificate of occupancy	Public Works Department, Traffic Division	If required, payment of the fair share cost to be verified by the City of Riverside and the City of Moreno Valley. Applicant is required to

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
	addition to the existing three through lanes on the eastbound approach. The Project applicant will enter into an agreement with the City of Moreno Valley to complete these improvements if required by the City.		Project applicant/developer City of Moreno Valley	provide the City of Riverside with documentation of payment to the City of Moreno Valley. Evidence of an agreement with the City of Moreno Valley to complete the improvements (if required by the City of Moreno Valley). Applicant is required to submit the agreement to the City of Riverside.
Transportation/ Traffic	**MM-TRAF-7: Memorial Way/Towngate Drive (#16):** Prior to opening the Project for operation, the Project developer shall pay the Project's fair share of the cost to implement signal modifications for protected/permitted operations for both the north/south movements and the east/west movements as well as modify the intersection to include the following geometrics: • Southbound approach: Convert the existing second through lane to provide a dedicated right turn late with overlap phasing, in addition to the existing left turn lane and one through lane. • Eastbound approach: Retain existing two through lanes and defacto right turn lane. • Westbound approach: Retain existing two through lanes and defacto right turn lane. The Project applicant will enter into an agreement with the City of Moreno Valley to complete these improvements if required by the City.	Prior to certificate of occupancy	Public Works Department, Traffic Division Project applicant/developer City of Moreno Valley	If required, payment of the fair share cost to be verified by the City of Riverside and the City of Moreno Valley. Applicant is required to provide the City of Riverside with documentation of payment to the City of Moreno Valley. Evidence of an agreement with the City of Moreno Valley to complete the improvements (if required by the City of Moreno Valley). Applicant is required to submit the agreement to the City of Riverside.

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
Transportation/ Traffic	**MM-TRAF-8: Day Street/Eucalyptus Avenue (#12):** Prior to opening the Project for operation, the Project developer shall pay fees for the Transportation Uniform Mitigation Fee (TUMF) program which includes modification of this intersection to provide a dedicated right turn lane with overlap phasing on the northbound approach. The Project applicant will enter into an agreement with the City of Moreno Valley to complete these improvements if required by the City.	Prior to certificate of occupancy	Public Works Department, Traffic Division Project applicant/developer City of Moreno Valley	If required, payment of fees to be verified by the City of Riverside and the City of Moreno Valley. Applicant is required to provide the City of Riverside with documentation of payment to the City of Moreno Valley. Evidence of an agreement with the City of Moreno Valley to complete the improvements (if required by the City of Moreno Valley). Applicant is required to submit the agreement to the City of Riverside.
Transportation/ Traffic	**MM-TRAF-9: Day Street/Cottonwood Avenue (#13):** Prior to opening the Project for operation, the Project developer shall pay the Project's fair share of the cost to complete the following improvements: • Eastbound approach: Widen Cottonwood Avenue to provide a separate right turn lane, in addition to the existing left turn lane and one through lane. • Westbound approach: Provide overlap phasing for the existing right turn lane. The Project applicant will enter into an agreement with the City of Moreno Valley to complete these improvements if required by the City.	Prior to certificate of occupancy	Public Works Department, Traffic Division Project applicant/developer City of Moreno Valley	If required, payment of the fair share cost to be verified by the City of Riverside and the City of Moreno Valley. Applicant is required to provide the City of Riverside with documentation of payment to the City of Moreno Valley. Evidence of an agreement with the City of Moreno Valley to complete the improvements (if required by the City of Moreno Valley). Applicant is required to submit the agreement to the City of Riverside.
Transportation/ Traffic	**MM-TRAF-10: Day Street/Alessandro Boulevard (#15):** Prior to opening the Project for operation, the Project developer shall pay the Project's fair share of the cost to complete the following improvements: • Northbound approach: Modify striping to provide a	Prior to certificate of occupancy	Public Works Department, Traffic Division	If required, payment of the fair share cost to be verified by the City of Riverside and the City of Moreno Valley. Applicant is required to provide the City of Riverside with

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
	second through lane, in addition to the existing left turn lane and through lane. • Southbound approach: Widen Day Street to provide a dedicated right turn lane. • Westbound approach: Modify striping and existing raised median to provide a second left turn lane and widen Alessandro Boulevard to provide a third receiving lane. The Project developer will enter into an agreement with the City of Moreno Valley to complete these improvements if required by the City.		Project applicant/developer City of Moreno Valley	documentation of payment to the City of Moreno Valley. Evidence of an agreement with the City of Moreno Valley to complete the improvements (if required by the City of Moreno Valley). Applicant is required to submit the agreement to the City of Riverside.
Transportation/ Traffic	**MM-TRAF-11: Valley Springs Parkway/Driveway 5 (#23):** Prior to opening the Project for operation, the Project developer shall pay for and install a traffic signal. Intersection geometries will be constructed as described in Section 4.11.5, *Project Design Features that Will Reduce Impacts*.	Prior to certificate of occupancy of Hospital Phase 1, Phase 2, Medical Office Building 3, Medical Office Building 4, or Parking Structure 1.	Public Works Department, Traffic Division Project applicant/developer	Installation to be verified by the City
Transportation/ Traffic	**MM-TRAF-12: Canyon Park Drive – Driveway 7/Gateway Drive (#25):** Prior to opening the Project for operation, the Project developer shall pay for and install a traffic signal. Intersection geometries will be constructed as described in Section 4.11.5, *Project Design Features that Will Reduce Impacts*.	Prior to certificate of occupancy of Medical Office Building 1, Medical Office Building 2, or Parking Structure 2.	Public Works Department, Traffic Division Project applicant/developer	Installation to be verified by the City
Transportation/ Traffic	**MM-TRAF-13:** Prior to design approval of the helistop by the City of Riverside Planning Department, the developer/applicant shall submit plans to the March ARB Air Traffic Control for review and approval of plans related to the proposed helistop location and proposed helicopter flight path alignments to ensure no conflicts occur between the proposed helicopter	Prior to City approval of entitlements for the helistop	Community & Economic Development Department, Planning Division Project applicant	Review and approval of plans by the March ARB Air Traffic Control Evidence of the agreement between March ARB Air Traffic Control and the Canyon Springs Healthcare Campus

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
	flight paths and March ARB flight operations. A copy of the approved plans from March ARB Air Traffic Control shall be submitted to the City of Riverside Planning Department. A letter of agreement shall be developed between March ARB Air Traffic Control and the Canyon Springs Healthcare Campus operator. The letter of agreement will define specific flight paths and communication procedures for helicopter operations to and from the hospital. The Canyon Springs Healthcare Campus operator will require all helicopter operators using the helistop to sign the letter of agreement.		March ARB Air Traffic Control	operator
Transportation/ Traffic	**MM-TRAF-14:** Prior to helistop approval by the City of Riverside Planning Commission/City Council, the following agency actions will be required with regards to the design, construction, and operation of the helistop: • An FAA Form 7460-1 will be submitted. • An airspace study by FAA staff per Part 157, Notice of Landing Area Proposal, of the Federal Aviation Regulations (FARs). This study results in an "airspace determination letter." • Project review and finding of consistency with the March ARB/Inland Port Airport Land Use Compatibility Plan by Riverside County Airport Land Use Commission as required by California Public Utilities Code. • Application for and receipt of Heliport Site Approval Permit from Caltrans Division of Aeronautics authorizing heliport construction. • After construction of the helipad a final inspection and approval of a Heliport Permit authorizing flight operations by Caltrans Division of Aeronautics.	Prior to City approval of entitlements for the helistop	Community & Economic Development Department, Planning Division FAA Riverside County ALUC Caltrans Division of Aeronautics	Submittal of FAA Form 7460-1 Issuance of an airspace determination letter Review and consistency finding from the Riverside County ALUC Issuance of Heliport Site Approval Permit for heliport construction Issuance of a Heliport Permit for heliport operation

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
Utilities and Service Systems	**MM-UTL-1:** The developer/applicant of the Project shall be required to meet with Eastern Municipal Water District (EMWD) staff to develop a plan of service, which shall detail water, wastewater, and recycled water requirements to serve the Project.	Prior to certificate of occupancy	Community & Economic Development Department, Planning Division Project applicant/developer EMWD	Submittal of utility plans to City. The applicant is required to provide the City with evidence of their meeting with the Eastern Municipal Water District.
Utilities and Service Systems	**MM-UTL-2:** Prior to issuance of building permits, the developer/applicant shall complete a Construction Waste Recycling Plan and submit the plan to the Riverside County Waste Management Department (RCWMD) for approval. The plan shall identify and estimate the materials to be recycled during construction and demolition activities and shall specify where and how the recyclable materials will be stored on the Project site. Compliance with the plan shall be a requirement in all construction contracts. The RCWMD-approved plan shall be attached to all construction plans and distributed to all construction contractors. Once construction is complete, the developer/applicant shall be responsible for preparing a Waste Recycling Report that demonstrates that the Project recycled a minimum of 50% of its construction and demolition waste. The waste recycling report must be submitted to, and approved by, the RCWMD prior to issuance of occupancy permits.	Prior to issuance of building permits, prior to certificate of occupancy permits	Community & Economic Development Department, Building and Safety Division Project applicant/developer RCWMD Construction contractor	Approval of the Construction Waste Recycling Plan Approval of the Waste Recycling Report Applicant is required to submit documentation to the City substantiating implementation of **MM-UTL-2**.

Table 3-1
Mitigation Monitoring and Reporting Program

Impact Category	Mitigation Measure	Implementation Timing	Responsible Monitoring Party	Monitoring/Reporting Method
Utilities and Service Systems	**MM-UTL-3:** Prior to issuance of building permits, the developer/applicant shall submit building plans to the Riverside County Waste Management Department (RCWMD) and obtain approval from the RCWMD for compliance with the Riverside County Design Guidelines for Refuse and Recyclables Collection and Loading Areas, which include specifications for recyclable storage space, location and access, signage, protection and security, compatibility, and overall compliance with federal, state, and local laws.	Prior to issuance of building permits	Community & Economic Development Department, Building and Safety Division Project applicant/developer RCWMD	Approval for compliance with the Riverside County Design Guidelines for Refuse and Recyclables Collection and Loading Areas Prior to the issuance of building permits, the City must verify approval of the applicant's building plans by the Riverside County Waste Management Department.

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ATTACHMENT A

Letter of Agreement for Helipad Operations

From:	HUNT, JOHN P GS-12 USAF AFRC A3/A3OA
To:	MORIMOTO, JAMES P GS-13 USAF AFRC 452 OSS/OSA
Cc:	ABEL, PATRICK D MSgt USAF AFRC HQ AFRC/A3OA; SCHELL, DANIEL M MSgt USAF AFRC HQ AFRC/A3OA
Subject:	Memo for Record, Letter of Agreement Helipad Operations
Date:	Thursday, August 17, 2017 12:29:46 PM

MEMORANDUM FOR 452 OSS/OSA

FROM: HQ AFRC/A3OA
155 Richard Ray Blvd
Robins AFB GA 31098-1635

SUBJECT: Memo for Record, Letter of Agreement Helipad Operations

1. The draft Letter of agreement was reviewed for compliance; HQ AFRC/A3OA concurs with the development of letters of agreement, between March ARB Air Traffic Control and individual air ambulances providers. Additionally, if Canyon Springs Healthcare elects to certify helipad operations under CFR 14 Part 121 and/or Part 135, A3OA will support/coordinate the LOA with the hospital.

2. If you have any questions, please contact Mr. John Hunt, AFRC/A3OA, DSN 497-0305, or email john.hunt.15@us.af.mil.

//JPH for JTW, 17 Aug 17 SIGNED//
JIMMY T. WEST
Airfield Operations Branch Chief
HQ AFRC/A3OA
Workflow: afrc.a3oa@us.af.mil
DSN 497-0310
Comm (478) 327-0310

Canyon Springs Healthcare Campus and
March Air Reserve Base Air Traffic Control Tower and Radar Approach Control

LETTER OF AGREEMENT

EFFECTIVE: EXAMPLE

SUBJECT: Helipad Coordination and Operational Procedures

1. PURPOSE. This Letter of Agreement (LOA) prescribes the responsibilities and coordination procedures for operations at the Canyon Springs Healthcare Campus (CSHC) helipad between CSHC and March Air Reserve Base (KRIV) Air Traffic Control Tower (TOWER) and Radar Approach Control (RAPCON). **This LOA shall be used in development of binding operational agreements with any future hospital operator at CSHC (OPERATOR), and this LOA shall be referenced in any deeds or leases to any such future OPERATOR.**

2. CANCELLATIONS. This LOA is new.

3. BACKGROUND. **OPERATOR** contracts helicopter aircrews to provide patient transport services between its medical facility and various other locations. The routes listed in this LOA are in close proximity to established traffic flows used by multiple civil and military aircraft in the vicinity of KRIV. The operations and coordination procedures described herein promote safety for all airspace operators. Furthermore it is understood that operations by CSHC-related aircrews shall be conducted solely under Visual Flight Rules (VFR) or Special VFR (SVFR). Changes to this LOA may be proposed by signatories at any time.

4. SCOPE. These procedures supplement 14 Code of Federal Regulations (CFR) Part 91, General Operating and Flight Rules; FAA Order JO 7110.65, AIR TRAFIC CONTROL; March Air Reserve Base Instruction (MARBI) 13-204 and are applicable to all VFR and SVFR operations within KRIV Class C/D surface area. Development or implementation of public or commercial Instrument Approach Procedures (IAP) supporting Instrument Flight Rules (IFR) operations and procedures requires this LOA be revised prior to March ATC providing services.

5. RESPONSIBILITIES.

a. **OPERATOR** contracts with various commercial helicopter emergency medical service (HEMS) providers to help meet its patient-transport needs. **OPERATOR** is responsible for ensuring that all contracted HEMS operators operating in the vicinity of KRIV are provided copies of this LOA. **OPERATOR** shall instruct HEMS operators that they shall follow procedures outlined in this LOA as well as guidance and procedures specified in paragraph **4. SCOPE**.

b. TOWER is responsible for providing Class C services from the surface up to but not including 3,000 ft MSL within a 5 NM radius of KRIV (N 33°52'50" W 117°15'34") when the airfield is open (Attachment 1). TOWER isalso responsible for Class D airspace extending upward from the surface to and including 4,000 ft MSL within a 5 NM radius of KRIV (N 33°52'50" W 117°15'34") when the airfield is closed (Attachment 2).

c. RAPCON is responsible for providing Class C services in the airspace extending upward from 3,000 ft MSL up to and including 4,000 ft MSL within a 5 NM radius of KRIV (N 33°52'50" W 117°15'34") and that airspace extending upward from 3,900 ft MSL to and including 5,000 ft MSL within the 10 NM radius of KRIV from the centerline of V-16/V-370

east of the airport clockwise to the 216° true bearing from the airport, that airspace extending upward from 2,900 ft MSL to but not including 3,900 ft MSL within 2 NM east and 1.5 NM west of the 150° true bearing from the airport extending from the 5 NM radius to the 10 NM radius of the airport, and excludes Class C airspace designated in the Class E airspace description that follows. RAPCON is designated the Class E airspace extending upward from the surface up to and including 5,000 ft MSL bounded by N 33°55'00" W 117°06'00" to N 33°55'00" W 116°59'00" to N 33°38'00" W 116°54'45" thence via 22 NM arc from the DASR at N 33°53'10" W 117°14'38" to N 33°31'30" W 117°11'00" to N 33°38'00" W 117°17'00" to N 33°49'20" W 117°22'15" and the origin point (Attachment 2).

6. PROCEDURES.

a. **OPERATOR-contracted** aircrews shall:

(1) Be familiar with KRIV Class C Surface Area (Attachment 1).

(2) Comply with all Class C service procedures.

(3) Limit the utilization of call sign LIFEGUARD, MEDEVAC, AIR EVAC, and HOSP or priority afforded for those operations to flights requiring expeditious movement of patients, vital organs, or urgently needed medical materials.

(4) Comply with 14 CFR §91.113(b) when operating at night visually irrespective of any or all aircrew operating aircraft with night vision devices.

(5) Maintain at or below 1,000 ft AGL within Class C and/or Class D boundaries, unless approved/coordinated otherwise.

(6) File a VFR flight plan listing March ARB, (RIV) as destination airport and specify "CSHC helipad" in Block 11 Remarks of FAA Form 7233-1, *Flight Plan*, or Block 18 Other Information of FAA Form 7233-4, *International Flight Plan*.

(7) Obtain current March ARB, Automatic Terminal Information Service (ATIS), frequency 134.75, prior to initial radio contact with RAPCON or TOWER.

(8) Enter Class C or Class D via the following visual reporting points: (Attachment 3).

(a) West Entry: THREE SISTERS. RIV 230/004.75. N 33°52'11.97" W 117°21'34.13"

(b) North Entry: BOX SPRINGS. RIV 318/003.25. N 33°57'13.53" W 117°18'25.07"

(c) East Entry: RIDGE CREST. RIV 076/005.5. N 33°54'30.94" W 117°09'53.75"

(d) South Entry: PERRIS. City of Perris northwest of HDF.

(9) Provide RAPCON/TOWER with the following information on initial radio contact:

(a) Aircraft call-sign.

(b) Position in reference to visual reporting points listed above.

(c) Altitude.

(d) Intentions. (*INBOUND CANYON SPRINGS* or other intentions)

(10) Aircrews shall provide TOWER with the following information over radio or by phone at (951) 655-3198 prior to departure from CSHC helipad:

(a) Proposed estimated time of departure (EDT).

(b) Proposed altitude.

(c) Direction of flight.

b. TOWER shall:

(1) Direct CSHC-bound aircrews to enter and follow VFR traffic patterns shown in Attachment 3, or.

(2) Authorize aircrew to proceed directly to helipad for landing based on current traffic conditions. Provide expeditious departure for aircrew direct to intended destination.

7. ATTACHMENTS.

a. Attachment 1 - KRIV Class C Surface Area
b. Attachment 2 - KRIV Class D Surface Area
c. Attachment 3 - KRIV Visual Reporting Points & VFR Rectangular Patterns

_____ _____

Aircraft Operator Date Signed

Canyon Springs Healthcare Campus

_____ _____

Date Signed

Air Traffic Manager, March Air Reserve Base

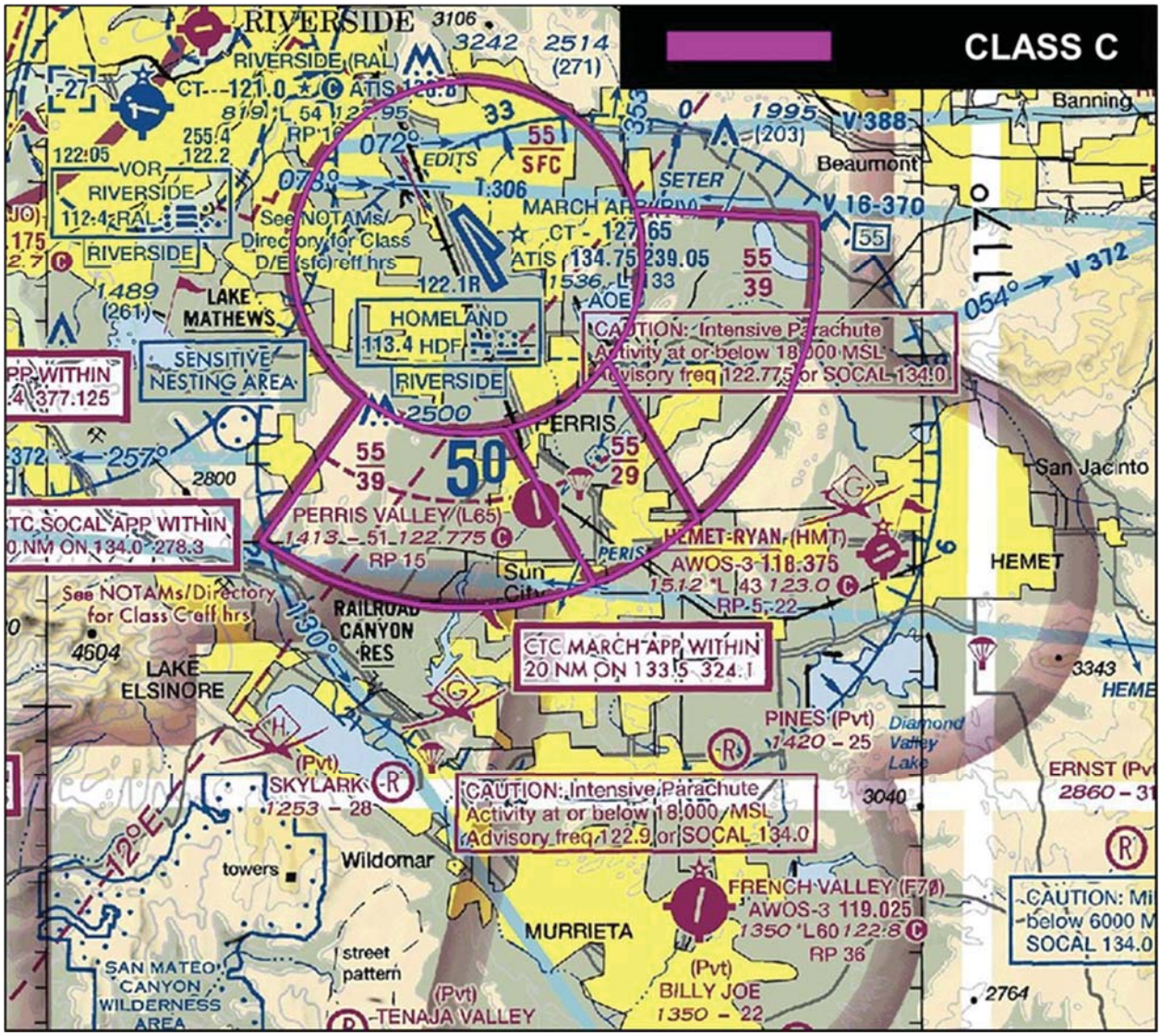
_____ _____

Date Signed

Commander, 452d Operations Group

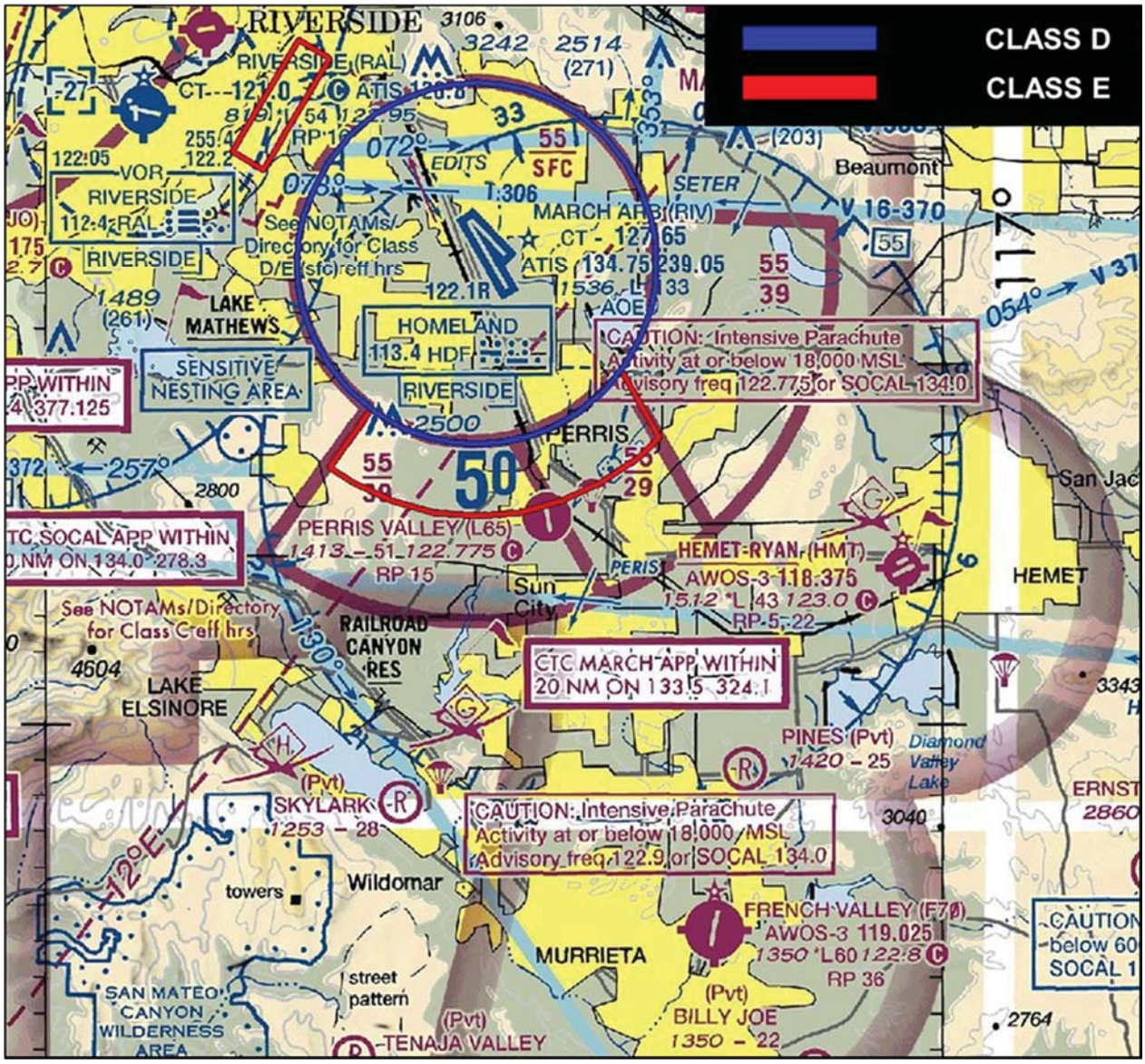
Attachment 1

KRIV Class C Surface Area



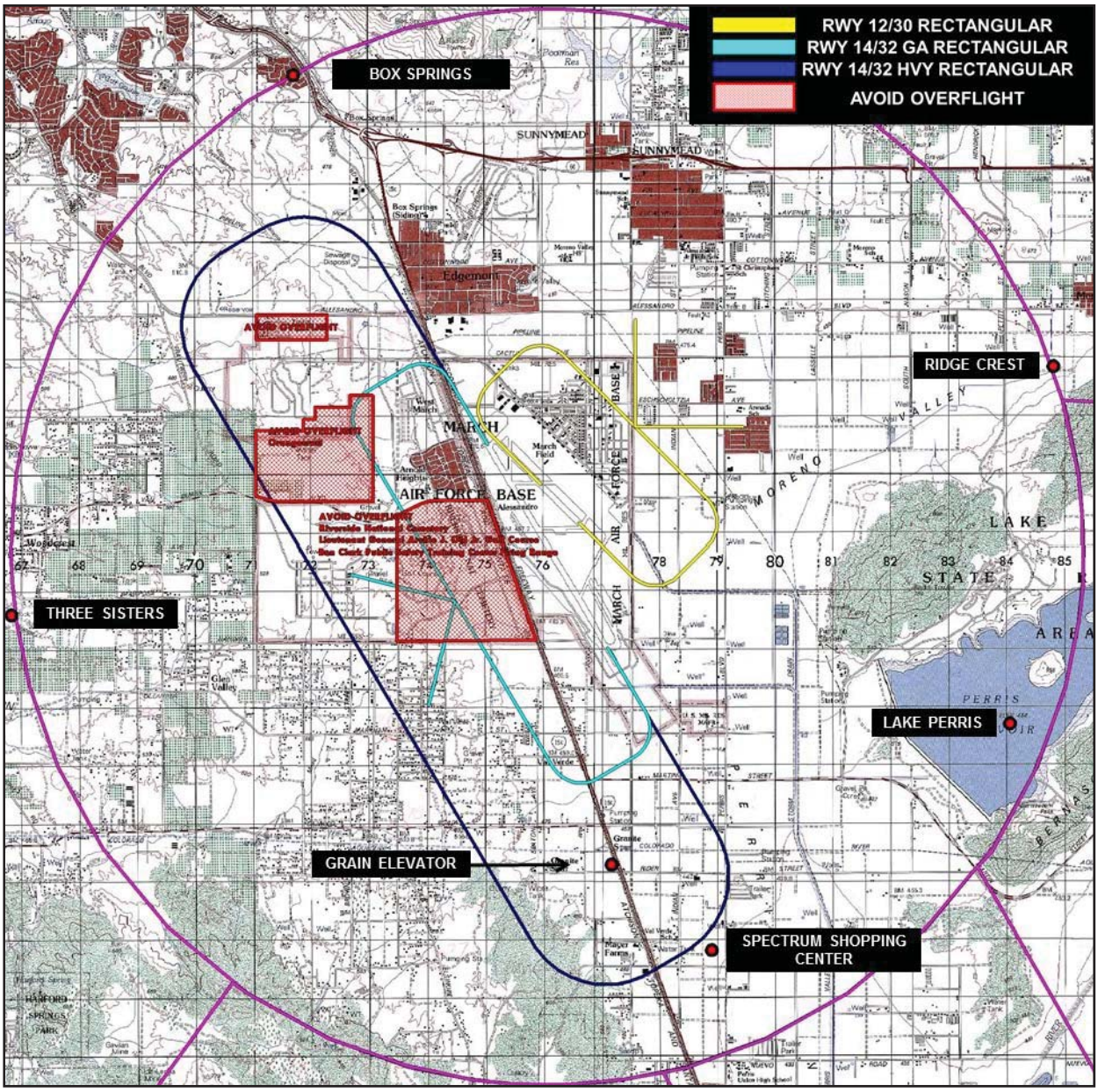
Attachment 2

KRIV Class D Surface Area



Attachment 3

KRIV Visual Reporting Points & VFR Rectangular Patterns



ATTACHMENT B

Canyon Springs Healthcare Campus and Senior Living Supplemental Cumulative Traffic Evaluation

Ofc: 1001 Dove St. | Suite 260 | Newport Beach, CA 92660
Main: 260 E. Baker St. | Suite 200 | Costa Mesa, CA 92626
urbanxroads.com

October 4, 2017

Jim Lucas

CUMMING
523 W 6th Street, Suite 1001
Los Angeles, CA 90014

SUBJECT: CANYON SPRINGS HEALTHCARE CAMPUS & SENIOR LIVING SUPPLEMENTAL CUMULATIVE TRAFFIC EVALUATION

Dear Mr. Lucas:

The purpose of this letter is to update the Cumulative (Opening Year) analysis presented in the Canyon Springs Healthcare Campus & Senior Living Traffic Impact Analysis (Urban Crossroads, Inc. February 28, 2017), herein after referred to as the TIA. General Plan buildout analysis is also updated for three intersections. The Project is generally located north of Eucalyptus Avenue, between Valley Springs Parkway and Day Street in the City of Riverside.

One Project driveway has been reconfigured to eliminate left turn out activity. The 2019 and General Plan buildout analysis in this supplemental traffic letter reflects this re-routing of Project traffic.

The Traffic Impact Analysis commenced in 2014. At the time the Traffic Impact Analysis was prepared, the Project's anticipated Opening Year was identified as 2016. This supplemental traffic letter updates the analysis to Opening Year 2019. The 2% ambient growth is applied over five years, and background traffic continues to include full buildout of all cumulative projects identified in the TIA, along with full buildout of the Canyon Springs project.

BACKGROUND TRAFFIC

Ambient growth that was included in the TIA has been adjusted to include five years of background (ambient) growth at 2% per year for Cumulative (Opening Year) traffic conditions. The ambient growth factor is intended to approximate regional traffic growth, in addition to cumulative projects. The total ambient growth is 10.41% (compounded growth of two percent per year over two years or 1.02^5 years) for Opening Year traffic conditions. This ambient growth rate is added to existing traffic volumes to account for area-wide growth not reflected by cumulative development projects, and is updated from 4.04% in the TIA.

CUMULATIVE PLUS PROJECT TRAFFIC VOLUME FORECASTS

Project Driveway 1 has been reconfigured to eliminate left turn out activity. This change in Project access involves re-routing the eastbound left turn out volume from Driveway 1 to northbound Day Street, which now travels south to the intersection of Day Street at Eucalyptus Avenue to make a U-turn before heading north.

The Opening Year With Project volumes have been updated to incorporate the background volume adjustments indicated above, and also the Project driveway modification. Exhibits 1 and 2 show the weekday AM and PM peak hour intersection turning movement volumes for Opening Year (2019) With Project traffic conditions.

CUMULATIVE PLUS PROJECT INTERSECTION OPERATIONS ANALYSIS

LOS calculations were conducted for the study intersections to evaluate their operations under 2019 Opening Year With Project conditions with roadway and intersection geometrics consistent with Section 6.1 of the TIA.

For Opening Year With Project Conditions, Table 1 indicates that the additional background growth with Project traffic would result in the need for additional improvements in the Opening Year scenario at the Day Street / Eucalyptus Avenue and Day Street / Alessandro Boulevard intersections. However, these additional improvements were previously recommended in the TIA for General Plan Buildout Recommended Improvements. As such, no new improvements would be required to address 2019 Opening Year With Project Conditions. No new impacts are found, but the previously identified impact for General Plan conditions at Day Street / Eucalyptus Avenue is now indicated for 2019 Opening Year With Project Conditions.

The intersection operations analysis worksheets for Opening Year With Project traffic conditions are included in Attachment 1 of this letter.

CUMULATIVE PLUS PROJECT IMPACTS AND RECOMMENDED IMPROVEMENTS

Improvement strategies have been recommended at intersections that have been identified as cumulatively impacted in an effort to reduce each location's peak hour delay and improve the associated LOS grade to LOS "D" or better. Although the intersection LOS is at an unacceptable level (LOS "E" or "F") with or without project, the change in peak hour delay is considered to be a significant project impact based upon City of Riverside criteria for projects that propose uses or intensities above that contained in the General Plan.

The effectiveness of the recommended improvements to address Opening Year cumulative traffic impacts are discussed below and presented previously in Table 1. Improvement strategies identified in Table 1 have been recommended at intersections that have been identified as cumulatively impacted to reduce each location's peak hour delay to less than significant.

For most of the study area intersections, the 2019 Opening Year recommendations are the same as those identified in the TIA for Cumulative Plus Project recommended improvements. Impacts at Day Street / Eucalyptus Avenue and Day Street / Alessandro Boulevard under 2019 Opening Year With Project conditions would additionally be addressed by some of the improvements identified in the TIA under the General Plan Buildout Recommended Improvements. As such, no new recommendations are required to address impacts under 2019 Opening Year With Project Conditions. The improvement recommendations for Day Street / Eucalyptus Avenue and Day Street / Alessandro Boulevard from the General Plan Buildout recommended improvements are listed below. Please note that the improvement for the eastbound approach at Day Street / Alessandro Boulevard was previously identified under the Cumulative Plus Project Recommended Improvements, while the northbound and southbound approach improvements were previously identified under the General Plan Buildout recommended improvements.

Day Street / Eucalyptus Avenue (#12)

- NB Approach: Modify striping to provide a dedicated right turn lane with overlap phasing.

Day Street / Alessandro Boulevard (#15)

- NB Approach: Modify striping to provide a 2nd through lane, in addition to the existing left turn lane and through lane.
- SB Approach: Widen Day Street to provide a dedicated right turn lane.
- EB Approach: Modify striping and existing raised median to provide a 2nd left turn lane, in addition to the existing three through lanes.

With these recommended improvements and those previously identified for Cumulative Plus Project conditions in the TIA, impacts under 2019 Opening Year With Project conditions would be reduced to less than significant.

GENERAL PLAN BUILDOUT TRAFFIC VOLUME FORECASTS

Project Driveway 1 has been reconfigured to eliminate left turn out activity. This change in Project access involves re-routing the eastbound left turn out volume from Driveway 1 to northbound Day Street, which now travels south to the intersection of Day Street at Eucalyptus Avenue to make a U-turn before heading north. Three intersections are affected by this change: Day Street / Driveway 1, Day Street / Driveway 2, and Day Street / Eucalyptus Avenue.

GENERAL PLAN BUILDOUT INTERSECTION OPERATIONS ANALYSIS

LOS calculations were conducted for the study intersections to evaluate their operations under General Plan Buildout With Project conditions with roadway and intersection geometrics consistent with the TIA.

For General Plan Buildout With Project conditions, Table 2 indicates that Project driveway adjustment would not result in the need for additional improvements. The intersection operations analysis worksheets for General Plan Buildout With Project traffic conditions are included in Attachment 2 of this letter.

SITE ACCESS RECOMMENDATION ADJUSTMENTS

Most site access driveway improvements for the Project remain unchanged from the TIA. This letter addresses site access driveway improvements only for the location that has changed from the TIA. Construction of on-site and site adjacent improvements shall occur in conjunction with adjacent Project development activity or as needed for Project access purposes.

Day Street / Driveway 1 (#10) – Install stop sign control on the EB approach and construct the intersection with the following geometrics:

- NB Approach: Provide a dedicated left turn lane, in addition to the existing two through lanes.
- SB Approach: Maintain existing three through lanes.
- EB Approach: Provide a right turn lane.

If you have any questions, please contact us at (949) 336-5990 for John or (949) 336-5991 for Marlie.

Respectfully submitted,

URBAN CROSSROADS, INC.

John Kain, AICP
Principal

Marlie Whiteman, P.E.
Senior Associate

EXHIBIT 1: OPENING YEAR WITH PROJECT AM PEAK HOUR INTERSECTION VOLUMES

LEGEND:

- 34 = INTERSECTION ID
- = FUTURE ROADWAY / DIRT
- = PROJECT SITE

1 Sycamore Cyn. Bl. & Eastridge Av.

307	198	147
209	433	191
499	713	121
421	1198	184

2 Box Springs Bl. & Eastridge Av.

4	74	157
67	653	17
551	1387	66
11	120	64

3 I-215 Ramps & Eucalyptus Av.

240	392
328	1419
	486
89	
698	
86	
346	
421	

4 Valley Springs Pkwy. & Eucalyptus Av.

512	52	38
703	685	59
101	1367	24
418	449	136

5 Day St. & SR-60 WB Ramps

616	137
254	630
421	283

6 Day St. & SR-60 EB Ramps

1127	118
89	582
615	516

7 Day St. & Cyn. Springs Pkwy.

320	126	178
316	34	38
114	36	34
71	701	58

8 Day St. & Campus Pkwy.

132	950	67
58	29	56
70	73	22
127	700	42

9 Day St. & Gateway Dr.

325	510	86
130	45	65
109	111	37
174	597	52

10 Day St. & Dwy. 1

23	
622	
15	
46	
933	

11 Day St. & Dwy. 2

38	
600	
8	
15	
23	
972	

12 Day St. & Eucalyptus Av.

197	282	97
247	601	91
140	1076	293
257	503	224

13 Day St. & Cottonwood Av.

26	460	208
37	136	61
237	145	98
40	603	121

14 Day St. & Bay Av.

9	587	22
20	30	18
63	24	10
7	688	1

15 Day St. & Alessandro Bl.

137	375	89
254	1057	159
125	1658	163
95	297	105

16 Memorial Wy. & Towngate Dr.

316	91	15
223	394	329
33	501	10
552	177	17

17 Corporate Centre Pl. & Cyn. Springs Pkwy.

12	13	29
10	218	6
27	306	26
12	12	33

18 Corporate Centre Pl. & Campus Pkwy.

19	26	15
12	71	4
13	77	29
15	52	26

19 Dwy. 3 & Corporate Centre Pl.

60
85
3
9

20 Valley Springs Pkwy. & Corporate Centre Pl.

12	350	29
10	10	37
5	18	34
98	388	48

21 Valley Springs Pkwy. & Dwy. 4

12	406	2
3	0	11
4	0	14
12	527	7

22 Valley Springs Pkwy. & Gateway Dr.

369	
63	
	48
	172
(WEST LEG CLOSED)	
	0
	498
	414

23 Valley Springs Pkwy. & Dwy. 5

494	
45	
14	
108	
897	
356	

24 Dwy. 6 & Gateway Dr.

0	1	11
13	344	7
13	218	5
2	1	2

25 Canyon Park Dr. - Dwy. 7 & Gateway Dr.

46	36	22
77	188	18
31	288	169
5	12	51

26 Dwy. 8 & Gateway Dr.

0	
0	
1	
493	
1	
227	

27 Dwy. 9 & Gateway Dr.

1	0	7
3	206	19
13	492	103
1	0	28

28 Canyon Park Dr. & Campus Pkwy.

5	34	14
5	69	38
25	95	63
18	19	39

29 Canyon Park Dr. & Dwy. 10

107	
	2
	1
	118

30 Canyon Park Dr. & Dwy. 11

106	
8	
4	
1	
118	
2	

31 Canyon Park Dr. & Dwy. 12

105	
3	
118	
2	

32 Dwy. 13 & Gateway Dr.

	202
	137
242	
116	
34	
41	

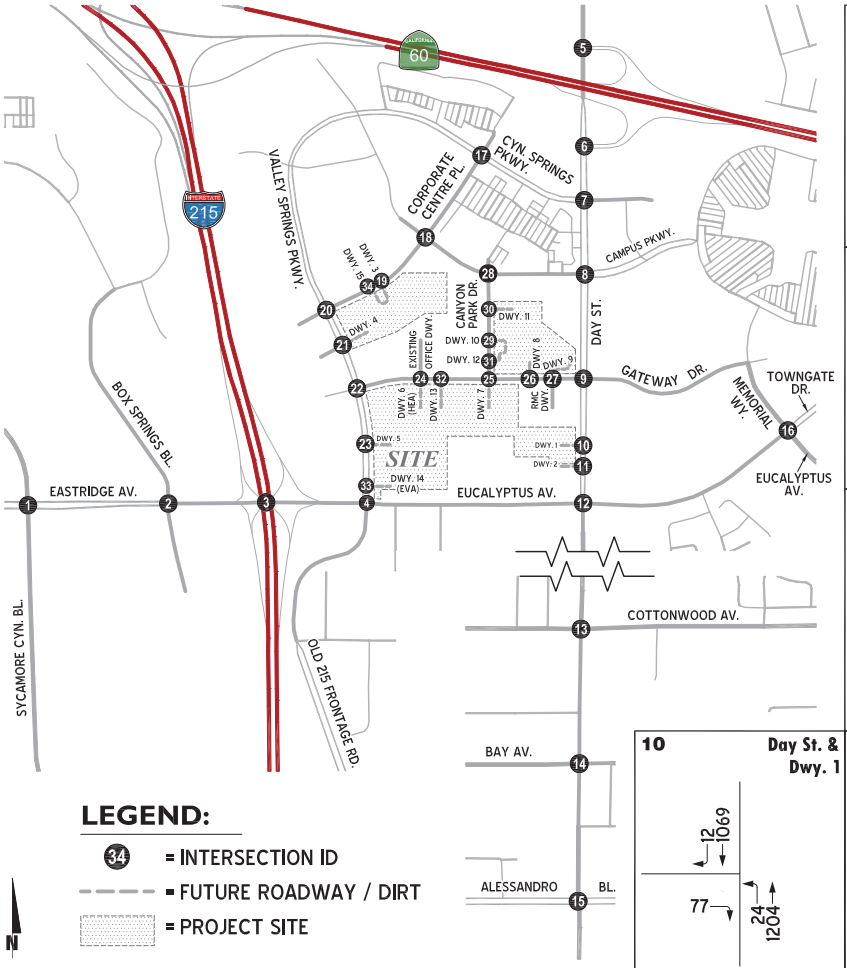
33 Valley Springs Pkwy. & Dwy. 14

601
EMERGENCY VEHICLE ACCESS
1253

34 Dwy. 15 & Corporate Centre Pl.

58
5
85
2

EXHIBIT 2: OPENING YEAR WITH PROJECT PM PEAK HOUR INTERSECTION VOLUMES



LEGEND:

- 34 = INTERSECTION ID
- = FUTURE ROADWAY / DIRT
- = PROJECT SITE

1 Sycamore Cyn. Bl. & Eastridge Av.

245	409	307	542
385		518	
412	834	258	287
397		147	

2 Box Springs Bl. & Eastridge Av.

41	134	210	1328
314		45	
13	1372	20	91
3		39	

3 I-215 Ramps & Eucalyptus Av.

343	795	577	1079
		945	
189	1356	162	725
180			

4 Valley Springs Pkwy. & Eucalyptus Av.

1369	260	89	1126
143		42	
902	1678	106	181
297		52	

5 Day St. & SR-60 WB Ramps

744	83	157	672
		965	674

6 Day St. & SR-60 EB Ramps

1244	171	318	788
		1320	1065

7 Day St. & Cyn. Springs Pkwy.

566	1070	247	79
225		52	
730	133	231	1408
177		65	

8 Day St. & Campus Pkwy.

67	960	269	211
278		93	
214	108	212	1221
191		102	

9 Day St. & Gateway Dr.

169	725	200	121
223		129	
404	141	120	742
187		130	

10 Day St. & Dwy. 1

12	1069		
		24	1204
77			

11 Day St. & Dwy. 2

5	1141		
		2	1214
13	36		

12 Day St. & Eucalyptus Av.

333	578	165	833
225		255	
300	1303	103	527
217		368	

13 Day St. & Cottonwood Av.

24	607	265	154
272		146	
26	139	79	656
55		109	

14 Day St. & Bay Av.

19	766	26	24
35		10	
14	45	13	792
14		7	

15 Day St. & Alessandro Bl.

205	337	146	1312
223		102	
219	1890	156	447
101		159	

16 Memorial Wy. & Towngate Dr.

309	299	67	509
59		29	
457	664	410	293
612		22	

17 Corporate Centre Pl. & Cyn. Springs Pkwy.

39	62	108	496
182		48	
48	441	29	50
34		60	

18 Corporate Centre Pl. & Campus Pkwy.

31	95	63	158
47		78	
24	187	10	82
21		79	

19 Dwy. 3 & Corporate Centre Pl.

			195
164		3	8

20 Valley Springs Pkwy. & Corporate Centre Pl.

34	586	5	64
44		119	
36	46	202	623
121		76	

21 Valley Springs Pkwy. & Dwy. 4

17	805	4	0
4		13	
12	0	20	884
34		14	

22 Valley Springs Pkwy. & Gateway Dr.

802	50	95	548
(WEST LEG CLOSED)			
		0	823
		222	

23 Valley Springs Pkwy. & Dwy. 5

1325	24	57	446
		988	185

24 Dwy. 6 & Gateway Dr.

23	20	28	520
		3	
11	285	9	1
4		7	

25 Canyon Park Dr. - Dwy. 7 & Gateway Dr.

167	20	47	288
49		88	
38	376	23	46
9		212	

26 Dwy. 8 & Gateway Dr.

1	1	1	383
1			
671			

27 Dwy. 9 & Gateway Dr.

3	0	17	375
16		18	
3	663	6	0
6		53	

28 Canyon Park Dr. & Campus Pkwy.

16	40	49	233
38		109	
16	252	49	42
44		54	

29 Canyon Park Dr. & Dwy. 10

238		4	2
		131	

30 Canyon Park Dr. & Dwy. 11

236	10	9	2
		132	2

31 Canyon Park Dr. & Dwy. 12

236	4		
		131	2

32 Dwy. 13 & Gateway Dr.

		405	71
252	60	145	171

33 Valley Springs Pkwy. & Dwy. 14

1772			
		EMERGENCY VEHICLE ACCESS	
		1173	

34 Dwy. 15 & Corporate Centre Pl.

		189	9
164	3		

TABLE 1: INTERSECTION ANALYSIS FOR OPENING YEAR WITH PROJECT CONDITIONS

(Page 1 of 2)

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (Secs)		Level of Service[2]	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Sycamore Cyn. Bl. / Eastridge Av.	TS	2	2	1>	2	2	1>	2	3	1	2	2	1>	46.9	34.2	D	C
2	Box Springs Bl. / Eastridge Av.	TS	1	1	1	1	2	0	1	2	1	1	2	0	46.8	46.8	D	D
3	I-215 NB & SB Ramps / Eucalyptus Av.	TS	2	0	0	2	0	0	1	2	0	2	2	0	37.3	53.6	D	D
	➢ I-215 SB Ramps / Eucalyptus Av.																	
	- Without Improvements	CSS	0	0	0	0	0	1	0	3	0	0	2	0	**>80**	**45.9**	**F**	**E**
	- With Improvements	**TS**	0	0	0	0	0	1	0	3	0	0	2	0	15.0	15.6	B	B
	➢ I-215 NB Ramps / Eucalyptus Av.	TS	0	0	2	0	0	0	0	2	0	0	4	1>>	0.4	1.2	A	A
4	Valley Springs Pkwy. / Eucalyptus Av.																	
	- Without Improvements	TS	1	2	d	1	1	2	2	2	1	1	2	1	**>100**	**>100**	**F**	**F**
	- With Improvements	TS	**2**	2	**0**	1	1	**2>**	2	2	1	1	2	1	54.2	48.8	D	D
5	Day St. / SR-60 WB Ramps	TS	0	2	1>	1	2	0	0	0	0	2	0	1>	21.0	12.8	C	B
6	Day St. / SR-60 EB Ramps	TS	0	2	1>	1	3	0	0	0	0	2	0	1>	19.9	16.3	B	B
7	Day St. / Cyn. Springs Pkwy.	TS	1	3	0	1	3.5	1.5>	2	1	1	1	1	1	20.8	43.4	C	D
8	Day St. / Campus Pkwy.	TS	2	3	d	2	3	1>	2	1	d	1	2	1	18.5	28.8	B	C
9	Day St. / Gateway Dr.	TS	1	3	0	2	3	0	1	2	0	1	2	0	22.1	36.0	C	D
10	Day St. / Dwy. 1	**CSS**	**1**	2	0	0	3	0	0	0	**1**	0	0	0	12.3	17.2	B	C
11	Day St. / Dwy. 2	**CSS**	1	2	0	0	3	0	0	1!	0	0	0	0	14.2	22.2	B	C
12	Day St. / Eucalyptus Av.																	
	- Without Improvements	TS	1	2	d	1	2	1>	1	2	d	1	2	1	43.9	**64.2**	D	**E**
	- With Improvements	TS	1	2	**1>**	1	2	1>	1	2	d	1	2	1	43.3	52.6	D	D
13	Day St. / Cottonwood Av.																	
	- Without Improvements	TS	1	1	0	1	1	0	1	1	0	1	1	1	51.0	**73.7**	D	**E**
	- With Improvements	TS	1	1	**1**	1	1	0	1	1	0	1	1	1	42.3	53.8	D	D
14	Day St. / Bay Av.																	
	- Without Improvements	AWS	0	1!	0	0	1!	0	0.5	0.5	d	0.5	0.5	d	**54.1**	**54.4**	**F**	**F**
	- With Improvements	AWS	0	**2**	0	0	**2**	0	0.5	0.5	d	0.5	0.5	d	25.1	28.6	D	D
15	Day St. / Alessandro Bl.																	
	- Without Improvements	TS	1	1	d	1	1	0	1	3	0	1	2	1	**62.5**	**69.3**	**E**	**E**
	- With Improvements	TS	1	**2**	0	1	1	**1**	**2**	3	0	1	2	1	52.1	52.7	D	D
16	Memorial Wy. / Towngate Dr.[4]																	
	- Without Improvements	TS	1	2	0	1	2	0	1	2	d	1	2	d	**64.8**	**73.7**	**E**	**E**
	- With Improvements	TS	1	2	0	1	**1**	**1>**	1	2	d	1	2	d	47.3	54.6	D	D
17	Corporate Ctr. Pl. / Cyn. Springs Pkwy.	TS	1	2	0	1	1	0	1	3	0	1	3	0	40.1	35.8	D	D
18	Corporate Ctre Pl. / Campus Pkwy.	AWS	1	2	0	1	2	0	1	2	0	1	2	0	8.3	10.5	A	B
19	Dwy. 3 / Corporate Ctr. Pl.	**CSS**	**1**	0	**1**	0	0	0	0	2	0	0	2	0	9.4	10.1	A	B
20	Valley Springs Pkwy. / Corporate Ctr. Pl.	TS	1	3	0	1	3	0	1	1	0	1	2	d	18.0	27.4	B	C
21	Valley Springs Pkwy. / Dwy. 4	CSS	0	3	0	1	3	0	0	1!	0	0	**1!**	0	18.7	27.4	C	D

TABLE 1: INTERSECTION ANALYSIS FOR OPENING YEAR WITH PROJECT CONDITIONS

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (Secs)		Level of Service[2]	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
22	Valley Springs Pkwy. / Gateway Dr.	TS	1	3	0	1	3	0	0	0	0	1	0	1	19.2	23.7	B	C
23	Valley Springs Pkwy. / Dwy. 5	**TS**	1	3	0	1	3	0	0	0	0	**1**	0	**1**	7.4	16.4	A	B
24	Dwy. 6 / Gateway Dr.	CSS	0	**1!**	0	0	1!	0	1	2	0	1	2	0	13.1	18.9	B	C
25	Canyon Park Dr. - Dwy. 7 / Gateway Dr.	**TS**	**1**	**1**	**1**	1	**1**	1	1	2	0	**1**	2	0	24.1	22.1	C	C
26	Dwy. 8 / Gateway Dr.	**CSS**	0	0	0	0	**1!**	0	1	2	0	0	2	0	8.5	11.3	A	B
27	Dwy. 9 / Gateway Dr.	CSS	0	1!	0	0	**1!**	0	1	2	0	1	2	0	21.7	18.7	C	C
28	Canyon Park Dr. / Campus Pkwy.	AWS	1	2	0	0.5	0.5	d	1	2	0	1	2	0	8.6	10.9	A	B
29	Canyon Park Dr. / Dwy. 10	**CSS**	0	2	0	0	2	0	0	0	0	0	**1!**	0	9.0	9.2	A	A
30	Canyon Park Dr. / Dwy. 11	**CSS**	0	2	0	1	2	0	0	0	0	0	**1!**	0	8.9	9.0	A	A
31	Canyon Park Dr. / Dwy. 12	UNC	0	2	0	1	2	0	0	0	0	0	0	0	7.5	7.5	A	A
32	Dwy. 13 / Gateway Dr.	**CSS**	0	**1!**	0	0	0	0	0	2	0	1	2	0	12.3	18.0	B	C
33	Valley Springs Pkwy. / Dwy. 14	**CSY**	EMERGENCY VEHICLE ACCESS ONLY												N/A	N/A	N/A	N/A
34	Dwy. 15 / Corporate Centre Pl.	UNC	0	0	0	0	0	0	0	2	0	1	2	0	7.4	7.6	A	A

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; > = Right-Turn Overlap Phasing; >> = Free-Right Turn Lane; d= Defacto Right Turn Lane; **1** = Improvement

[2] Per the 2010 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. Delay and level of service is calculated using Synchro 9.0 analysis software.

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[3] TS = Traffic Signal; CSY = Cross-street Yield (implied); CSS = Cross-street Stop; AWS = All-Way Stop; UNC = Uncontrolled (Inbound Driveway)

[4] Lane configuration includes recently implemented "road diet" on Towngate - Eucalyptus Avenue. The roadway, through striping modification, was reduced from six to four travel lanes and the extra width was reallocated for buffered bike lanes.

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TABLE 2: INTERSECTION ANALYSIS FOR GENERAL PLAN BUILDOUT WITH PROJECT CONDITIONS

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (Secs)		Level of Service[2]	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
10	Day St. / Dwy. 1	**CSS**	**1**	2	0	0	3	0	0	0	**1**	0	0	0	12.3	17.2	B	C
11	Day St. / Dwy. 2	**CSS**	1	2	0	0	3	0	0	1!	0	0	0	0	14.2	22.2	B	C
12	Day St. / Eucalyptus Av.																	
	- Without Improvements	TS	1	2	d	1	2	1>	1	2	d	1	2	1	47.4	**69.7**	D	**E**
	- With Improvements	TS	1	2	**1>**	1	2	1>	1	2	d	1	2	1	46.3	53.4	D	D

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; > = Right-Turn Overlap Phasing; >> = Free-Right Turn Lane; d= Defacto Right Turn Lane; **1** = Improvement

[2] Per the 2010 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. Delay and level of service is calculated using Synchro 8.0 analysis software.

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[3] TS = Traffic Signal; CSS = Cross-street Stop

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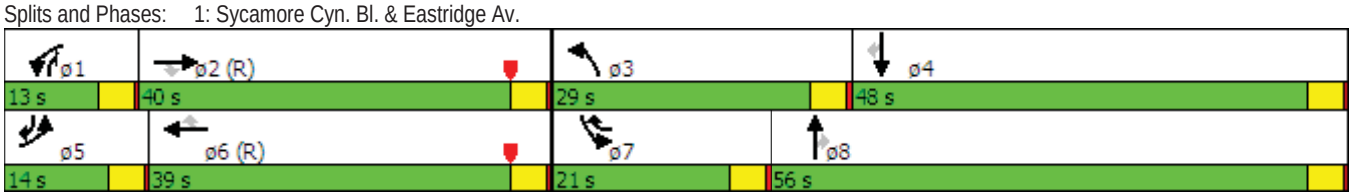
ATTACHMENT 1

OPENING YEAR WITH PROJECT CONDITIONS
INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	209	433	191	121	713	499	421	1198	184	147	198	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		150	310		200	360		320	275		110
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	120			120			120			200		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		910			577			817			952	
Travel Time (s)		15.5			9.8			12.4			14.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	11.0	11.0	20.0	11.0	11.0	20.0	11.0
Total Split (s)	14.0	40.0	40.0	13.0	39.0	21.0	29.0	56.0	13.0	21.0	48.0	14.0
Total Split (%)	10.8%	30.8%	30.8%	10.0%	30.0%	16.2%	22.3%	43.1%	10.0%	16.2%	36.9%	10.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	Max	None	None	Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Sycamore Cyn. Bl. & Eastridge Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	209	433	191	121	713	499	421	1198	184	147	198	307
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	230	476	0	133	784	548	463	1316	202	162	218	337
Adj No. of Lanes	2	3	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	265	1684	524	184	1089	588	529	1516	763	219	1198	658
Arrive On Green	0.08	0.33	0.00	0.05	0.31	0.31	0.15	0.43	0.43	0.06	0.34	0.34
Sat Flow, veh/h	3442	5085	1583	3442	3539	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	230	476	0	133	784	548	463	1316	202	162	218	337
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1770	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	8.6	9.0	0.0	4.9	25.6	40.0	17.1	44.0	9.8	6.0	5.6	20.5
Cycle Q Clear(g_c), s	8.6	9.0	0.0	4.9	25.6	40.0	17.1	44.0	9.8	6.0	5.6	20.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	265	1684	524	184	1089	588	529	1516	763	219	1198	658
V/C Ratio(X)	0.87	0.28	0.00	0.72	0.72	0.93	0.88	0.87	0.26	0.74	0.18	0.51
Avail Cap(c_a), veh/h	265	1684	524	238	1089	588	662	1516	763	450	1198	658
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.4	32.1	0.0	60.6	40.0	39.3	53.8	33.8	20.0	59.8	30.3	28.2
Incr Delay (d2), s/veh	25.1	0.4	0.0	7.4	4.1	23.6	10.6	7.0	0.8	4.8	0.3	2.8
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	0.0
%ile BackOfQ(50%),veh/ln	5.0	4.3	0.0	2.6	13.1	22.7	8.9	22.9	4.5	3.0	2.8	9.5
LnGrp Delay(d),s/veh	84.4	32.5	0.0	67.9	44.1	62.8	64.4	40.8	20.8	64.6	30.6	31.1
LnGrp LOS	F	C		E	D	E	E	D	C	E	C	C
Approach Vol, veh/h		706			1465			1981			717	
Approach Delay, s/veh		49.4			53.3			44.3			38.5	
Approach LOS		D			D			D			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	11.0	47.1	24.0	48.0	14.0	44.0	12.3	59.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	36.0	25.0	44.0	10.0	35.0	17.0	52.0
Max Q Clear Time (g_c+I1), s	6.9	11.0	19.1	22.5	10.6	42.0	8.0	46.0
Green Ext Time (p_c), s	0.1	12.0	0.9	12.9	0.0	0.0	0.3	4.8

Intersection Summary	
HCM 2010 Ctrl Delay	46.9
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	653	17	66	1387	551	11	120	64	157	74	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	90		80	150		0	75		160	90		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	60			60			60			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		760			700			315			411	
Travel Time (s)		13.0			11.9			7.2			9.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			
Detector Phase	5	2	2	1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0		11.0	20.0	20.0	11.0	20.0	
Total Split (s)	11.0	77.0	77.0	16.0	82.0		11.0	20.0	20.0	17.0	26.0	
Total Split (%)	8.5%	59.2%	59.2%	12.3%	63.1%		8.5%	15.4%	15.4%	13.1%	20.0%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	
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)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
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	C-Max	C-Max	None	C-Max		None	Max	Max	None	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 18 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	

Splits and Phases: 2: Box Springs Bl. & Eastridge Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	67	653	17	66	1387	551	11	120	64	157	74	4
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	74	718	19	73	1524	605	12	132	70	173	81	4
Adj No. of Lanes	1	2	1	1	2	0	1	1	1	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	2129	953	93	1519	565	34	229	195	177	701	34
Arrive On Green	0.05	0.60	0.60	0.07	0.80	0.80	0.02	0.12	0.12	0.10	0.20	0.20
Sat Flow, veh/h	1774	3539	1583	1774	2526	940	1774	1863	1583	1774	3434	168
Grp Volume(v), veh/h	74	718	19	73	1037	1092	12	132	70	173	41	44
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1697	1774	1863	1583	1774	1770	1833
Q Serve(g_s), s	5.4	13.2	0.6	5.3	69.3	78.1	0.9	8.7	5.3	12.6	2.5	2.5
Cycle Q Clear(g_c), s	5.4	13.2	0.6	5.3	69.3	78.1	0.9	8.7	5.3	12.6	2.5	2.5
Prop In Lane	1.00		1.00	1.00		0.55	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	94	2129	953	93	1064	1020	34	229	195	177	361	374
V/C Ratio(X)	0.79	0.34	0.02	0.79	0.98	1.07	0.36	0.58	0.36	0.98	0.11	0.12
Avail Cap(c_a), veh/h	96	2129	953	164	1064	1020	96	229	195	177	361	374
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	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	60.9	12.9	10.4	59.8	12.1	13.0	63.0	53.8	52.3	58.3	42.2	42.2
Incr Delay (d2), s/veh	34.5	0.4	0.0	13.6	22.2	49.0	6.3	10.1	5.1	60.1	0.6	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	3.5	6.5	0.3	2.9	39.0	49.2	0.5	5.1	2.6	9.2	1.3	1.3
LnGrp Delay(d),s/veh	95.4	13.4	10.5	73.4	34.3	62.0	69.3	63.9	57.4	118.4	42.8	42.8
LnGrp LOS	F	B	B	E	C	F	E	E	E	F	D	D
Approach Vol, veh/h		811			2202			214			258	
Approach Delay, s/veh		20.8			49.4			62.1			93.5	
Approach LOS		C			D			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	10.8	82.2	6.5	30.5	10.9	82.1	17.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	73.0	7.0	22.0	7.0	78.0	13.0	16.0
Max Q Clear Time (g_c+I1), s	7.3	15.2	2.9	4.5	7.4	80.1	14.6	10.7
Green Ext Time (p_c), s	0.0	44.3	0.0	1.3	0.0	0.0	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	46.8
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	698	0	486	1419	0	346	0	0	328	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	260		0	275		0	0		0	0		0
Storage Lanes	0		0	0		0	2		0	2		0
Taper Length (ft)	90			190			60			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		241			359			784			672	
Travel Time (s)		4.1			6.1			15.3			13.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Prot			Prot		
Protected Phases	5	2		1	6		3			7		
Permitted Phases												
Detector Phase	5	2		1	6		3			7		
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0			7.0		
Minimum Split (s)	11.0	20.0		11.0	20.0		11.0			11.0		
Total Split (s)	18.0	65.0		35.0	82.0		30.0			30.0		
Total Split (%)	13.8%	50.0%		26.9%	63.1%		23.1%			23.1%		
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5			3.5		
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5			0.5		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0			0.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0			4.0		
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None			None		

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 45 (35%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: I-215 SB/NB Ramps & Eastridge Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	89	698	0	486	1419	0	346	0	0	328	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	0	1863	1863	0	1863	0	0	1863	0	0
Adj Flow Rate, veh/h	99	776	0	540	1577	0	384	0	0	364	0	0
Adj No. of Lanes	1	2	0	2	2	0	2	0	0	2	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	0	2	2	0	2	0	0	2	0	0
Cap, veh/h	123	2108	0	620	2500	0	454	0	0	454	0	0
Arrive On Green	0.05	0.40	0.00	0.12	0.47	0.00	0.13	0.00	0.00	0.13	0.00	0.00
Sat Flow, veh/h	1774	3632	0	3442	3632	0	3442	384		3442	364	
Grp Volume(v), veh/h	99	776	0	540	1577	0	384	61.2		364	58.8	
Grp Sat Flow(s),veh/h/ln	1774	1770	0	1721	1770	0	1721	E		1721	E	
Q Serve(g_s), s	7.2	20.1	0.0	20.0	43.5	0.0	14.2			13.3		
Cycle Q Clear(g_c), s	7.2	20.1	0.0	20.0	43.5	0.0	14.2			13.3		
Prop In Lane	1.00		0.00	1.00		0.00	1.00			1.00		
Lane Grp Cap(c), veh/h	123	2108	0	620	2500	0	454			454		
V/C Ratio(X)	0.81	0.37	0.00	0.87	0.63	0.00	0.85			0.80		
Avail Cap(c_a), veh/h	191	2108	0	821	2500	0	688			688		
HCM Platoon Ratio	0.67	0.67	1.00	0.67	0.67	1.00	1.00			1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.95	0.95	0.00	1.00			1.00		
Uniform Delay (d), s/veh	61.1	21.8	0.0	55.7	21.5	0.0	55.1			54.8		
Incr Delay (d2), s/veh	12.9	0.5	0.0	7.6	1.2	0.0	6.1			4.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0		
%ile BackOfQ(50%),veh/ln	4.0	10.0	0.0	10.2	21.7	0.0	7.1			6.6		
LnGrp Delay(d),s/veh	74.1	22.3	0.0	63.3	22.7	0.0	61.2			58.8		
LnGrp LOS	E	C		E	C		E			E		
Approach Vol, veh/h		875			2117							
Approach Delay, s/veh		28.2			33.0							
Approach LOS		C			C							

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3		5	6	7	
Phs Duration (G+Y+Rc), s	27.4	81.4	21.2		13.0	95.8	21.2	
Change Period (Y+Rc), s	4.0	4.0	4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s	31.0	61.0	26.0		14.0	78.0	26.0	
Max Q Clear Time (g_c+I1), s	22.0	22.1	16.2		9.2	45.5	15.3	
Green Ext Time (p_c), s	1.4	25.4	1.0		0.1	22.5	1.0	

Intersection Summary	
HCM 2010 Ctrl Delay	37.3
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	787	86	0	1765	0	0	0	0	0	0	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	60			60			60			60		
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		700			241			458			364	
Travel Time (s)		11.9			4.1			8.9			7.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	10.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	787	86	0	1765	0	0	0	0	0	0	240
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	1082	515	456	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	874	96	0	1961	0	0	0	0	0	0	267

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	1961	0	-	874	0	0	2311	2835	981
Stage 1	-	-	-	-	-	-	1961	1961	-
Stage 2	-	-	-	-	-	-	350	874	-
Critical Hdwy	4.14	-	-	5.34	-	-	6.29	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.04	5.54	-
Follow-up Hdwy	2.22	-	-	3.12	-	-	3.67	4.02	3.32
Pot Cap-1 Maneuver	293	-	0	450	-	-	45	17	~ 249
Stage 1	-	-	0	-	-	-	94	108	-
Stage 2	-	-	0	-	-	-	648	365	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	293	-	-	450	-	-	45	0	~ 249
Mov Cap-2 Maneuver	-	-	-	-	-	-	82	0	-
Stage 1	-	-	-	-	-	-	94	0	-
Stage 2	-	-	-	-	-	-	648	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	120.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	293	-	450	-	-	249
HCM Lane V/C Ratio	-	-	-	-	-	1.071
HCM Control Delay (s)	0	-	0	-	-	120.4
HCM Lane LOS	A	-	A	-	-	F
HCM 95th %tile Q(veh)	0	-	0	-	-	11.2

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	0	1765	0	0	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	60				60	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		30	
Link Distance (ft)		174	120		486	
Travel Time (s)		3.0	2.0		11.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Turn Type			NA			Prot
Protected Phases			6			7
Permitted Phases						
Detector Phase			6			7
Switch Phase						
Minimum Initial (s)			7.0			7.0
Minimum Split (s)			20.0			11.0
Total Split (s)			96.0			34.0
Total Split (%)			73.8%			26.2%
Yellow Time (s)			3.5			3.5
All-Red Time (s)			0.5			0.5
Lost Time Adjust (s)			0.0			0.0
Total Lost Time (s)			4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode			C-Max			None

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 108 (83%), Referenced to phase 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 31: Eastridge Av. & I-215 SB Ramps (W)

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	0	1765	0	0	240
Number			6	16	7	14
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)				1.00	1.00	1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln			1863	0	0	1863
Adj Flow Rate, veh/h			1961	0	0	267
Adj No. of Lanes			2	0	0	1
Peak Hour Factor			0.90	0.90	0.90	0.90
Percent Heavy Veh, %			2	0	0	2
Cap, veh/h			2505	0	0	0
Arrive On Green			0.71	0.00	0.00	0.00
Sat Flow, veh/h			3725	0	0	
Grp Volume(v), veh/h			1961	0	0.0	
Grp Sat Flow(s),veh/h/ln			1770	0		
Q Serve(g_s), s			47.2	0.0		
Cycle Q Clear(g_c), s			47.2	0.0		
Prop In Lane				0.00		
Lane Grp Cap(c), veh/h			2505	0		
V/C Ratio(X)			0.78	0.00		
Avail Cap(c_a), veh/h			2505	0		
HCM Platoon Ratio			1.00	1.00		
Upstream Filter(I)			1.00	0.00		
Uniform Delay (d), s/veh			12.5	0.0		
Incr Delay (d2), s/veh			2.5	0.0		
Initial Q Delay(d3),s/veh			0.0	0.0		
%ile BackOfQ(50%),veh/ln			23.5	0.0		
LnGrp Delay(d),s/veh			15.0	0.0		
LnGrp LOS			B			
Approach Vol, veh/h			1961			
Approach Delay, s/veh			15.0			
Approach LOS			B			

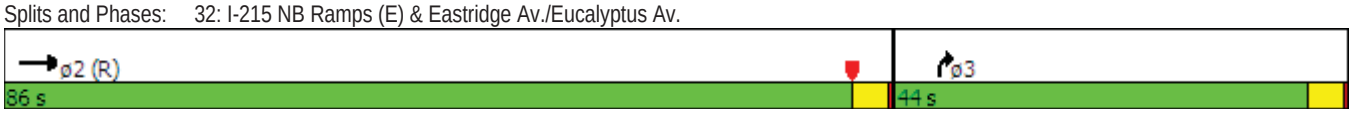
Timer	1	2	3	4	5	6	7	8
Assigned Phs						6		
Phs Duration (G+Y+Rc), s						96.0		
Change Period (Y+Rc), s						4.0		
Max Green Setting (Gmax), s						92.0		
Max Q Clear Time (g_c+I1), s						49.2		
Green Ext Time (p_c), s						24.2		

Intersection Summary	
HCM 2010 Ctrl Delay	15.0
HCM 2010 LOS	B

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1026	0	0	0	0	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			40	30	
Link Distance (ft)	100			131	592	
Travel Time (s)	2.3			2.2	13.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA					Prot
Protected Phases	2					3
Permitted Phases						
Detector Phase	2					3
Switch Phase						
Minimum Initial (s)	7.0					7.0
Minimum Split (s)	20.0					11.0
Total Split (s)	86.0					44.0
Total Split (%)	66.2%					33.8%
Yellow Time (s)	3.5					3.5
All-Red Time (s)	0.5					0.5
Lost Time Adjust (s)	0.0					0.0
Total Lost Time (s)	4.0					4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max					None

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

Splits and Phases: 32: I-215 NB Ramps (E) & Eastridge Av./Eucalyptus Av.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1026	0	0	0	0	421
Number	2	12			3	18
Initial Q (Qb), veh	0	0			0	0
Ped-Bike Adj(A_pbT)		1.00			1.00	1.00
Parking Bus, Adj	1.00	1.00			1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0			0	1863
Adj Flow Rate, veh/h	1140	0			0	468
Adj No. of Lanes	2	0			0	2
Peak Hour Factor	0.90	0.90			0.90	0.90
Percent Heavy Veh, %	2	0			0	2
Cap, veh/h	3430	0			0	0
Arrive On Green	0.97	0.00			0.00	0.00
Sat Flow, veh/h	3725	0			0	
Grp Volume(v), veh/h	1140	0			0.0	
Grp Sat Flow(s),veh/h/ln	1770	0				
Q Serve(g_s), s	1.9	0.0				
Cycle Q Clear(g_c), s	1.9	0.0				
Prop In Lane		0.00				
Lane Grp Cap(c), veh/h	3430	0				
V/C Ratio(X)	0.33	0.00				
Avail Cap(c_a), veh/h	3430	0				
HCM Platoon Ratio	1.00	1.00				
Upstream Filter(I)	1.00	0.00				
Uniform Delay (d), s/veh	0.1	0.0				
Incr Delay (d2), s/veh	0.3	0.0				
Initial Q Delay(d3),s/veh	0.0	0.0				
%ile BackOfQ(50%),veh/ln	0.9	0.0				
LnGrp Delay(d),s/veh	0.4	0.0				
LnGrp LOS	A					
Approach Vol, veh/h	1140					
Approach Delay, s/veh	0.4					
Approach LOS	A					

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2						
Phs Duration (G+Y+Rc), s		130.0						
Change Period (Y+Rc), s		4.0						
Max Green Setting (Gmax), s		82.0						
Max Q Clear Time (g_c+I1), s		3.9						
Green Ext Time (p_c), s		11.9						

Intersection Summary	
HCM 2010 Ctrl Delay	0.4
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	703	685	59	24	1367	101	418	449	136	38	52	512
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		360	100		30	150		50	140		0
Storage Lanes	2		1	1		1	1		1	1		2
Taper Length (ft)	200			80			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			40	
Link Distance (ft)		615			2104			825			560	
Travel Time (s)		10.5			35.9			18.8			9.5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	20.0
Total Split (s)	27.0	69.0	69.0	11.0	53.0	53.0	30.0	38.0	38.0	12.0	20.0	20.0
Total Split (%)	20.8%	53.1%	53.1%	8.5%	40.8%	40.8%	23.1%	29.2%	29.2%	9.2%	15.4%	15.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Valley Springs Pkwy. & Eucalyptus Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	703	685	59	24	1367	101	418	449	136	38	52	512
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	790	770	66	27	1536	113	470	504	153	43	58	575
Adj No. of Lanes	2	2	1	1	2	1	1	2	1	1	1	2
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	609	1841	824	59	1334	597	355	993	444	75	229	343
Arrive On Green	0.30	0.87	0.87	0.03	0.38	0.38	0.20	0.28	0.28	0.04	0.12	0.12
Sat Flow, veh/h	3442	3539	1583	1774	3539	1583	1774	3539	1583	1774	1863	2787
Grp Volume(v), veh/h	790	770	66	27	1536	113	470	504	153	43	58	575
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1770	1583	1774	1770	1583	1774	1863	1393
Q Serve(g_s), s	23.0	5.8	0.8	1.9	49.0	6.2	26.0	15.5	10.0	3.1	3.7	16.0
Cycle Q Clear(g_c), s	23.0	5.8	0.8	1.9	49.0	6.2	26.0	15.5	10.0	3.1	3.7	16.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	609	1841	824	59	1334	597	355	993	444	75	229	343
V/C Ratio(X)	1.30	0.42	0.08	0.45	1.15	0.19	1.32	0.51	0.34	0.57	0.25	1.68
Avail Cap(c_a), veh/h	609	1841	824	96	1334	597	355	993	444	109	229	343
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	0.42	0.42	0.42	1.00	1.00	1.00	0.99	0.99	0.99
Uniform Delay (d), s/veh	45.8	4.5	4.1	61.7	40.5	27.2	52.0	39.2	37.2	61.1	51.6	57.0
Incr Delay (d2), s/veh	144.1	0.6	0.2	2.3	72.2	0.3	164.5	1.9	2.1	6.6	2.6	316.8
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	0.0
%ile BackOfQ(50%),veh/ln	23.0	2.8	0.3	1.0	37.3	2.8	28.9	7.8	4.6	1.7	2.1	21.2
LnGrp Delay(d),s/veh	189.9	5.1	4.3	63.9	112.7	27.5	216.5	41.1	39.3	67.6	54.2	373.8
LnGrp LOS	F	A	A	E	F	C	F	D	D	E	D	F
Approach Vol, veh/h		1626			1676			1127			676	
Approach Delay, s/veh		94.8			106.2			114.0			326.9	
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	8.4	71.6	30.0	20.0	27.0	53.0	9.5	40.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	65.0	26.0	16.0	23.0	49.0	8.0	34.0
Max Q Clear Time (g_c+I1), s	3.9	7.8	28.0	18.0	25.0	51.0	5.1	17.5
Green Ext Time (p_c), s	0.0	32.5	0.0	0.0	0.0	0.0	0.0	6.3

Intersection Summary	
HCM 2010 Ctrl Delay	133.5
HCM 2010 LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	703	685	59	24	1367	101	418	449	136	38	52	512
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		360	100		30	150		50	140		0
Storage Lanes	2		1	1		1	2		0	1		2
Taper Length (ft)	200			80			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			40	
Link Distance (ft)		615			2104			825			560	
Travel Time (s)		10.5			35.9			18.8			9.5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases			2			6						4
Detector Phase	5	2	2	1	6	6	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0		11.0	11.0	11.0
Total Split (s)	31.0	79.0	79.0	11.0	59.0	59.0	26.0	27.0		13.0	14.0	31.0
Total Split (%)	23.8%	60.8%	60.8%	8.5%	45.4%	45.4%	20.0%	20.8%		10.0%	10.8%	23.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Valley Springs Pkwy. & Eucalyptus Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	703	685	59	24	1367	101	418	449	136	38	52	512
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	790	770	66	27	1536	113	470	504	153	43	58	575
Adj No. of Lanes	2	2	1	1	2	1	2	2	0	1	1	2
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	737	2179	975	59	1563	699	535	496	150	75	143	901
Arrive On Green	0.35	1.00	1.00	0.03	0.44	0.44	0.15	0.19	0.19	0.04	0.08	0.08
Sat Flow, veh/h	3548	3539	1583	1774	3539	1583	3548	2680	809	1774	1863	3167
Grp Volume(v), veh/h	790	770	66	27	1536	113	470	332	325	43	58	575
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1720	1774	1863	1583
Q Serve(g_s), s	27.0	0.0	0.0	1.9	55.7	5.6	16.9	24.1	24.1	3.1	3.9	10.0
Cycle Q Clear(g_c), s	27.0	0.0	0.0	1.9	55.7	5.6	16.9	24.1	24.1	3.1	3.9	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	737	2179	975	59	1563	699	535	328	318	75	143	901
V/C Ratio(X)	1.07	0.35	0.07	0.45	0.98	0.16	0.88	1.01	1.02	0.57	0.40	0.64
Avail Cap(c_a), veh/h	737	2179	975	96	1563	699	600	328	318	123	143	901
HCM Platoon Ratio	1.67	1.67	1.67	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	0.38	0.38	0.38	1.00	1.00	1.00	0.99	0.99	0.99
Uniform Delay (d), s/veh	42.5	0.0	0.0	61.7	35.8	21.8	54.0	53.0	53.0	61.1	57.2	24.0
Incr Delay (d2), s/veh	54.1	0.4	0.1	2.0	10.5	0.2	13.0	53.0	56.0	6.6	8.2	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.7	0.1	0.0	1.0	29.4	2.5	9.3	16.6	16.4	1.7	2.3	8.7
LnGrp Delay(d),s/veh	96.6	0.4	0.1	63.7	46.3	22.0	67.1	106.1	109.0	67.6	65.3	27.4
LnGrp LOS	F	A	A	E	D	C	E	F	F	E	E	C
Approach Vol, veh/h		1626			1676			1127			676	
Approach Delay, s/veh		47.1			44.9			90.6			33.2	
Approach LOS		D			D			F			C	

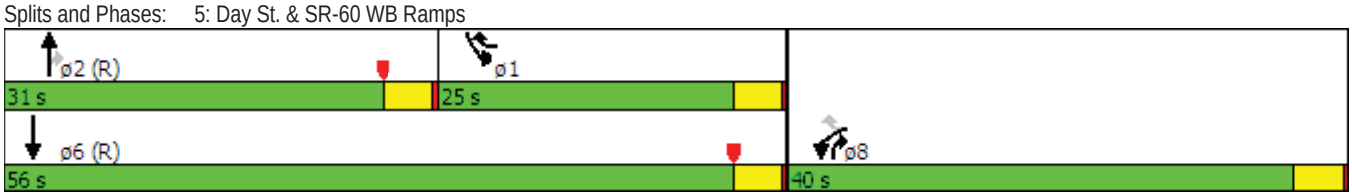
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	84.1	23.6	14.0	31.0	61.4	9.5	28.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	75.0	22.0	10.0	27.0	55.0	9.0	23.0
Max Q Clear Time (g_c+I1), s	3.9	2.0	18.9	12.0	29.0	57.7	5.1	26.1
Green Ext Time (p_c), s	0.0	36.6	0.7	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.2
HCM 2010 LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	630	254	421	283	137	616
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		175	200	
Storage Lanes	2	1		1	1	
Taper Length (ft)	60				80	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	35		40			40
Link Distance (ft)	307		957			795
Travel Time (s)	6.0		16.3			13.6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)						
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	11.0	20.0	20.0	11.0	20.0
Total Split (s)	40.0	25.0	31.0	40.0	25.0	56.0
Total Split (%)	41.7%	26.0%	32.3%	41.7%	26.0%	58.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag		Lag	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	C-Max	None	None	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 94 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 5: Day St. & SR-60 WB Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	630	254	421	283	137	616
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	649	262	434	292	141	635
Adj No. of Lanes	2	1	2	1	1	2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	800	940	995	813	641	2422
Arrive On Green	0.23	0.23	0.28	0.28	0.36	0.68
Sat Flow, veh/h	3442	1583	3632	1583	1774	3632
Grp Volume(v), veh/h	649	262	434	292	141	635
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1774	1770
Q Serve(g_s), s	17.1	0.0	9.6	10.6	5.3	6.6
Cycle Q Clear(g_c), s	17.1	0.0	9.6	10.6	5.3	6.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	800	940	995	813	641	2422
V/C Ratio(X)	0.81	0.28	0.44	0.36	0.22	0.26
Avail Cap(c_a), veh/h	1291	1166	995	813	641	2422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.93	0.93	1.00	1.00
Uniform Delay (d), s/veh	34.9	9.5	28.3	13.9	21.3	5.8
Incr Delay (d2), s/veh	2.1	0.2	1.3	1.1	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	3.3	4.9	7.1	2.6	3.3
LnGrp Delay(d),s/veh	36.9	9.7	29.6	15.1	21.4	6.1
LnGrp LOS	D	A	C	B	C	A
Approach Vol, veh/h	911		726			776
Approach Delay, s/veh	29.1		23.7			8.9
Approach LOS	C		C			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	38.7	31.0				69.7		26.3
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	21.0	27.0				52.0		36.0
Max Q Clear Time (g_c+I1), s	7.3	12.6				8.6		19.1
Green Ext Time (p_c), s	3.8	3.2				5.0		3.2

Intersection Summary	
HCM 2010 Ctrl Delay	21.0
HCM 2010 LOS	C

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	582	89	615	516	118	1127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		0	425	
Storage Lanes	2	0		1	1	
Taper Length (ft)	60				60	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	35		40			40
Link Distance (ft)	263		524			957
Travel Time (s)	5.1		8.9			16.3
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)						
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	11.0	20.0	20.0	11.0	20.0
Total Split (s)	37.0	24.0	35.0	37.0	24.0	59.0
Total Split (%)	38.5%	25.0%	36.5%	38.5%	25.0%	61.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag		Lag	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	C-Max	None	None	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 24 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 6: Day St. & SR-60 EB Ramps

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	582	89	615	516	118	1127
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	594	91	628	527	120	1150
Adj No. of Lanes	2	1	2	1	1	3
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	721	874	1143	843	608	3597
Arrive On Green	0.21	0.21	0.11	0.11	0.69	1.00
Sat Flow, veh/h	3442	1583	3632	1583	1774	5253
Grp Volume(v), veh/h	594	91	628	527	120	1150
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1774	1695
Q Serve(g_s), s	15.8	0.0	16.2	22.2	2.4	0.0
Cycle Q Clear(g_c), s	15.8	0.0	16.2	22.2	2.4	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	721	874	1143	843	608	3597
V/C Ratio(X)	0.82	0.10	0.55	0.63	0.20	0.32
Avail Cap(c_a), veh/h	1183	1087	1143	843	608	3597
HCM Platoon Ratio	1.00	1.00	0.33	0.33	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.89	0.89	0.85	0.85
Uniform Delay (d), s/veh	36.3	10.2	36.3	20.7	10.3	0.0
Incr Delay (d2), s/veh	2.5	0.1	1.7	3.1	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	1.1	8.2	14.7	1.2	0.1
LnGrp Delay(d),s/veh	38.8	10.3	37.9	23.8	10.4	0.2
LnGrp LOS	D	B	D	C	B	A
Approach Vol, veh/h	685		1155			1270
Approach Delay, s/veh	35.0		31.5			1.2
Approach LOS	C		C			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	36.9	35.0				71.9		24.1
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	20.0	31.0				55.0		33.0
Max Q Clear Time (g_c+I1), s	4.4	24.2				2.0		17.8
Green Ext Time (p_c), s	7.2	3.3				10.7		2.3

Intersection Summary	
HCM 2010 Ctrl Delay	19.9
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	316	34	38	34	36	114	71	701	58	178	1126	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		0	145		0	165		0	170		200
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	95			100			120			80		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			35			40			40	
Link Distance (ft)		1120			404			728			524	
Travel Time (s)		19.1			7.9			12.4			8.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												20%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0		11.0	20.0	11.0
Total Split (s)	20.0	30.0	30.0	11.0	21.0	21.0	15.0	31.0		24.0	40.0	20.0
Total Split (%)	20.8%	31.3%	31.3%	11.5%	21.9%	21.9%	15.6%	32.3%		25.0%	41.7%	20.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead		Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 65 (68%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	

Splits and Phases: 7: Day St. & Cyn. Springs Pkwy.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	316	34	38	34	36	114	71	701	58	178	1126	320
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	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	326	35	39	35	37	118	73	723	60	184	1209	298
Adj No. of Lanes	2	1	1	1	1	1	1	3	0	1	4	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	408	274	233	78	136	115	111	1347	111	640	4318	1105
Arrive On Green	0.12	0.15	0.15	0.04	0.07	0.07	0.02	0.09	0.09	0.72	1.00	1.00
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	1774	4788	395	1774	7451	1583
Grp Volume(v), veh/h	326	35	39	35	37	118	73	511	272	184	1209	298
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1774	1695	1793	1774	1863	1583
Q Serve(g_s), s	8.9	1.6	2.1	1.8	1.8	3.6	3.9	13.8	13.9	3.5	0.0	0.0
Cycle Q Clear(g_c), s	8.9	1.6	2.1	1.8	1.8	3.6	3.9	13.8	13.9	3.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	408	274	233	78	136	115	111	953	504	640	4318	1105
V/C Ratio(X)	0.80	0.13	0.17	0.45	0.27	1.02	0.66	0.54	0.54	0.29	0.28	0.27
Avail Cap(c_a), veh/h	574	504	429	129	330	280	203	953	504	640	4318	1105
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	0.92	0.92	0.92	1.00	1.00	1.00	0.98	0.98	0.98	0.89	0.89	0.89
Uniform Delay (d), s/veh	41.2	35.6	35.8	44.7	42.1	12.1	46.0	37.6	37.6	9.0	0.0	0.0
Incr Delay (d2), s/veh	4.9	0.2	0.3	3.9	1.1	44.9	6.4	2.1	4.0	0.2	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.8	0.9	1.0	1.0	3.0	2.1	6.8	7.5	1.7	0.0	0.2
LnGrp Delay(d),s/veh	46.1	35.8	36.1	48.7	43.2	57.3	52.4	39.7	41.7	9.3	0.1	0.5
LnGrp LOS	D	D	D	D	D	F	D	D	D	A	A	A
Approach Vol, veh/h		400			190			856			1691	
Approach Delay, s/veh		44.3			52.9			41.4			1.2	
Approach LOS		D			D			D			A	

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	38.6	31.0	8.2	18.1	10.0	59.6	15.4	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	20.0	27.0	7.0	26.0	11.0	36.0	16.0	17.0
Max Q Clear Time (g_c+I1), s	5.5	15.9	3.8	4.1	5.9	2.0	10.9	5.6
Green Ext Time (p_c), s	8.3	3.6	0.0	0.8	0.1	12.6	0.5	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	20.8
HCM 2010 LOS	C

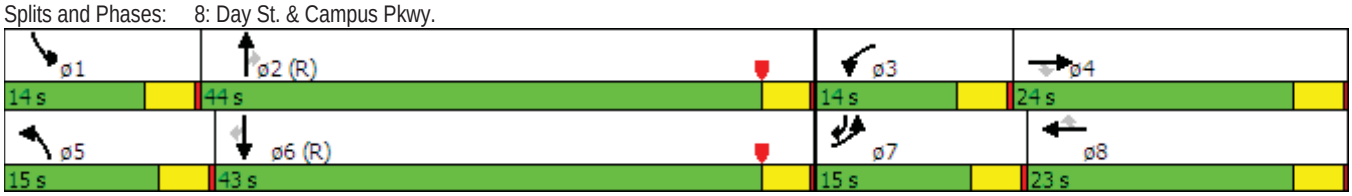
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	29	56	22	73	70	127	700	42	67	950	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		50	200		0	130		50	190		0
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	60			120			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			35			40			40	
Link Distance (ft)		938			519			1025			728	
Travel Time (s)		16.0			10.1			17.5			12.4	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	11.0
Total Split (s)	15.0	24.0	24.0	14.0	23.0	23.0	15.0	44.0	44.0	14.0	43.0	15.0
Total Split (%)	15.6%	25.0%	25.0%	14.6%	24.0%	24.0%	15.6%	45.8%	45.8%	14.6%	44.8%	15.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 22 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	

Splits and Phases: 8: Day St. & Campus Pkwy.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	58	29	56	22	73	70	127	700	42	67	950	132
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	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	59	29	57	22	74	71	128	707	42	68	960	133
Adj No. of Lanes	2	1	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	183	156	57	258	115	243	3263	1016	210	3215	1092
Arrive On Green	0.06	0.10	0.10	0.03	0.07	0.07	0.14	1.00	1.00	0.02	0.21	0.21
Sat Flow, veh/h	3442	1863	1583	1774	3539	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	59	29	57	22	74	71	128	707	42	68	960	133
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1770	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	1.6	1.4	3.2	1.2	1.9	4.2	3.3	0.0	0.0	1.9	15.3	5.5
Cycle Q Clear(g_c), s	1.6	1.4	3.2	1.2	1.9	4.2	3.3	0.0	0.0	1.9	15.3	5.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	199	183	156	57	258	115	243	3263	1016	210	3215	1092
V/C Ratio(X)	0.30	0.16	0.37	0.38	0.29	0.62	0.53	0.22	0.04	0.32	0.30	0.12
Avail Cap(c_a), veh/h	394	388	330	185	700	313	394	3263	1016	359	3215	1092
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97	0.93	0.93	0.93
Uniform Delay (d), s/veh	43.4	39.6	40.5	45.5	42.1	43.2	39.7	0.0	0.0	45.1	20.0	11.8
Incr Delay (d2), s/veh	0.8	0.4	1.4	4.1	0.6	5.2	1.7	0.1	0.1	0.8	0.2	0.2
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	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.7	1.5	0.6	0.9	2.0	1.6	0.0	0.0	0.9	7.3	2.5
LnGrp Delay(d),s/veh	44.2	40.0	41.9	49.7	42.8	48.4	41.5	0.1	0.1	45.9	20.2	12.0
LnGrp LOS	D	D	D	D	D	D	D	A	A	D	C	B
Approach Vol, veh/h		145			167			877			1161	
Approach Delay, s/veh		42.5			46.1			6.2			20.8	
Approach LOS		D			D			A			C	

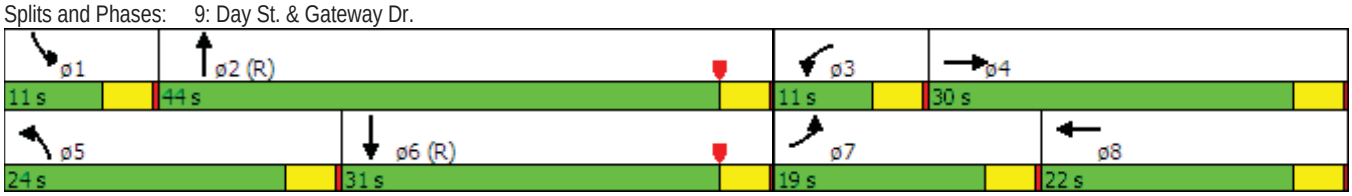
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	65.6	7.1	13.4	10.8	64.7	9.5	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	40.0	10.0	20.0	11.0	39.0	11.0	19.0
Max Q Clear Time (g_c+I1), s	3.9	2.0	3.2	5.2	5.3	17.3	3.6	6.2
Green Ext Time (p_c), s	0.1	16.3	0.0	0.8	0.2	12.3	0.1	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	18.5
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	45	65	37	111	109	174	597	52	86	510	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	100		0	190		400	260		0
Storage Lanes	1		0	1		0	1		1	2		0
Taper Length (ft)	0			120			60			165		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			35			40			40	
Link Distance (ft)		318			585			592			1025	
Travel Time (s)		5.4			11.4			10.1			17.5	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	20.0		11.0	20.0		11.0	20.0		11.0	20.0	
Total Split (s)	19.0	30.0		11.0	22.0		24.0	44.0		11.0	31.0	
Total Split (%)	19.8%	31.3%		11.5%	22.9%		25.0%	45.8%		11.5%	32.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	

Splits and Phases: 9: Day St. & Gateway Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	130	45	65	37	111	109	174	597	52	86	510	325
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	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	131	45	66	37	112	110	176	603	53	87	515	328
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	2	3	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	260	233	81	179	160	215	2738	239	226	1761	822
Arrive On Green	0.09	0.15	0.15	0.05	0.10	0.10	0.04	0.19	0.19	0.13	1.00	1.00
Sat Flow, veh/h	1774	1770	1583	1774	1770	1583	1774	4764	415	3442	3390	1583
Grp Volume(v), veh/h	131	45	66	37	112	110	176	428	228	87	515	328
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1695	1789	1721	1695	1583
Q Serve(g_s), s	7.0	2.1	3.6	2.0	5.8	6.4	9.5	10.2	10.4	2.2	0.0	0.0
Cycle Q Clear(g_c), s	7.0	2.1	3.6	2.0	5.8	6.4	9.5	10.2	10.4	2.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	163	260	233	81	179	160	215	1948	1028	226	1761	822
V/C Ratio(X)	0.80	0.17	0.28	0.46	0.63	0.69	0.82	0.22	0.22	0.38	0.29	0.40
Avail Cap(c_a), veh/h	277	479	429	129	332	297	370	1948	1028	251	1761	822
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	42.7	35.8	36.4	44.6	41.4	41.7	45.0	20.7	20.7	39.9	0.0	0.0
Incr Delay (d2), s/veh	8.9	0.3	0.7	4.0	3.6	5.2	7.5	0.3	0.5	1.0	0.4	1.4
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	0.0
%ile BackOfQ(50%),veh/ln	3.8	1.1	1.6	1.0	3.0	3.0	5.1	4.9	5.3	1.1	0.1	0.3
LnGrp Delay(d),s/veh	51.6	36.1	37.1	48.6	45.0	46.8	52.6	21.0	21.2	40.9	0.4	1.4
LnGrp LOS	D	D	D	D	D	D	D	C	C	D	A	A
Approach Vol, veh/h		242			259			832			930	
Approach Delay, s/veh		44.8			46.3			27.7			4.5	
Approach LOS		D			D			C			A	

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	10.3	59.2	8.4	18.1	15.6	53.9	12.8	13.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	40.0	7.0	26.0	20.0	27.0	15.0	18.0
Max Q Clear Time (g_c+I1), s	4.2	12.4	4.0	5.6	11.5	2.0	9.0	8.4
Green Ext Time (p_c), s	0.0	11.1	0.0	1.8	0.3	10.7	0.1	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	22.1
HCM 2010 LOS	C

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	15	46	933	622	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	0	1	1			0
Taper Length (ft)	60		30			
Link Speed (mph)	30			40	40	
Link Distance (ft)	364			180	592	
Travel Time (s)	8.3			3.1	10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	15	46	933	622	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	80	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	50	1014	676	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1296	351	701	0	-	0
Stage 1	689	-	-	-	-	-
Stage 2	607	-	-	-	-	-
Critical Hdwy	6.29	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.67	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	184	551	544	-	-	-
Stage 1	383	-	-	-	-	-
Stage 2	491	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	167	551	544	-	-	-
Mov Cap-2 Maneuver	264	-	-	-	-	-
Stage 1	383	-	-	-	-	-
Stage 2	446	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	544	-	551	-	-
HCM Lane V/C Ratio	0.092	-	0.03	-	-
HCM Control Delay (s)	12.3	-	11.7	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	8	15	23	972	600	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	25			0
Storage Lanes	1	0	1			0
Taper Length (ft)	60		25			
Link Speed (mph)	30			40	40	
Link Distance (ft)	364			453	180	
Travel Time (s)	8.3			7.7	3.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	8	15	23	972	600	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	1	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	16	25	1045	645	41

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1238	343	686	0	-	0
Stage 1	666	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Critical Hdwy	6.29	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.67	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	199	557	553	-	-	-
Stage 1	396	-	-	-	-	-
Stage 2	512	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	190	557	553	-	-	-
Mov Cap-2 Maneuver	285	-	-	-	-	-
Stage 1	396	-	-	-	-	-
Stage 2	489	-	-	-	-	-

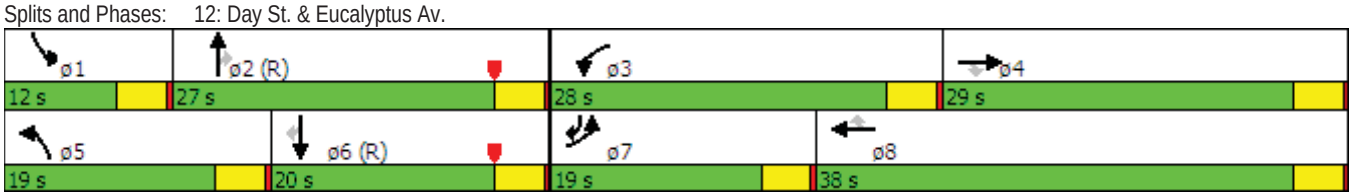
Approach	EB	NB	SB
HCM Control Delay, s	14.2	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	553	-	418	-	-
HCM Lane V/C Ratio	0.045	-	0.059	-	-
HCM Control Delay (s)	11.8	-	14.2	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	247	601	91	293	1076	140	257	503	224	97	282	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	175		0	100		100	200		0
Storage Lanes	1		1	1		1	1		2	1		1
Taper Length (ft)	100			75			80			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			35			40	
Link Distance (ft)		2104			1174			390			453	
Travel Time (s)		35.9			20.0			7.6			7.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	11.0
Total Split (s)	19.0	29.0	29.0	28.0	38.0	38.0	19.0	27.0	27.0	12.0	20.0	19.0
Total Split (%)	19.8%	30.2%	30.2%	29.2%	39.6%	39.6%	19.8%	28.1%	28.1%	12.5%	20.8%	19.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 13 (14%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 12: Day St. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	247	601	91	293	1076	140	257	503	224	97	282	197
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	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	260	633	96	308	1133	147	271	529	236	102	297	207
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	277	1079	483	346	1216	544	277	922	413	129	628	528
Arrive On Green	0.16	0.31	0.31	0.19	0.34	0.34	0.16	0.26	0.26	0.02	0.06	0.06
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	260	633	96	308	1133	147	271	529	236	102	297	207
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	13.9	14.5	4.3	16.2	29.7	6.4	14.6	12.5	12.4	5.5	7.8	10.0
Cycle Q Clear(g_c), s	13.9	14.5	4.3	16.2	29.7	6.4	14.6	12.5	12.4	5.5	7.8	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	1079	483	346	1216	544	277	922	413	129	628	528
V/C Ratio(X)	0.94	0.59	0.20	0.89	0.93	0.27	0.98	0.57	0.57	0.79	0.47	0.39
Avail Cap(c_a), veh/h	277	1079	483	444	1253	561	277	922	413	148	628	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	28.2	24.7	37.7	30.4	22.8	40.3	30.9	30.8	46.1	40.9	28.2
Incr Delay (d2), s/veh	35.9	0.8	0.2	16.6	12.3	0.3	47.7	2.6	5.7	21.6	2.5	2.2
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	0.0
%ile BackOfQ(50%),veh/ln	9.6	7.2	1.9	9.6	16.6	2.9	10.8	6.4	6.1	3.5	4.0	4.7
LnGrp Delay(d),s/veh	76.0	29.0	24.9	54.3	42.7	23.1	88.1	33.4	36.5	67.7	43.4	30.4
LnGrp LOS	E	C	C	D	D	C	F	C	D	E	D	C
Approach Vol, veh/h		989			1588			1036			606	
Approach Delay, s/veh		40.9			43.1			48.4			43.1	
Approach LOS		D			D			D			D	

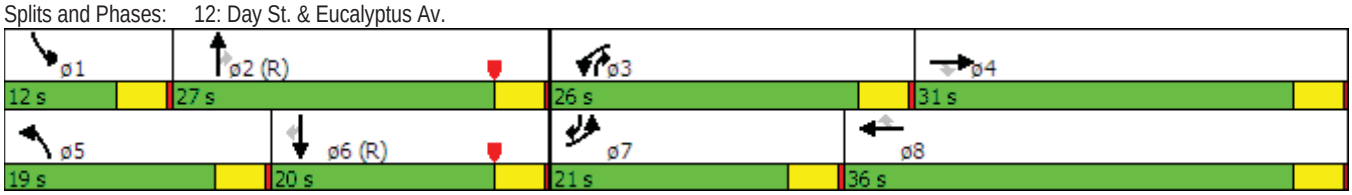
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	29.0	22.7	33.3	19.0	21.0	19.0	37.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	23.0	24.0	25.0	15.0	16.0	15.0	34.0
Max Q Clear Time (g_c+I1), s	7.5	14.5	18.2	16.5	16.6	12.0	15.9	31.7
Green Ext Time (p_c), s	0.0	4.3	0.5	6.6	0.0	2.4	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	43.9
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	247	601	91	293	1076	140	257	503	224	97	282	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	175		0	100		100	200		0
Storage Lanes	1		1	1		1	1		2	1		1
Taper Length (ft)	100			75			80			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			35			40	
Link Distance (ft)		2104			1174			390			453	
Travel Time (s)		35.9			20.0			7.6			7.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	11.0	11.0	20.0	11.0
Total Split (s)	21.0	31.0	31.0	26.0	36.0	36.0	19.0	27.0	26.0	12.0	20.0	21.0
Total Split (%)	21.9%	32.3%	32.3%	27.1%	37.5%	37.5%	19.8%	28.1%	27.1%	12.5%	20.8%	21.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 13 (14%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 12: Day St. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	247	601	91	293	1076	140	257	503	224	97	282	197
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	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	260	633	96	308	1133	147	271	529	236	102	297	207
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	293	1079	483	344	1180	528	277	929	722	128	632	544
Arrive On Green	0.17	0.30	0.30	0.19	0.33	0.33	0.16	0.26	0.26	0.07	0.18	0.18
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	260	633	96	308	1133	147	271	529	236	102	297	207
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	13.8	14.5	4.3	16.3	30.1	6.6	14.6	12.4	9.1	5.4	7.2	9.5
Cycle Q Clear(g_c), s	13.8	14.5	4.3	16.3	30.1	6.6	14.6	12.4	9.1	5.4	7.2	9.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	293	1079	483	344	1180	528	277	929	722	128	632	544
V/C Ratio(X)	0.89	0.59	0.20	0.90	0.96	0.28	0.98	0.57	0.33	0.79	0.47	0.38
Avail Cap(c_a), veh/h	314	1079	483	407	1180	528	277	929	722	148	632	544
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)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	28.3	24.7	37.8	31.4	23.5	40.3	30.7	16.7	43.8	35.3	23.8
Incr Delay (d2), s/veh	23.0	0.8	0.2	19.7	17.5	0.3	47.7	2.5	1.2	22.3	2.5	2.0
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	8.6	7.2	1.9	9.8	17.5	2.9	10.8	6.4	4.2	3.5	3.8	4.4
LnGrp Delay(d),s/veh	62.2	29.0	24.9	57.5	48.9	23.8	88.1	33.2	17.9	66.2	37.8	25.8
LnGrp LOS	E	C	C	E	D	C	F	C	B	E	D	C
Approach Vol, veh/h		989			1588			1036			606	
Approach Delay, s/veh		37.3			48.2			44.1			38.5	
Approach LOS		D			D			D			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	11.0	29.2	22.6	33.3	19.0	21.2	19.8	36.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	23.0	22.0	27.0	15.0	16.0	17.0	32.0
Max Q Clear Time (g_c+I1), s	7.4	14.4	18.3	16.5	16.6	11.5	15.8	32.1
Green Ext Time (p_c), s	0.0	4.3	0.3	7.8	0.0	2.7	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	43.3
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	136	61	98	145	237	40	603	121	208	460	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	95		95	80		0	100		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	60			100			60			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		861			839			1320			2260	
Travel Time (s)		16.8			16.3			36.0			44.0	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	20.0		11.0	20.0	20.0	11.0	20.0		11.0	20.0	
Total Split (s)	11.0	20.0		11.0	20.0	20.0	11.0	48.0		17.0	54.0	
Total Split (%)	11.5%	20.8%		11.5%	20.8%	20.8%	11.5%	50.0%		17.7%	56.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
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)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	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	C-Max		None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 13: Day St. & Cottonwood Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	37	136	61	98	145	237	40	603	121	208	460	26
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	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	42	155	69	111	165	269	45	685	138	236	523	30
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	180	80	129	319	271	90	719	145	240	981	56
Arrive On Green	0.05	0.15	0.15	0.07	0.17	0.17	0.05	0.48	0.48	0.14	0.56	0.56
Sat Flow, veh/h	1774	1222	544	1774	1863	1583	1774	1506	303	1774	1745	100
Grp Volume(v), veh/h	42	0	224	111	165	269	45	0	823	236	0	553
Grp Sat Flow(s),veh/h/ln	1774	0	1767	1774	1863	1583	1774	0	1809	1774	0	1845
Q Serve(g_s), s	2.2	0.0	11.9	5.9	7.7	16.3	2.4	0.0	41.8	12.7	0.0	18.0
Cycle Q Clear(g_c), s	2.2	0.0	11.9	5.9	7.7	16.3	2.4	0.0	41.8	12.7	0.0	18.0
Prop In Lane	1.00		0.31	1.00		1.00	1.00		0.17	1.00		0.05
Lane Grp Cap(c), veh/h	87	0	260	129	319	271	90	0	864	240	0	1037
V/C Ratio(X)	0.48	0.00	0.86	0.86	0.52	0.99	0.50	0.00	0.95	0.98	0.00	0.53
Avail Cap(c_a), veh/h	129	0	294	129	319	271	129	0	864	240	0	1037
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	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.5	0.0	40.0	44.0	36.2	39.7	44.4	0.0	24.0	41.4	0.0	13.1
Incr Delay (d2), s/veh	4.1	0.0	20.2	40.2	1.5	52.7	4.2	0.0	21.0	52.9	0.0	2.0
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	1.2	0.0	7.2	4.3	4.1	11.1	1.3	0.0	25.8	9.8	0.0	9.6
LnGrp Delay(d),s/veh	48.5	0.0	60.2	84.2	37.7	92.5	48.5	0.0	45.0	94.3	0.0	15.1
LnGrp LOS	D		E	F	D	F	D		D	F		B
Approach Vol, veh/h		266			545			868			789	
Approach Delay, s/veh		58.4			74.2			45.2			38.8	
Approach LOS		E			E			D			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	17.0	49.9	11.0	18.1	8.9	58.0	8.7	20.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	44.0	7.0	16.0	7.0	50.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	14.7	43.8	7.9	13.9	4.4	20.0	4.2	18.3
Green Ext Time (p_c), s	0.0	0.1	0.0	0.2	0.0	12.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.0
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	136	61	98	145	237	40	603	121	208	460	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	95		95	80		100	100		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	60			100			60			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		861			839			811			2260	
Travel Time (s)		16.8			16.3			22.1			44.0	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phase	7	4		3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	20.0		11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	
Total Split (s)	11.0	20.0		11.0	20.0	20.0	11.0	46.0	46.0	19.0	54.0	
Total Split (%)	11.5%	20.8%		11.5%	20.8%	20.8%	11.5%	47.9%	47.9%	19.8%	56.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
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)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	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	C-Max	C-Max	None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 13: Day St. & Cottonwood Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	37	136	61	98	145	237	40	603	121	208	460	26
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	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	42	155	69	111	165	269	45	685	138	236	523	30
Adj No. of Lanes	1	1	0	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	180	80	129	319	271	90	861	731	268	981	56
Arrive On Green	0.05	0.15	0.15	0.07	0.17	0.17	0.05	0.46	0.46	0.15	0.56	0.56
Sat Flow, veh/h	1774	1222	544	1774	1863	1583	1774	1863	1583	1774	1745	100
Grp Volume(v), veh/h	42	0	224	111	165	269	45	685	138	236	0	553
Grp Sat Flow(s),veh/h/ln	1774	0	1767	1774	1863	1583	1774	1863	1583	1774	0	1845
Q Serve(g_s), s	2.2	0.0	11.9	5.9	7.7	16.3	2.4	30.0	4.9	12.5	0.0	18.0
Cycle Q Clear(g_c), s	2.2	0.0	11.9	5.9	7.7	16.3	2.4	30.0	4.9	12.5	0.0	18.0
Prop In Lane	1.00		0.31	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	87	0	260	129	319	271	90	861	731	268	0	1037
V/C Ratio(X)	0.48	0.00	0.86	0.86	0.52	0.99	0.50	0.80	0.19	0.88	0.00	0.53
Avail Cap(c_a), veh/h	129	0	294	129	319	271	129	861	731	277	0	1037
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.5	0.0	40.0	44.0	36.2	39.7	44.4	22.0	15.2	39.9	0.0	13.1
Incr Delay (d2), s/veh	4.1	0.0	20.2	40.2	1.5	52.7	4.2	7.5	0.6	25.6	0.0	2.0
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	1.2	0.0	7.2	4.3	4.1	11.1	1.3	17.2	2.2	8.0	0.0	9.6
LnGrp Delay(d),s/veh	48.5	0.0	60.2	84.2	37.7	92.5	48.5	29.5	15.8	65.5	0.0	15.1
LnGrp LOS	D		E	F	D	F	D	C	B	E		B
Approach Vol, veh/h		266			545			868			789	
Approach Delay, s/veh		58.4			74.2			28.3			30.2	
Approach LOS		E			E			C			C	

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	18.5	48.4	11.0	18.1	8.9	58.0	8.7	20.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	42.0	7.0	16.0	7.0	50.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	14.5	32.0	7.9	13.9	4.4	20.0	4.2	18.3
Green Ext Time (p_c), s	0.0	6.0	0.0	0.2	0.0	11.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.3
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	30	18	10	24	63	7	688	1	22	587	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50	0		50	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	60			60			60			60		
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		861			839			634			1320	
Travel Time (s)		19.6			19.1			17.3			36.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	54.1
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	20	30	18	0	10	24	63	0	7	688	1
Peak Hour Factor	0.92	0.80	0.80	0.80	0.92	0.80	0.80	0.80	0.92	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	25	37	22	0	12	30	79	0	9	860	1
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	11.9	11.5	59.4
HCM LOS	B	B	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	1%	40%	0%	29%	0%	4%
Vol Thru, %	99%	60%	0%	71%	0%	95%
Vol Right, %	0%	0%	100%	0%	100%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	696	50	18	34	63	618
LT Vol	7	20	0	10	0	22
Through Vol	688	30	0	24	0	587
RT Vol	1	0	18	0	63	9
Lane Flow Rate	870	62	22	42	79	772
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	1	0.144	0.046	0.096	0.159	1
Departure Headway (Hd)	5.617	8.285	7.385	8.123	7.276	5.615
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	644	433	485	442	493	641
Service Time	3.716	6.033	5.134	5.862	5.015	3.713
HCM Lane V/C Ratio	1.351	0.143	0.045	0.095	0.16	1.204
HCM Control Delay	59.4	12.4	10.5	11.7	11.4	59.4
HCM Lane LOS	F	B	B	B	B	F
HCM 95th-tile Q	15.4	0.5	0.1	0.3	0.6	15.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	22	587	9
Peak Hour Factor	0.92	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	27	734	11
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	59.4
HCM LOS	F

Lane

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	30	18	10	24	63	7	688	1	22	587	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50	0		50	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	60			60			60			60		
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		861			839			634			509	
Travel Time (s)		19.6			19.1			17.3			13.9	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	25.1
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	20	30	18	0	10	24	63	0	7	688	1
Peak Hour Factor	0.92	0.80	0.80	0.80	0.92	0.80	0.80	0.80	0.92	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	25	37	22	0	12	30	79	0	9	860	1
Number of Lanes	0	0	1	1	0	0	1	1	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	12.5	12.1	29.1
HCM LOS	B	B	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	0%	40%	0%	29%	0%	7%	0%
Vol Thru, %	98%	100%	60%	0%	71%	0%	93%	97%
Vol Right, %	0%	0%	0%	100%	0%	100%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	351	345	50	18	34	63	316	303
LT Vol	7	0	20	0	10	0	22	0
Through Vol	344	344	30	0	24	0	294	294
RT Vol	0	1	0	18	0	63	0	9
Lane Flow Rate	439	431	62	22	42	79	394	378
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.79	0.775	0.153	0.049	0.102	0.17	0.726	0.69
Departure Headway (Hd)	6.593	6.581	8.786	7.855	8.628	7.752	6.742	6.685
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	553	552	410	458	418	465	540	545
Service Time	4.293	4.281	6.494	5.562	6.334	5.458	4.442	4.385
HCM Lane V/C Ratio	0.794	0.781	0.151	0.048	0.1	0.17	0.73	0.694
HCM Control Delay	29.7	28.4	13.1	11	12.3	12	25.3	22.9
HCM Lane LOS	D	D	B	B	B	B	D	C
HCM 95th-tile Q	7.4	7.1	0.5	0.2	0.3	0.6	6	5.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	22	587	9
Peak Hour Factor	0.92	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	27	734	11
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	24.1
HCM LOS	C

Lane

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	254	1057	159	163	1658	125	95	297	105	89	375	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	245		0	220		75	50		50	200		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			120			90			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			35			25	
Link Distance (ft)		861			839			831			716	
Travel Time (s)		13.0			12.7			16.2			19.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	20.0		11.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	17.0	45.0		21.0	49.0	49.0	30.0	30.0	30.0	30.0	30.0	
Total Split (%)	17.7%	46.9%		21.9%	51.0%	51.0%	31.3%	31.3%	31.3%	31.3%	31.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
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)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 42 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

Splits and Phases: 15: Day St. & Alessandro Bl.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	254	1057	159	163	1658	125	95	297	105	89	375	137
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	270	1124	169	173	1764	133	101	316	112	95	399	146
Adj No. of Lanes	1	3	0	1	2	1	1	1	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	240	2174	327	208	1659	742	75	504	429	191	353	129
Arrive On Green	0.14	0.49	0.49	0.12	0.47	0.47	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1774	4464	671	1774	3539	1583	858	1863	1583	956	1302	476
Grp Volume(v), veh/h	270	853	440	173	1764	133	101	316	112	95	0	545
Grp Sat Flow(s),veh/h/ln	1774	1695	1744	1774	1770	1583	858	1863	1583	956	0	1779
Q Serve(g_s), s	13.0	16.6	16.6	9.2	45.0	4.7	0.0	14.3	5.3	9.3	0.0	26.0
Cycle Q Clear(g_c), s	13.0	16.6	16.6	9.2	45.0	4.7	26.0	14.3	5.3	23.6	0.0	26.0
Prop In Lane	1.00		0.38	1.00		1.00	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	240	1651	849	208	1659	742	75	504	429	191	0	482
V/C Ratio(X)	1.12	0.52	0.52	0.83	1.06	0.18	1.35	0.63	0.26	0.50	0.00	1.13
Avail Cap(c_a), veh/h	240	1651	849	314	1659	742	75	504	429	191	0	482
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	0.00	1.00
Uniform Delay (d), s/veh	41.5	16.9	16.9	41.5	25.5	14.8	48.0	30.7	27.5	41.1	0.0	35.0
Incr Delay (d2), s/veh	95.5	1.2	2.2	11.1	41.1	0.5	221.6	5.8	1.5	8.9	0.0	82.2
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	0.0
%ile BackOfQ(50%),veh/ln	12.7	8.0	8.5	5.1	31.4	2.1	6.6	8.2	2.5	2.9	0.0	23.7
LnGrp Delay(d),s/veh	137.0	18.0	19.1	52.5	66.6	15.3	269.6	36.5	28.9	50.0	0.0	117.2
LnGrp LOS	F	B	B	D	F	B	F	D	C	D		F
Approach Vol, veh/h		1563			2070			529			640	
Approach Delay, s/veh		38.9			62.1			79.4			107.3	
Approach LOS		D			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.2	50.8		30.0	17.0	49.0		30.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	17.0	41.0		26.0	13.0	45.0		26.0
Max Q Clear Time (g_c+I1), s	11.2	18.6		28.0	15.0	47.0		28.0
Green Ext Time (p_c), s	0.2	19.8		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.5
HCM 2010 LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	254	1057	159	163	1658	125	95	297	105	89	375	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	245		0	220		75	50		50	200		100
Storage Lanes	2		0	1		0	1		1	1		1
Taper Length (ft)	100			120			90			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			35			25	
Link Distance (ft)		861			839			831			716	
Travel Time (s)		13.0			12.7			16.2			19.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						4
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	11.0	20.0		11.0	20.0	20.0	11.0	20.0		11.0	20.0	20.0
Total Split (s)	11.0	37.0		20.0	46.0	46.0	11.0	22.0		11.0	22.0	22.0
Total Split (%)	12.2%	41.1%		22.2%	51.1%	51.1%	12.2%	24.4%		12.2%	24.4%	24.4%
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
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)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		None	Max	Max

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	

Splits and Phases: 15: Day St. & Alessandro Bl.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	254	1057	159	163	1658	125	95	297	105	89	375	137
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	270	1124	169	173	1764	133	101	316	112	95	399	146
Adj No. of Lanes	2	3	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	1929	290	209	1672	748	128	519	181	125	373	317
Arrive On Green	0.08	0.43	0.43	0.12	0.47	0.47	0.07	0.20	0.20	0.07	0.20	0.20
Sat Flow, veh/h	3442	4464	671	1774	3539	1583	1774	2577	897	1774	1863	1583
Grp Volume(v), veh/h	270	853	440	173	1764	133	101	215	213	95	399	146
Grp Sat Flow(s),veh/h/ln	1721	1695	1744	1774	1770	1583	1774	1770	1704	1774	1863	1583
Q Serve(g_s), s	7.0	17.2	17.2	8.6	42.5	4.4	5.0	9.9	10.3	4.7	18.0	7.3
Cycle Q Clear(g_c), s	7.0	17.2	17.2	8.6	42.5	4.4	5.0	9.9	10.3	4.7	18.0	7.3
Prop In Lane	1.00		0.38	1.00		1.00	1.00		0.53	1.00		1.00
Lane Grp Cap(c), veh/h	268	1465	754	209	1672	748	128	356	343	125	373	317
V/C Ratio(X)	1.01	0.58	0.58	0.83	1.05	0.18	0.79	0.60	0.62	0.76	1.07	0.46
Avail Cap(c_a), veh/h	268	1465	754	315	1672	748	138	356	343	138	373	317
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	41.5	19.4	19.4	38.8	23.7	13.7	41.1	32.7	32.8	41.1	36.0	31.7
Incr Delay (d2), s/veh	57.2	1.7	3.3	10.5	38.1	0.5	24.5	7.4	8.2	19.6	66.8	4.8
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	0.0
%ile BackOfQ(50%),veh/ln	5.4	8.4	9.0	4.8	29.5	2.0	3.3	5.6	5.6	3.0	16.1	3.6
LnGrp Delay(d),s/veh	98.8	21.1	22.7	49.3	61.9	14.2	65.6	40.0	41.0	60.7	102.8	36.5
LnGrp LOS	F	C	C	D	F	B	E	D	D	E	F	D
Approach Vol, veh/h		1563			2070			529			640	
Approach Delay, s/veh		35.0			57.7			45.3			81.4	
Approach LOS		C			E			D			F	

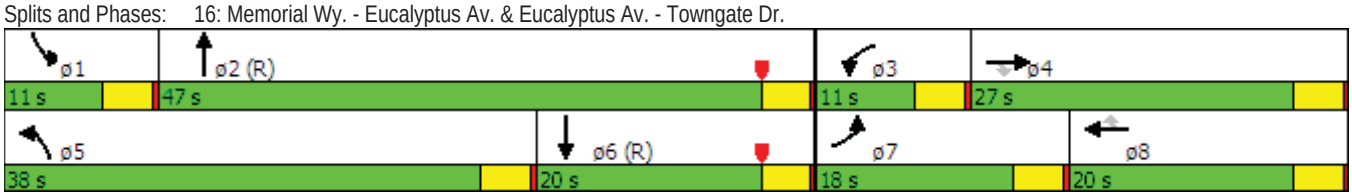
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	42.9	10.5	22.0	11.0	46.5	10.3	22.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	33.0	7.0	18.0	7.0	42.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	10.6	19.2	7.0	20.0	9.0	44.5	6.7	12.3
Green Ext Time (p_c), s	0.2	12.7	0.0	0.0	0.0	0.0	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	52.1
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	223	394	329	10	501	33	552	177	17	15	91	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	165		50	150		50	200		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	80			100			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1034			1432			824			534	
Travel Time (s)		17.6			24.4			14.0			9.1	
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	0.92
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0		11.0	20.0	
Total Split (s)	18.0	27.0	27.0	11.0	20.0	20.0	38.0	47.0		11.0	20.0	
Total Split (%)	18.8%	28.1%	28.1%	11.5%	20.8%	20.8%	39.6%	49.0%		11.5%	20.8%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	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	C-Max		None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 16: Memorial Wy. - Eucalyptus Av. & Eucalyptus Av. - Towngate Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	223	394	329	10	501	33	552	177	17	15	91	316
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	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	242	428	358	11	545	36	600	192	18	16	99	343
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
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	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	259	1040	465	33	590	264	625	1623	151	45	298	267
Arrive On Green	0.15	0.29	0.29	0.02	0.17	0.17	0.35	0.50	0.50	0.03	0.17	0.17
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3275	304	1774	1770	1583
Grp Volume(v), veh/h	242	428	358	11	545	36	600	103	107	16	99	343
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1809	1774	1770	1583
Q Serve(g_s), s	13.0	9.3	19.8	0.6	14.6	1.9	31.8	3.0	3.0	0.9	4.7	16.2
Cycle Q Clear(g_c), s	13.0	9.3	19.8	0.6	14.6	1.9	31.8	3.0	3.0	0.9	4.7	16.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	259	1040	465	33	590	264	625	877	896	45	298	267
V/C Ratio(X)	0.94	0.41	0.77	0.33	0.92	0.14	0.96	0.12	0.12	0.36	0.33	1.29
Avail Cap(c_a), veh/h	259	1040	465	129	590	264	628	877	896	129	298	267
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	40.6	27.2	30.9	46.5	39.4	34.1	30.4	13.0	13.0	46.0	35.2	39.9
Incr Delay (d2), s/veh	38.8	0.3	7.7	5.8	20.4	0.2	26.1	0.3	0.3	4.7	3.0	154.2
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	0.0
%ile BackOfQ(50%),veh/ln	9.1	4.6	9.6	0.3	8.8	0.8	20.0	1.5	1.6	0.5	2.6	18.5
LnGrp Delay(d),s/veh	79.3	27.5	38.6	52.4	59.8	34.3	56.5	13.2	13.3	50.7	38.1	194.2
LnGrp LOS	E	C	D	D	E	C	E	B	B	D	D	F
Approach Vol, veh/h		1028			592			810			458	
Approach Delay, s/veh		43.6			58.2			45.3			155.4	
Approach LOS		D			E			D			F	

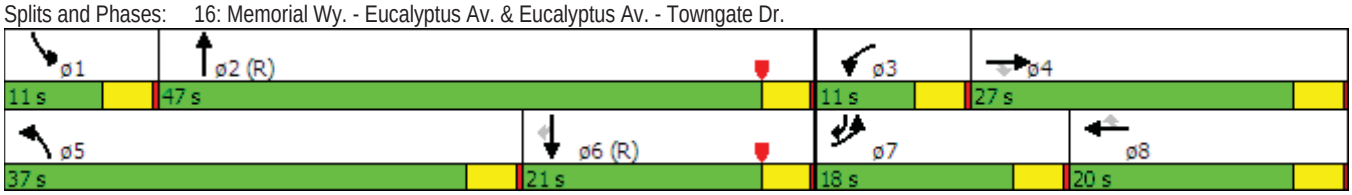
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	51.6	5.8	32.2	37.8	20.2	18.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	43.0	7.0	23.0	34.0	16.0	14.0	16.0
Max Q Clear Time (g_c+I1), s	2.9	5.0	2.6	21.8	33.8	18.2	15.0	16.6
Green Ext Time (p_c), s	0.0	4.3	0.0	0.8	0.1	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	64.8
HCM 2010 LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	223	394	329	10	501	33	552	177	17	15	91	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	165		50	150		50	200		0	200		0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	80			100			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1034			1432			824			534	
Travel Time (s)		17.6			24.4			14.0			9.1	
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	0.92
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0		11.0	20.0	11.0
Total Split (s)	18.0	27.0	27.0	11.0	20.0	20.0	37.0	47.0		11.0	21.0	18.0
Total Split (%)	18.8%	28.1%	28.1%	11.5%	20.8%	20.8%	38.5%	49.0%		11.5%	21.9%	18.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 16: Memorial Wy. - Eucalyptus Av. & Eucalyptus Av. - Towngate Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	223	394	329	10	501	33	552	177	17	15	91	316
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	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	242	428	358	11	545	36	600	192	18	16	99	343
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	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	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	259	1040	465	33	590	264	610	1623	151	45	330	511
Arrive On Green	0.15	0.29	0.29	0.02	0.17	0.17	0.34	0.50	0.50	0.03	0.18	0.18
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3275	304	1774	1863	1583
Grp Volume(v), veh/h	242	428	358	11	545	36	600	103	107	16	99	343
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1809	1774	1863	1583
Q Serve(g_s), s	13.0	9.3	19.8	0.6	14.6	1.9	32.2	3.0	3.0	0.9	4.4	17.0
Cycle Q Clear(g_c), s	13.0	9.3	19.8	0.6	14.6	1.9	32.2	3.0	3.0	0.9	4.4	17.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	259	1040	465	33	590	264	610	877	896	45	330	511
V/C Ratio(X)	0.94	0.41	0.77	0.33	0.92	0.14	0.98	0.12	0.12	0.36	0.30	0.67
Avail Cap(c_a), veh/h	259	1040	465	129	590	264	610	877	896	129	330	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	40.6	27.2	30.9	46.5	39.4	34.1	31.2	13.0	13.0	46.0	34.3	28.1
Incr Delay (d2), s/veh	38.8	0.3	7.7	5.8	20.4	0.2	32.2	0.3	0.3	4.7	2.3	6.9
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	9.1	4.6	9.6	0.3	8.8	0.8	21.1	1.5	1.6	0.5	2.5	8.8
LnGrp Delay(d),s/veh	79.3	27.5	38.6	52.4	59.8	34.3	63.5	13.2	13.3	50.7	36.7	34.9
LnGrp LOS	E	C	D	D	E	C	E	B	B	D	D	C
Approach Vol, veh/h		1028			592			810			458	
Approach Delay, s/veh		43.6			58.2			50.5			35.9	
Approach LOS		D			E			D			D	

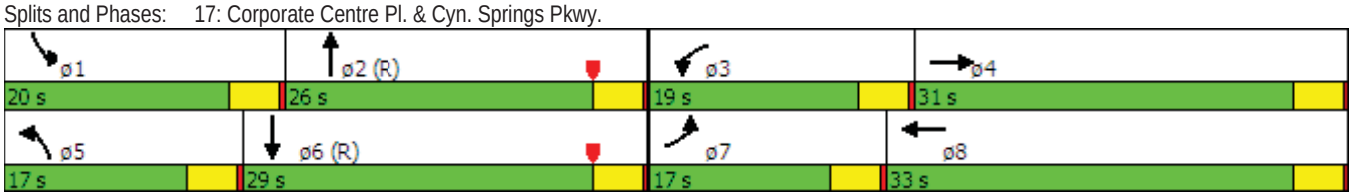
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	51.6	5.8	32.2	37.0	21.0	18.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	43.0	7.0	23.0	33.0	17.0	14.0	16.0
Max Q Clear Time (g_c+I1), s	2.9	5.0	2.6	21.8	34.2	19.0	15.0	16.6
Green Ext Time (p_c), s	0.0	3.0	0.0	0.8	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.3
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	218	6	26	306	27	12	12	33	29	13	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	175		0	130		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			90			90			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			40			30	
Link Distance (ft)		476			1120			987			205	
Travel Time (s)		8.1			19.1			16.8			4.7	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	20.0		11.0	20.0		11.0	20.0		11.0	20.0	
Total Split (s)	17.0	31.0		19.0	33.0		17.0	26.0		20.0	29.0	
Total Split (%)	17.7%	32.3%		19.8%	34.4%		17.7%	27.1%		20.8%	30.2%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 15 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	

Splits and Phases: 17: Corporate Centre Pl. & Cyn. Springs Pkwy.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	218	6	26	306	27	12	12	33	29	13	12
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	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	12	253	7	30	356	31	14	14	38	34	15	14
Adj No. of Lanes	1	3	0	1	3	0	1	2	0	1	1	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	35	576	16	71	636	55	40	1126	1008	77	584	545
Arrive On Green	0.02	0.11	0.11	0.01	0.04	0.04	0.02	0.64	0.64	0.04	0.66	0.66
Sat Flow, veh/h	1774	5088	140	1774	4771	409	1774	1770	1583	1774	888	829
Grp Volume(v), veh/h	12	168	92	30	251	136	14	14	38	34	0	29
Grp Sat Flow(s),veh/h/ln	1774	1695	1838	1774	1695	1791	1774	1770	1583	1774	0	1717
Q Serve(g_s), s	0.6	4.4	4.5	1.6	7.0	7.1	0.7	0.3	0.9	1.8	0.0	0.6
Cycle Q Clear(g_c), s	0.6	4.4	4.5	1.6	7.0	7.1	0.7	0.3	0.9	1.8	0.0	0.6
Prop In Lane	1.00		0.08	1.00		0.23	1.00		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	35	384	208	71	452	239	40	1126	1008	77	0	1128
V/C Ratio(X)	0.34	0.44	0.44	0.42	0.56	0.57	0.35	0.01	0.04	0.44	0.00	0.03
Avail Cap(c_a), veh/h	240	953	517	277	1024	541	240	1126	1008	296	0	1128
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.97	0.97	0.97	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.4	39.7	39.7	46.3	43.1	43.2	46.2	6.4	6.5	44.8	0.0	5.7
Incr Delay (d2), s/veh	5.5	0.8	1.5	3.8	1.0	2.0	5.0	0.0	0.1	3.9	0.0	0.0
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	0.4	2.1	2.4	0.9	3.3	3.7	0.4	0.1	0.4	1.0	0.0	0.3
LnGrp Delay(d),s/veh	51.9	40.5	41.2	50.0	44.1	45.2	51.3	6.4	6.6	48.7	0.0	5.8
LnGrp LOS	D	D	D	D	D	D	D	A	A	D		A
Approach Vol, veh/h		272			417			66			63	
Approach Delay, s/veh		41.2			44.9			16.0			28.9	
Approach LOS		D			D			B			C	

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	8.2	65.1	7.9	14.9	6.2	67.1	5.9	16.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	22.0	15.0	27.0	13.0	25.0	13.0	29.0
Max Q Clear Time (g_c+I1), s	3.8	2.9	3.6	6.5	2.7	2.6	2.6	9.1
Green Ext Time (p_c), s	0.0	0.3	0.0	3.7	0.0	0.3	0.0	3.7

Intersection Summary	
HCM 2010 Ctrl Delay	40.1
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	71	4	29	77	13	15	52	26	15	26	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		0	100		0	130		0	135		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			45			60			60		
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		474			710			597			987	
Travel Time (s)		8.1			12.1			10.2			16.8	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	12	71	4	0	29	77	13	0	15	52	26
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	14	84	5	0	34	91	15	0	18	61	31
Number of Lanes	0	1	2	0	0	1	2	0	0	1	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	3
HCM Control Delay	8.4	8.4	8.3
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	40%	0%	100%	86%	0%	100%	66%	0%	100%
Vol Right, %	0%	0%	60%	0%	0%	14%	0%	0%	34%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	35	43	12	47	28	29	51	39	15	17
LT Vol	15	0	0	12	0	0	29	0	0	15	0
Through Vol	0	35	17	0	47	24	0	51	26	0	17
RT Vol	0	0	26	0	0	4	0	0	13	0	0
Lane Flow Rate	18	41	51	14	56	33	34	60	45	18	20
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.029	0.06	0.069	0.023	0.082	0.047	0.054	0.088	0.063	0.029	0.031
Departure Headway (Hd)	5.827	5.327	4.907	5.793	5.293	5.192	5.723	5.223	4.988	5.899	5.399
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	614	672	729	618	676	689	626	685	717	607	662
Service Time	3.564	3.064	2.644	3.531	3.031	2.93	3.459	2.959	2.723	3.638	3.138
HCM Lane V/C Ratio	0.029	0.061	0.07	0.023	0.083	0.048	0.054	0.088	0.063	0.03	0.03
HCM Control Delay	8.7	8.4	8	8.7	8.5	8.2	8.8	8.5	8.1	8.8	8.3
HCM Lane LOS	A	A	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0.2	0.2	0.1	0.3	0.1	0.2	0.3	0.2	0.1	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	15	26	19
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	18	31	22
Number of Lanes	0	1	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	8.2
HCM LOS	A

Lane	SBLn3

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	85	0	0	60	3	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	0		1	1
Taper Length (ft)			40		60	
Link Speed (mph)	40			40	30	
Link Distance (ft)	135			597	203	
Travel Time (s)	2.3			10.2	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	85	0	0	60	3	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	92	0	0	65	3	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	92	0	125	46
Stage 1	-	-	-	-	92	-
Stage 2	-	-	-	-	33	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1501	-	857	1014
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	985	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1501	-	857	1014
Mov Cap-2 Maneuver	-	-	-	-	821	-
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	985	-

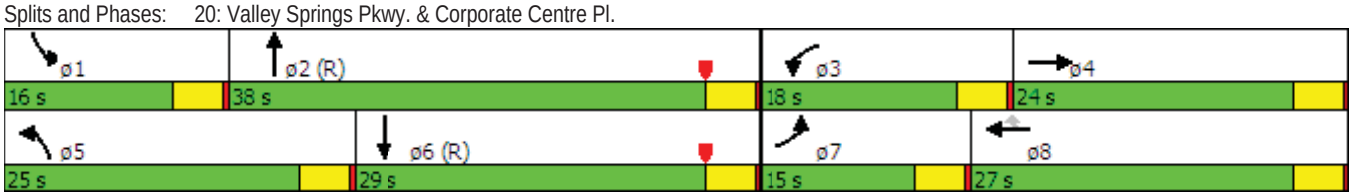
Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	821	1014	-	-	1501	-
HCM Lane V/C Ratio	0.004	0.01	-	-	-	-
HCM Control Delay (s)	9.4	8.6	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	37	34	18	5	98	388	48	29	350	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		70	140		50	150		0	120		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	60			60			60			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			40			40			40	
Link Distance (ft)		327			493			402			804	
Travel Time (s)		7.4			8.4			6.9			13.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	20.0		11.0	20.0	20.0	11.0	20.0		11.0	20.0	
Total Split (s)	15.0	24.0		18.0	27.0	27.0	25.0	38.0		16.0	29.0	
Total Split (%)	15.6%	25.0%		18.8%	28.1%	28.1%	26.0%	39.6%		16.7%	30.2%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
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)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	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	C-Max		None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 16 (17%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	

Splits and Phases: 20: Valley Springs Pkwy. & Corporate Centre Pl.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	10	37	34	18	5	98	388	48	29	350	12
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	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	11	11	40	37	19	5	105	417	52	31	376	13
Adj No. of Lanes	1	1	0	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	33	23	84	81	328	147	135	3127	383	73	3260	112
Arrive On Green	0.02	0.07	0.07	0.05	0.09	0.09	0.05	0.46	0.46	0.04	0.65	0.65
Sat Flow, veh/h	1774	353	1283	1774	3539	1583	1774	4592	562	1774	5049	174
Grp Volume(v), veh/h	11	0	51	37	19	5	105	306	163	31	252	137
Grp Sat Flow(s),veh/h/ln	1774	0	1636	1774	1770	1583	1774	1695	1764	1774	1695	1832
Q Serve(g_s), s	0.6	0.0	2.9	2.0	0.5	0.3	5.6	5.0	5.1	1.6	2.7	2.8
Cycle Q Clear(g_c), s	0.6	0.0	2.9	2.0	0.5	0.3	5.6	5.0	5.1	1.6	2.7	2.8
Prop In Lane	1.00		0.78	1.00		1.00	1.00		0.32	1.00		0.09
Lane Grp Cap(c), veh/h	33	0	107	81	328	147	135	2309	1201	73	2189	1183
V/C Ratio(X)	0.33	0.00	0.48	0.46	0.06	0.03	0.78	0.13	0.14	0.43	0.11	0.12
Avail Cap(c_a), veh/h	203	0	341	259	848	379	388	2309	1201	222	2189	1183
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	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	46.5	0.0	43.3	44.6	39.7	39.6	44.7	9.7	9.7	44.9	6.5	6.5
Incr Delay (d2), s/veh	5.8	0.0	3.2	4.0	0.1	0.1	9.1	0.1	0.2	3.9	0.1	0.2
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	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.4	1.0	0.2	0.1	3.1	2.4	2.6	0.9	1.3	1.4
LnGrp Delay(d),s/veh	52.4	0.0	46.5	48.6	39.8	39.7	53.9	9.8	10.0	48.8	6.6	6.7
LnGrp LOS	D		D	D	D	D	D	A	A	D	A	A
Approach Vol, veh/h		62			61			574			420	
Approach Delay, s/veh		47.5			45.1			17.9			9.8	
Approach LOS		D			D			B			A	

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	7.9	69.4	8.4	10.3	11.3	66.0	5.8	12.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	34.0	14.0	20.0	21.0	25.0	11.0	23.0
Max Q Clear Time (g_c+I1), s	3.6	7.1	4.0	4.9	7.6	4.8	2.6	2.5
Green Ext Time (p_c), s	0.0	5.5	0.0	0.3	0.2	5.1	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	0	11	14	0	4	12	527	7	2	406	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	25		0	75		50
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	60			60			10			80		
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		252			253			418			402	
Travel Time (s)		5.7			5.8			7.1			6.9	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	0	11	14	0	4	12	527	7	2	406	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	15	19	0	5	16	703	9	3	541	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	868	1299	279	961	1302	356	557	0	0	712	0	0
Stage 1	555	555	-	739	739	-	-	-	-	-	-	-
Stage 2	313	744	-	222	563	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	305	160	612	269	160	547	637	-	-	538	-	-
Stage 1	402	511	-	301	422	-	-	-	-	-	-	-
Stage 2	616	420	-	698	507	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	291	152	612	253	152	547	637	-	-	538	-	-
Mov Cap-2 Maneuver	291	152	-	253	152	-	-	-	-	-	-	-
Stage 1	385	508	-	288	404	-	-	-	-	-	-	-
Stage 2	584	402	-	677	504	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	18.7	0.3	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	637	-	-	495	287	538	-	-
HCM Lane V/C Ratio	0.025	-	-	0.038	0.084	0.005	-	-
HCM Control Delay (s)	10.8	0.1	-	12.6	18.7	11.7	-	-
HCM Lane LOS	B	A	-	B	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.3	0	-	-

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	172	48	0	498	414	63	369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	180		0	115	
Storage Lanes	1	1	1		0	1	
Taper Length (ft)	60		100			120	
Right Turn on Red		Yes			Yes		
Link Speed (mph)	40			40			40
Link Distance (ft)	609			576			418
Travel Time (s)	10.4			9.8			7.1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)							
Turn Type	Prot	Perm	Prot	NA		Prot	NA
Protected Phases	3		5	2		1	6
Permitted Phases		8					
Detector Phase	3	8	5	2		1	6
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	11.0	20.0	11.0	20.0		11.0	20.0
Total Split (s)	32.0	32.0	11.0	44.0		20.0	53.0
Total Split (%)	33.3%	33.3%	11.5%	45.8%		20.8%	55.2%
Yellow Time (s)	3.5	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead	Lag		Lead	Lag
Lead-Lag Optimize?			Yes	Yes		Yes	Yes
Recall Mode	None	None	None	C-Max		None	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 20 (21%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 22: Valley Springs Pkwy. & Gateway Dr.

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (veh/h)	172	48	0	498	414	63	369
Number	3	18		2	12	1	6
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00			1.00	1.00	
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863		1863	1900	1863	1863
Adj Flow Rate, veh/h	181	51		524	436	66	388
Adj No. of Lanes	1	1		3	0	1	3
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	223	199		2335	1091	107	4022
Arrive On Green	0.13	0.13		0.23	0.23	0.12	1.00
Sat Flow, veh/h	1774	1583		3558	1583	1774	5253
Grp Volume(v), veh/h	181	51		524	436	66	388
Grp Sat Flow(s),veh/h/ln	1774	1583		1695	1583	1774	1695
Q Serve(g_s), s	9.5	2.8		12.1	22.5	3.4	0.0
Cycle Q Clear(g_c), s	9.5	2.8		12.1	22.5	3.4	0.0
Prop In Lane	1.00	1.00			1.00	1.00	
Lane Grp Cap(c), veh/h	223	199		2335	1091	107	4022
V/C Ratio(X)	0.81	0.26		0.22	0.40	0.62	0.10
Avail Cap(c_a), veh/h	517	462		2335	1091	296	4022
HCM Platoon Ratio	1.00	1.00		0.33	0.33	2.00	2.00
Upstream Filter(I)	1.00	1.00		0.93	0.93	1.00	1.00
Uniform Delay (d), s/veh	40.9	37.9		16.2	20.2	41.1	0.0
Incr Delay (d2), s/veh	6.9	0.7		0.2	1.0	5.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	1.3		5.7	10.2	1.8	0.0
LnGrp Delay(d),s/veh	47.8	38.6		16.4	21.2	46.8	0.0
LnGrp LOS	D	D		B	C	D	A
Approach Vol, veh/h	232			960			454
Approach Delay, s/veh	45.7			18.6			6.8
Approach LOS	D			B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.8	70.1				79.9		16.1
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	16.0	40.0				49.0		28.0
Max Q Clear Time (g_c+I1), s	5.4	24.5				2.0		11.5
Green Ext Time (p_c), s	0.1	7.7				11.8		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	19.2
HCM 2010 LOS	B

Notes

User approved ignoring U-Turning movement.

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	108	14	0	897	356	45	494
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	195		100	150	
Storage Lanes	1	1	1		0	1	
Taper Length (ft)	60		100			80	
Right Turn on Red		Yes			Yes		
Link Speed (mph)	30			40			40
Link Distance (ft)	400			560			576
Travel Time (s)	9.1			9.5			9.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Turn Type	Prot	Perm	Prot	NA		Prot	NA
Protected Phases	8		5	2		1	6
Permitted Phases		8					
Detector Phase	8	8	5	2		1	6
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	20.0	20.0	11.0	20.0		11.0	20.0
Total Split (s)	27.0	27.0	11.0	54.0		15.0	58.0
Total Split (%)	28.1%	28.1%	11.5%	56.3%		15.6%	60.4%
Yellow Time (s)	3.5	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead	Lag		Lead	Lag
Lead-Lag Optimize?			Yes	Yes		Yes	Yes
Recall Mode	None	None	None	C-Max		None	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 23: Valley Springs Pkwy. & Dwy. 5

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (veh/h)	108	14	0	897	356	45	494
Number	3	18		2	12	1	6
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00			1.00	1.00	
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863		1863	1900	1863	1863
Adj Flow Rate, veh/h	117	15		975	387	49	537
Adj No. of Lanes	1	1		3	0	1	3
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	152	136		2637	1046	94	4226
Arrive On Green	0.09	0.09		0.74	0.74	0.11	1.00
Sat Flow, veh/h	1774	1583		3749	1421	1774	5253
Grp Volume(v), veh/h	117	15		923	439	49	537
Grp Sat Flow(s),veh/h/ln	1774	1583		1695	1612	1774	1695
Q Serve(g_s), s	6.2	0.8		9.5	9.5	2.5	0.0
Cycle Q Clear(g_c), s	6.2	0.8		9.5	9.5	2.5	0.0
Prop In Lane	1.00	1.00			0.88	1.00	
Lane Grp Cap(c), veh/h	152	136		2496	1187	94	4226
V/C Ratio(X)	0.77	0.11		0.37	0.37	0.52	0.13
Avail Cap(c_a), veh/h	425	379		2496	1187	203	4226
HCM Platoon Ratio	1.00	1.00		1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00		0.26	0.26	0.97	0.97
Uniform Delay (d), s/veh	43.0	40.5		4.6	4.6	41.7	0.0
Incr Delay (d2), s/veh	8.0	0.4		0.1	0.2	4.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.4		4.4	4.2	1.3	0.0
LnGrp Delay(d),s/veh	50.9	40.9		4.7	4.8	46.0	0.1
LnGrp LOS	D	D		A	A	D	A
Approach Vol, veh/h	132			1362			586
Approach Delay, s/veh	49.8			4.7			3.9
Approach LOS	D			A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.1	74.7				83.8		12.2
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	11.0	50.0				54.0		23.0
Max Q Clear Time (g_c+I1), s	4.5	11.5				2.0		8.2
Green Ext Time (p_c), s	0.0	18.2				20.4		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	7.4
HCM 2010 LOS	A

Notes

User approved ignoring U-Turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	344	7	5	218	13	2	1	2	11	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	60			60			60			60		
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		609			244			257			287	
Travel Time (s)		10.4			4.2			5.8			6.5	
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	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	344	7	5	218	13	2	1	2	11	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	374	8	5	237	14	2	1	2	12	1	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	251	0	0	382	0	0	536	668	191	471	665	126
Stage 1	-	-	-	-	-	-	406	406	-	255	255	-
Stage 2	-	-	-	-	-	-	130	262	-	216	410	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1311	-	-	1173	-	-	428	378	818	476	379	901
Stage 1	-	-	-	-	-	-	593	596	-	727	695	-
Stage 2	-	-	-	-	-	-	860	690	-	766	594	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1311	-	-	1173	-	-	422	372	818	468	373	901
Mov Cap-2 Maneuver	-	-	-	-	-	-	422	372	-	468	373	-
Stage 1	-	-	-	-	-	-	587	590	-	719	692	-
Stage 2	-	-	-	-	-	-	855	687	-	754	588	-

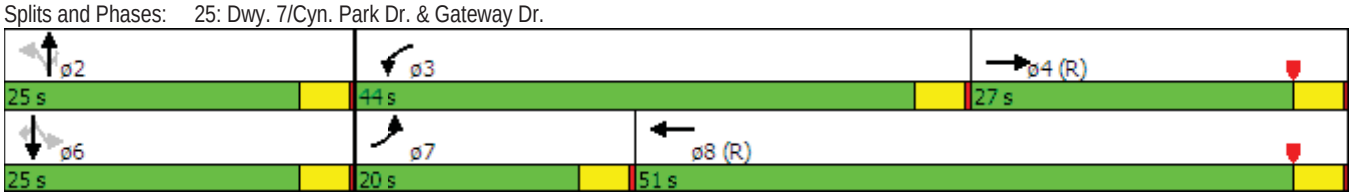
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	12.2	13.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	506	1311	-	-	1173	-	-	458
HCM Lane V/C Ratio	0.011	0.011	-	-	0.005	-	-	0.028
HCM Control Delay (s)	12.2	7.8	-	-	8.1	-	-	13.1
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	188	18	169	288	31	5	12	51	22	36	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	150		0	100		0	150		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			40	
Link Distance (ft)		428			394			265			189	
Travel Time (s)		7.3			6.7			6.0			3.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Detector Phase	7	4		3	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	20.0		11.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	27.0		44.0	51.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	20.8%	28.1%		45.8%	53.1%		26.0%	26.0%	26.0%	26.0%	26.0%	26.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
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)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	Max

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 25: Dwy. 7/Cyn. Park Dr. & Gateway Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	77	188	18	169	288	31	5	12	51	22	36	46
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	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	80	196	19	176	300	32	5	12	53	23	38	48
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	1746	168	215	1912	202	339	407	346	359	407	346
Arrive On Green	0.06	0.53	0.53	0.12	0.59	0.59	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1774	3264	313	1774	3230	342	1306	1863	1583	1331	1863	1583
Grp Volume(v), veh/h	80	105	110	176	163	169	5	12	53	23	38	48
Grp Sat Flow(s),veh/h/ln	1774	1770	1807	1774	1770	1802	1306	1863	1583	1331	1863	1583
Q Serve(g_s), s	4.2	2.8	2.9	9.3	4.0	4.0	0.3	0.5	2.6	1.3	1.6	2.3
Cycle Q Clear(g_c), s	4.2	2.8	2.9	9.3	4.0	4.0	1.9	0.5	2.6	1.8	1.6	2.3
Prop In Lane	1.00		0.17	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	114	947	967	215	1048	1067	339	407	346	359	407	346
V/C Ratio(X)	0.70	0.11	0.11	0.82	0.16	0.16	0.01	0.03	0.15	0.06	0.09	0.14
Avail Cap(c_a), veh/h	296	947	967	739	1048	1067	339	407	346	359	407	346
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	44.0	11.0	11.1	41.1	8.8	8.8	30.6	29.5	30.3	30.2	29.9	30.2
Incr Delay (d2), s/veh	7.6	0.2	0.2	7.4	0.3	0.3	0.1	0.1	0.9	0.3	0.5	0.8
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	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.4	1.5	5.0	2.0	2.1	0.1	0.3	1.2	0.5	0.9	1.1
LnGrp Delay(d),s/veh	51.6	11.3	11.3	48.6	9.1	9.1	30.7	29.6	31.2	30.5	30.4	31.0
LnGrp LOS	D	B	B	D	A	A	C	C	C	C	C	C
Approach Vol, veh/h		295			508			70			109	
Approach Delay, s/veh		22.2			22.8			30.9			30.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.0	15.7	55.3		25.0	10.2	60.8
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		21.0	40.0	23.0		21.0	16.0	47.0
Max Q Clear Time (g_c+I1), s		4.6	11.3	4.9		4.3	6.2	6.0
Green Ext Time (p_c), s		0.5	0.5	2.8		0.5	0.1	3.2

Intersection Summary	
HCM 2010 Ctrl Delay	24.1
HCM 2010 LOS	C

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	227	493	1	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	25			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	0				60	
Link Speed (mph)		40	40		30	
Link Distance (ft)		394	226		243	
Travel Time (s)		6.7	3.9		5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	227	493	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	247	536	1	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	537	0	-	0	662	268
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	126	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1027	-	-	-	395	730
Stage 1	-	-	-	-	551	-
Stage 2	-	-	-	-	886	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1027	-	-	-	395	730
Mov Cap-2 Maneuver	-	-	-	-	469	-
Stage 1	-	-	-	-	551	-
Stage 2	-	-	-	-	885	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1027	-	-	-	-
HCM Lane V/C Ratio	0.001	-	-	-	-
HCM Control Delay (s)	8.5	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	206	19	103	492	13	1	0	28	7	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	25		0	25		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	1			0			60			60		
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		226			318			265			243	
Travel Time (s)		3.9			5.4			6.0			5.5	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	206	19	103	492	13	1	0	28	7	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	231	21	116	553	15	1	0	31	8	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	567	0	0	253	0	0	757	1048	126	914	1052	284
Stage 1	-	-	-	-	-	-	249	249	-	792	792	-
Stage 2	-	-	-	-	-	-	508	799	-	122	260	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1001	-	-	1309	-	-	297	226	901	228	225	713
Stage 1	-	-	-	-	-	-	733	699	-	349	399	-
Stage 2	-	-	-	-	-	-	516	396	-	869	692	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1001	-	-	1309	-	-	276	205	901	205	204	713
Mov Cap-2 Maneuver	-	-	-	-	-	-	276	205	-	205	204	-
Stage 1	-	-	-	-	-	-	731	697	-	348	364	-
Stage 2	-	-	-	-	-	-	470	361	-	836	690	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.4	9.5	21.7
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	836	1001	-	-	1309	-	-	225
HCM Lane V/C Ratio	0.039	0.003	-	-	0.088	-	-	0.04
HCM Control Delay (s)	9.5	8.6	-	-	8	-	-	21.7
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0.3	-	-	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	69	38	63	95	25	18	19	39	14	34	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		50	110		100	100		50	0		50
Storage Lanes	1		0	1		0	1		0	0		1
Taper Length (ft)	60			60			60			60		
Link Speed (mph)		40			40			40			30	
Link Distance (ft)		710			938			284			207	
Travel Time (s)		12.1			16.0			4.8			4.7	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	5	69	38	0	63	95	25	0	18	19	39
Peak Hour Factor	0.92	0.84	0.84	0.84	0.92	0.84	0.84	0.84	0.92	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	6	82	45	0	75	113	30	0	21	23	46
Number of Lanes	0	1	2	0	0	1	2	0	0	1	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	3	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	2	3
HCM Control Delay	8.4	8.7	8.4
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	29%	0%
Vol Thru, %	0%	100%	14%	0%	100%	38%	0%	100%	56%	71%	0%
Vol Right, %	0%	0%	86%	0%	0%	62%	0%	0%	44%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	18	13	45	5	46	61	63	63	57	48	5
LT Vol	18	0	0	5	0	0	63	0	0	14	0
Through Vol	0	13	6	0	46	23	0	63	32	34	0
RT Vol	0	0	39	0	0	38	0	0	25	0	5
Lane Flow Rate	21	15	54	6	55	73	75	75	67	57	6
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.036	0.023	0.075	0.01	0.082	0.1	0.12	0.11	0.092	0.091	0.008
Departure Headway (Hd)	6.078	5.578	4.976	5.914	5.413	4.976	5.742	5.241	4.932	5.762	4.916
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	587	639	716	604	660	717	623	682	725	619	724
Service Time	3.833	3.333	2.731	3.663	3.162	2.725	3.487	2.986	2.676	3.522	2.676
HCM Lane V/C Ratio	0.036	0.023	0.075	0.01	0.083	0.102	0.12	0.11	0.092	0.092	0.008
HCM Control Delay	9.1	8.5	8.1	8.7	8.6	8.3	9.3	8.6	8.2	9.1	7.7
HCM Lane LOS	A	A	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0.1	0.2	0	0.3	0.3	0.4	0.4	0.3	0.3	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	14	34	5
Peak Hour Factor	0.92	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	17	40	6
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	9
HCM LOS	A

Lane

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1	2	118	0	0	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	50	
Storage Lanes	1	0		0	0	
Taper Length (ft)	60				25	
Link Speed (mph)	30		40			40
Link Distance (ft)	223		216			336
Travel Time (s)	5.1		3.7			5.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	2	118	0	0	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	2	128	0	0	116

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	186	64	0	0	128	0
Stage 1	128	-	-	-	-	-
Stage 2	58	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	786	987	-	-	1456	-
Stage 1	884	-	-	-	-	-
Stage 2	958	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	786	987	-	-	1456	-
Mov Cap-2 Maneuver	774	-	-	-	-	-
Stage 1	884	-	-	-	-	-
Stage 2	958	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	904	1456	-
HCM Lane V/C Ratio	-	-	0.004	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1	4	118	2	8	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	25	
Storage Lanes	1	0		0	1	
Taper Length (ft)	60				60	
Link Speed (mph)	30		40			40
Link Distance (ft)	223		336			284
Travel Time (s)	5.1		5.7			4.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	4	118	2	8	106
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	25	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	4	128	2	9	115

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	204	65	0	0	130	0
Stage 1	129	-	-	-	-	-
Stage 2	75	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	766	986	-	-	1453	-
Stage 1	883	-	-	-	-	-
Stage 2	939	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	761	986	-	-	1453	-
Mov Cap-2 Maneuver	760	-	-	-	-	-
Stage 1	883	-	-	-	-	-
Stage 2	933	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	931	1453	-
HCM Lane V/C Ratio	-	-	0.006	0.006	-
HCM Control Delay (s)	-	-	8.9	7.5	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	118	2	3	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	25	
Storage Lanes	1	0		0	1	
Taper Length (ft)	60				25	
Link Speed (mph)	30		40			40
Link Distance (ft)	219		189			216
Travel Time (s)	5.0		3.2			3.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	0	118	2	3	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	25	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	128	2	3	114

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	193	65	0	0	130	0
Stage 1	129	-	-	-	-	-
Stage 2	64	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	778	986	-	-	1453	-
Stage 1	883	-	-	-	-	-
Stage 2	951	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	776	986	-	-	1453	-
Mov Cap-2 Maneuver	769	-	-	-	-	-
Stage 1	883	-	-	-	-	-
Stage 2	949	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1453	-
HCM Lane V/C Ratio	-	-	-	0.002	-
HCM Control Delay (s)	-	-	0	7.5	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	242	116	137	202	34	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			60		60	
Link Speed (mph)	40			40	30	
Link Distance (ft)	244			428	257	
Travel Time (s)	4.2			7.3	5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	242	116	137	202	34	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	263	126	149	220	37	45

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	389	0	734	195
Stage 1	-	-	-	-	326	-
Stage 2	-	-	-	-	408	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1166	-	355	814
Stage 1	-	-	-	-	704	-
Stage 2	-	-	-	-	640	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1166	-	310	814
Mov Cap-2 Maneuver	-	-	-	-	422	-
Stage 1	-	-	-	-	704	-
Stage 2	-	-	-	-	558	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	573	-	-	1166	-
HCM Lane V/C Ratio	0.142	-	-	0.128	-
HCM Control Delay (s)	12.3	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.4	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	85	2	5	58	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	25		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		60	
Link Speed (mph)	40			40	30	
Link Distance (ft)	493			135	181	
Travel Time (s)	8.4			2.3	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	85	2	5	58	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	92	2	5	63	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	95	0	135	47
Stage 1	-	-	-	-	93	-
Stage 2	-	-	-	-	42	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1497	-	845	1012
Stage 1	-	-	-	-	920	-
Stage 2	-	-	-	-	975	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1497	-	842	1012
Mov Cap-2 Maneuver	-	-	-	-	813	-
Stage 1	-	-	-	-	920	-
Stage 2	-	-	-	-	972	-

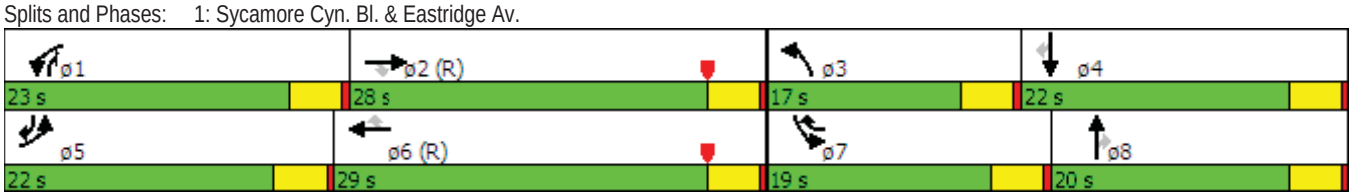
Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1497	-
HCM Lane V/C Ratio	-	-	-	0.004	-
HCM Control Delay (s)	0	-	-	7.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	412	834	397	518	542	307	258	287	147	385	409	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		150	310		200	360		320	275		110
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	120			120			120			200		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		910			577			817			952	
Travel Time (s)		15.5			9.8			12.4			14.4	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	11.0	11.0	20.0	11.0	11.0	20.0	11.0
Total Split (s)	22.0	28.0	28.0	23.0	29.0	19.0	17.0	20.0	23.0	19.0	22.0	22.0
Total Split (%)	24.4%	31.1%	31.1%	25.6%	32.2%	21.1%	18.9%	22.2%	25.6%	21.1%	24.4%	24.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	Max	None	None	Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 26 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Sycamore Cyn. Bl. & Eastridge Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	412	834	397	518	542	307	258	287	147	385	409	245
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	463	937	0	582	609	345	290	322	165	433	460	275
Adj No. of Lanes	2	3	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	553	1542	480	663	1187	766	372	629	587	511	773	600
Arrive On Green	0.16	0.30	0.00	0.19	0.34	0.34	0.11	0.18	0.18	0.15	0.22	0.22
Sat Flow, veh/h	3442	5085	1583	3442	3539	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	463	937	0	582	609	345	290	322	165	433	460	275
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1770	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	11.7	14.2	0.0	14.8	12.4	12.9	7.4	7.4	6.6	11.0	10.5	11.7
Cycle Q Clear(g_c), s	11.7	14.2	0.0	14.8	12.4	12.9	7.4	7.4	6.6	11.0	10.5	11.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	553	1542	480	663	1187	766	372	629	587	511	773	600
V/C Ratio(X)	0.84	0.61	0.00	0.88	0.51	0.45	0.78	0.51	0.28	0.85	0.60	0.46
Avail Cap(c_a), veh/h	688	1542	480	727	1187	766	497	629	587	574	773	600
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	26.8	0.0	35.3	24.0	15.3	39.1	33.5	19.9	37.3	31.6	21.0
Incr Delay (d2), s/veh	7.4	1.8	0.0	11.1	1.6	1.9	5.7	3.0	1.2	10.4	3.4	2.5
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	6.2	6.8	0.0	8.1	6.4	6.0	3.8	3.9	3.1	6.0	5.5	5.5
LnGrp Delay(d),s/veh	44.1	28.6	0.0	46.4	25.6	17.2	44.8	36.4	21.1	47.7	35.0	23.5
LnGrp LOS	D	C		D	C	B	D	D	C	D	C	C
Approach Vol, veh/h		1400			1536			777			1168	
Approach Delay, s/veh		33.7			31.6			36.3			37.0	
Approach LOS		C			C			D			D	

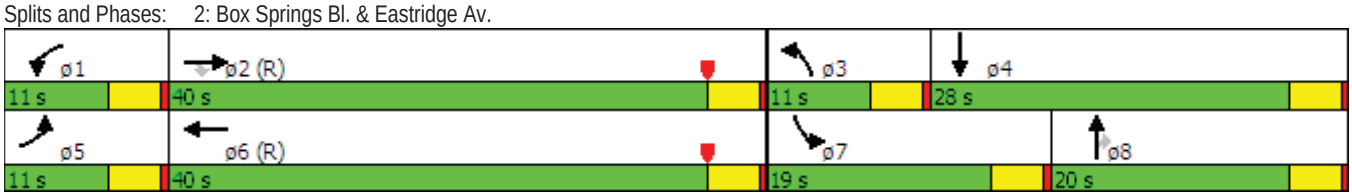
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.3	31.3	13.7	23.7	18.5	34.2	17.4	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	19.0	24.0	13.0	18.0	18.0	25.0	15.0	16.0
Max Q Clear Time (g_c+I1), s	16.8	16.2	9.4	13.7	13.7	14.9	13.0	9.4
Green Ext Time (p_c), s	0.6	5.8	0.3	2.4	0.7	7.1	0.3	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	34.2
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	1372	3	45	1328	210	20	91	39	314	134	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	90		80	150		0	75		160	90		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	60			60			60			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		760			700			315			411	
Travel Time (s)		13.0			11.9			7.2			9.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			
Detector Phase	5	2	2	1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0		11.0	20.0	20.0	11.0	20.0	
Total Split (s)	11.0	40.0	40.0	11.0	40.0		11.0	20.0	20.0	19.0	28.0	
Total Split (%)	12.2%	44.4%	44.4%	12.2%	44.4%		12.2%	22.2%	22.2%	21.1%	31.1%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	
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)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
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	C-Max	C-Max	None	C-Max		None	Max	Max	None	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	

Splits and Phases: 2: Box Springs Bl. & Eastridge Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	1372	3	45	1328	210	20	91	39	314	134	41
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	13	1414	3	46	1369	216	21	94	40	324	138	42
Adj No. of Lanes	1	2	1	1	2	0	1	1	1	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	38	1503	672	94	1400	219	56	331	281	296	844	248
Arrive On Green	0.02	0.42	0.42	0.07	0.61	0.61	0.03	0.18	0.18	0.17	0.31	0.31
Sat Flow, veh/h	1774	3539	1583	1774	3069	479	1774	1863	1583	1774	2698	794
Grp Volume(v), veh/h	13	1414	3	46	783	802	21	94	40	324	89	91
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1778	1774	1863	1583	1774	1770	1723
Q Serve(g_s), s	0.7	34.5	0.1	2.2	38.1	39.8	1.0	3.9	1.9	15.0	3.3	3.5
Cycle Q Clear(g_c), s	0.7	34.5	0.1	2.2	38.1	39.8	1.0	3.9	1.9	15.0	3.3	3.5
Prop In Lane	1.00		1.00	1.00		0.27	1.00		1.00	1.00		0.46
Lane Grp Cap(c), veh/h	38	1503	672	94	807	811	56	331	281	296	553	539
V/C Ratio(X)	0.34	0.94	0.00	0.49	0.97	0.99	0.37	0.28	0.14	1.10	0.16	0.17
Avail Cap(c_a), veh/h	138	1503	672	138	807	811	138	331	281	296	553	539
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	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	43.4	24.8	14.9	40.6	17.1	17.5	42.7	32.0	31.2	37.5	22.4	22.4
Incr Delay (d2), s/veh	5.1	12.9	0.0	3.9	25.2	28.9	4.0	2.1	1.1	80.4	0.6	0.7
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	0.4	19.4	0.0	1.2	23.8	25.6	0.6	2.2	0.9	13.9	1.7	1.7
LnGrp Delay(d),s/veh	48.5	37.7	14.9	44.5	42.4	46.3	46.7	34.2	32.3	117.9	23.0	23.1
LnGrp LOS	D	D	B	D	D	D	D	C	C	F	C	C
Approach Vol, veh/h		1430			1631			155			504	
Approach Delay, s/veh		37.7			44.4			35.4			84.1	
Approach LOS		D			D			D			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	8.8	42.2	6.9	32.1	5.9	45.1	19.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	36.0	7.0	24.0	7.0	36.0	15.0	16.0
Max Q Clear Time (g_c+I1), s	4.2	36.5	3.0	5.5	2.7	41.8	17.0	5.9
Green Ext Time (p_c), s	0.0	0.0	0.0	1.6	0.0	0.0	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	46.8
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	189	1356	0	945	1079	0	162	0	0	795	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	260		0	275		0	0		0	0		0
Storage Lanes	0		0	0		0	2		0	2		0
Taper Length (ft)	90			190			60			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		241			359			784			672	
Travel Time (s)		4.1			6.1			15.3			13.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Prot			Prot		
Protected Phases	5	2		1	6		3			7		
Permitted Phases												
Detector Phase	5	2		1	6		3			7		
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0			7.0		
Minimum Split (s)	11.0	20.0		11.0	20.0		11.0			11.0		
Total Split (s)	22.0	38.0		28.0	44.0		24.0			24.0		
Total Split (%)	24.4%	42.2%		31.1%	48.9%		26.7%			26.7%		
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5			3.5		
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5			0.5		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0			0.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0			4.0		
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None			None		

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 13 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: I-215 SB/NB Ramps & Eastridge Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	189	1356	0	945	1079	0	162	0	0	795	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	0	1863	1863	0	1863	0	0	1863	0	0
Adj Flow Rate, veh/h	195	1398	0	974	1112	0	167	0	0	820	0	0
Adj No. of Lanes	1	2	0	2	2	0	2	0	0	2	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	0	2	2	0	2	0	0	2	0	0
Cap, veh/h	229	1337	0	918	1825	0	765	0	0	765	0	0
Arrive On Green	0.26	0.76	0.00	0.27	0.52	0.00	0.22	0.00	0.00	0.22	0.00	0.00
Sat Flow, veh/h	1774	3632	0	3442	3632	0	3442	167		3442	820	
Grp Volume(v), veh/h	195	1398	0	974	1112	0	167	28.8		820	88.6	
Grp Sat Flow(s),veh/h/ln	1774	1770	0	1721	1770	0	1721	C		1721	F	
Q Serve(g_s), s	9.4	34.0	0.0	24.0	20.0	0.0	3.6			20.0		
Cycle Q Clear(g_c), s	9.4	34.0	0.0	24.0	20.0	0.0	3.6			20.0		
Prop In Lane	1.00		0.00	1.00		0.00	1.00			1.00		
Lane Grp Cap(c), veh/h	229	1337	0	918	1825	0	765			765		
V/C Ratio(X)	0.85	1.05	0.00	1.06	0.61	0.00	0.22			1.07		
Avail Cap(c_a), veh/h	355	1337	0	918	1825	0	765			765		
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00			1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.95	0.95	0.00	1.00			1.00		
Uniform Delay (d), s/veh	32.6	11.0	0.0	33.0	15.4	0.0	28.6			35.0		
Incr Delay (d2), s/veh	11.5	37.4	0.0	46.7	1.5	0.0	0.1			53.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0		
%ile BackOfQ(50%),veh/ln	5.3	22.2	0.0	17.3	10.1	0.0	1.7			15.2		
LnGrp Delay(d),s/veh	44.1	48.4	0.0	79.7	16.9	0.0	28.8			88.6		
LnGrp LOS	D	F		F	B		C			F		
Approach Vol, veh/h		1593			2086							
Approach Delay, s/veh		47.9			46.2							
Approach LOS		D			D							

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3		5	6	7	
Phs Duration (G+Y+Rc), s	28.0	38.0	24.0		15.6	50.4	24.0	
Change Period (Y+Rc), s	4.0	4.0	4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s	24.0	34.0	20.0		18.0	40.0	20.0	
Max Q Clear Time (g_c+I1), s	26.0	36.0	5.6		11.4	22.0	22.0	
Green Ext Time (p_c), s	0.0	0.0	0.4		0.3	14.8	0.0	

Intersection Summary	
HCM 2010 Ctrl Delay	53.6
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1545	180	0	1241	0	0	0	0	0	0	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (ft)	60			60			60			60		
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		700			241			458			364	
Travel Time (s)		11.9			4.1			8.9			7.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	1545	180	0	1241	0	0	0	0	0	0	343
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	1082	515	456	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1593	186	0	1279	0	0	0	0	0	0	354

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	1279	0	-	1593	0	0	1916	2872	640
Stage 1	-	-	-	-	-	-	1279	1279	-
Stage 2	-	-	-	-	-	-	637	1593	-
Critical Hdwy	4.14	-	-	5.34	-	-	6.29	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.04	5.54	-
Follow-up Hdwy	2.22	-	-	3.12	-	-	3.67	4.02	3.32
Pot Cap-1 Maneuver	539	-	0	200	-	-	79	16	418
Stage 1	-	-	0	-	-	-	220	235	-
Stage 2	-	-	0	-	-	-	458	165	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	539	-	-	200	-	-	79	0	418
Mov Cap-2 Maneuver	-	-	-	-	-	-	166	0	-
Stage 1	-	-	-	-	-	-	220	0	-
Stage 2	-	-	-	-	-	-	458	0	-

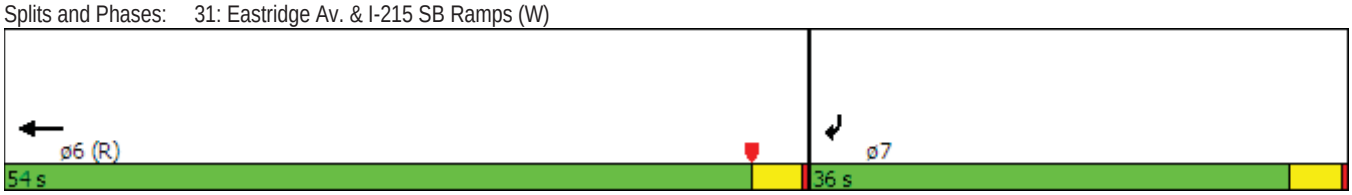
Approach	EB	WB	SB
HCM Control Delay, s	0	0	45.9
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	539	-	200	-	-	418
HCM Lane V/C Ratio	-	-	-	-	-	0.846
HCM Control Delay (s)	0	-	0	-	-	45.9
HCM Lane LOS	A	-	A	-	-	E
HCM 95th %tile Q(veh)	0	-	0	-	-	8.2

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	0	1241	0	0	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	60				60	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		30	
Link Distance (ft)		174	120		486	
Travel Time (s)		3.0	2.0		11.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Turn Type			NA			Prot
Protected Phases			6			7
Permitted Phases						
Detector Phase			6			7
Switch Phase						
Minimum Initial (s)			7.0			7.0
Minimum Split (s)			20.0			11.0
Total Split (s)			54.0			36.0
Total Split (%)			60.0%			40.0%
Yellow Time (s)			3.5			3.5
All-Red Time (s)			0.5			0.5
Lost Time Adjust (s)			0.0			0.0
Total Lost Time (s)			4.0			4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode			C-Max			None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 6:WBT, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	

Splits and Phases: 31: Eastridge Av. & I-215 SB Ramps (W)



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	0	1241	0	0	343
Number			6	16	7	14
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)				1.00	1.00	1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln			1863	0	0	1863
Adj Flow Rate, veh/h			1279	0	0	354
Adj No. of Lanes			2	0	0	1
Peak Hour Factor			0.97	0.97	0.97	0.97
Percent Heavy Veh, %			2	0	0	2
Cap, veh/h			1966	0	0	0
Arrive On Green			0.56	0.00	0.00	0.00
Sat Flow, veh/h			3725	0	0	
Grp Volume(v), veh/h			1279	0	0.0	
Grp Sat Flow(s),veh/h/ln			1770	0		
Q Serve(g_s), s			22.6	0.0		
Cycle Q Clear(g_c), s			22.6	0.0		
Prop In Lane				0.00		
Lane Grp Cap(c), veh/h			1966	0		
V/C Ratio(X)			0.65	0.00		
Avail Cap(c_a), veh/h			1966	0		
HCM Platoon Ratio			1.00	1.00		
Upstream Filter(I)			1.00	0.00		
Uniform Delay (d), s/veh			13.9	0.0		
Incr Delay (d2), s/veh			1.7	0.0		
Initial Q Delay(d3),s/veh			0.0	0.0		
%ile BackOfQ(50%),veh/ln			11.5	0.0		
LnGrp Delay(d),s/veh			15.6	0.0		
LnGrp LOS			B			
Approach Vol, veh/h			1279			
Approach Delay, s/veh			15.6			
Approach LOS			B			

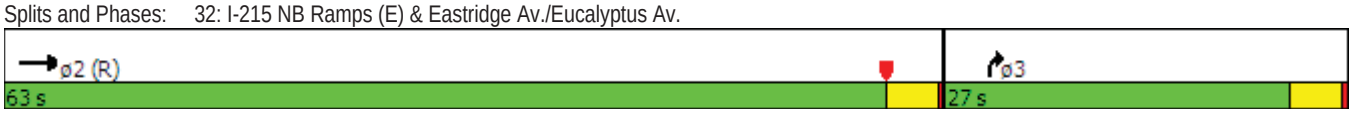
Timer	1	2	3	4	5	6	7	8
Assigned Phs						6		
Phs Duration (G+Y+Rc), s						54.0		
Change Period (Y+Rc), s						4.0		
Max Green Setting (Gmax), s						50.0		
Max Q Clear Time (g_c+I1), s						24.6		
Green Ext Time (p_c), s						10.2		

Intersection Summary	
HCM 2010 Ctrl Delay	15.6
HCM 2010 LOS	B

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2151	0	0	0	0	725
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			40	30	
Link Distance (ft)	100			131	592	
Travel Time (s)	2.3			2.2	13.5	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA					Prot
Protected Phases	2					3
Permitted Phases						
Detector Phase	2					3
Switch Phase						
Minimum Initial (s)	7.0					7.0
Minimum Split (s)	20.0					11.0
Total Split (s)	63.0					27.0
Total Split (%)	70.0%					30.0%
Yellow Time (s)	3.5					3.5
All-Red Time (s)	0.5					0.5
Lost Time Adjust (s)	0.0					0.0
Total Lost Time (s)	4.0					4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max					None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

Splits and Phases: 32: I-215 NB Ramps (E) & Eastridge Av./Eucalyptus Av.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2151	0	0	0	0	725
Number	2	12			3	18
Initial Q (Qb), veh	0	0			0	0
Ped-Bike Adj(A_pbT)		1.00			1.00	1.00
Parking Bus, Adj	1.00	1.00			1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0			0	1863
Adj Flow Rate, veh/h	2218	0			0	747
Adj No. of Lanes	2	0			0	2
Peak Hour Factor	0.97	0.97			0.97	0.97
Percent Heavy Veh, %	2	0			0	2
Cap, veh/h	3382	0			0	0
Arrive On Green	0.96	0.00			0.00	0.00
Sat Flow, veh/h	3725	0			0	
Grp Volume(v), veh/h	2218	0			0.0	
Grp Sat Flow(s),veh/h/ln	1770	0				
Q Serve(g_s), s	6.7	0.0				
Cycle Q Clear(g_c), s	6.7	0.0				
Prop In Lane		0.00				
Lane Grp Cap(c), veh/h	3382	0				
V/C Ratio(X)	0.66	0.00				
Avail Cap(c_a), veh/h	3382	0				
HCM Platoon Ratio	1.00	1.00				
Upstream Filter(I)	1.00	0.00				
Uniform Delay (d), s/veh	0.2	0.0				
Incr Delay (d2), s/veh	1.0	0.0				
Initial Q Delay(d3),s/veh	0.0	0.0				
%ile BackOfQ(50%),veh/ln	3.2	0.0				
LnGrp Delay(d),s/veh	1.2	0.0				
LnGrp LOS	A					
Approach Vol, veh/h	2218					
Approach Delay, s/veh	1.2					
Approach LOS	A					

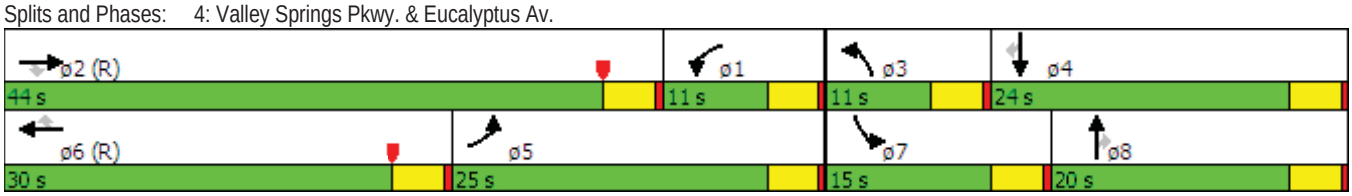
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2						
Phs Duration (G+Y+Rc), s		90.0						
Change Period (Y+Rc), s		4.0						
Max Green Setting (Gmax), s		59.0						
Max Q Clear Time (g_c+I1), s		8.7						
Green Ext Time (p_c), s		34.6						

Intersection Summary	
HCM 2010 Ctrl Delay	1.2
HCM 2010 LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	902	1678	297	42	1126	89	106	181	52	143	260	1369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		360	100		30	150		50	140		0
Storage Lanes	2		1	1		1	1		1	1		2
Taper Length (ft)	200			80			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			40	
Link Distance (ft)		615			2104			825			560	
Travel Time (s)		10.5			35.9			18.8			9.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	20.0
Total Split (s)	25.0	44.0	44.0	11.0	30.0	30.0	11.0	20.0	20.0	15.0	24.0	24.0
Total Split (%)	27.8%	48.9%	48.9%	12.2%	33.3%	33.3%	12.2%	22.2%	22.2%	16.7%	26.7%	26.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Valley Springs Pkwy. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	902	1678	297	42	1126	89	106	181	52	143	260	1369
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	940	1748	309	44	1173	93	110	189	54	149	271	1426
Adj No. of Lanes	2	2	1	1	2	1	1	2	1	1	1	2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	803	1573	704	138	1022	457	138	695	311	184	414	619
Arrive On Green	0.47	0.89	0.89	0.16	0.58	0.58	0.08	0.20	0.20	0.03	0.07	0.07
Sat Flow, veh/h	3442	3539	1583	1774	3539	1583	1774	3539	1583	1774	1863	2787
Grp Volume(v), veh/h	940	1748	309	44	1173	93	110	189	54	149	271	1426
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1770	1583	1774	1770	1583	1774	1863	1393
Q Serve(g_s), s	21.0	40.0	2.2	2.0	26.0	1.8	5.5	4.1	2.0	7.5	12.7	11.7
Cycle Q Clear(g_c), s	21.0	40.0	2.2	2.0	26.0	1.8	5.5	4.1	2.0	7.5	12.7	11.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	803	1573	704	138	1022	457	138	695	311	184	414	619
V/C Ratio(X)	1.17	1.11	0.44	0.32	1.15	0.20	0.80	0.27	0.17	0.81	0.65	2.30
Avail Cap(c_a), veh/h	803	1573	704	138	1022	457	138	695	311	217	414	619
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.15	0.15	0.15	0.63	0.63	0.63	1.00	1.00	1.00	0.79	0.79	0.79
Uniform Delay (d), s/veh	24.0	5.0	1.4	35.9	19.0	7.5	40.8	30.7	18.9	42.6	38.3	14.3
Incr Delay (d2), s/veh	79.0	51.7	0.3	0.8	74.1	0.6	27.0	1.0	1.2	14.5	6.3	590.3
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	18.6	27.5	0.8	1.0	22.7	0.8	3.7	2.1	1.0	4.4	7.3	55.3
LnGrp Delay(d),s/veh	103.0	56.7	1.7	36.7	93.1	8.1	67.8	31.7	20.1	57.0	44.6	604.6
LnGrp LOS	F	F	A	D	F	A	E	C	C	E	D	F
Approach Vol, veh/h		2997			1310			353			1846	
Approach Delay, s/veh		65.6			85.1			41.2			478.2	
Approach LOS		E			F			D			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	11.0	44.0	11.0	24.0	25.0	30.0	13.3	21.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	40.0	7.0	20.0	21.0	26.0	11.0	16.0
Max Q Clear Time (g_c+I1), s	4.0	42.0	7.5	14.7	23.0	28.0	9.5	6.1
Green Ext Time (p_c), s	1.3	0.0	0.0	3.9	0.0	0.0	0.1	6.5

Intersection Summary	
HCM 2010 Ctrl Delay	185.3
HCM 2010 LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	902	1678	297	42	1126	89	106	181	52	143	260	1369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		360	100		30	150		50	140		0
Storage Lanes	2		1	1		1	2		1	1		2
Taper Length (ft)	200			80			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			40	
Link Distance (ft)		615			2104			825			560	
Travel Time (s)		10.5			35.9			18.8			9.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	11.0
Total Split (s)	25.0	48.0	48.0	11.0	34.0	34.0	11.0	20.0	20.0	11.0	20.0	25.0
Total Split (%)	27.8%	53.3%	53.3%	12.2%	37.8%	37.8%	12.2%	22.2%	22.2%	12.2%	22.2%	27.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Valley Springs Pkwy. & Eucalyptus Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	902	1678	297	42	1126	89	106	181	52	143	260	1369
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	940	1748	309	44	1173	93	110	189	54	149	271	1426
Adj No. of Lanes	2	2	1	1	2	1	2	2	1	1	1	2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	828	1822	815	92	1180	528	258	629	281	138	340	1318
Arrive On Green	0.47	1.00	1.00	0.10	0.67	0.67	0.07	0.18	0.18	0.03	0.06	0.06
Sat Flow, veh/h	3548	3539	1583	1774	3539	1583	3548	3539	1583	1774	1863	3167
Grp Volume(v), veh/h	940	1748	309	44	1173	93	110	189	54	149	271	1426
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1863	1583
Q Serve(g_s), s	21.0	0.0	0.0	2.1	29.5	2.0	2.7	4.2	2.6	7.0	12.9	16.4
Cycle Q Clear(g_c), s	21.0	0.0	0.0	2.1	29.5	2.0	2.7	4.2	2.6	7.0	12.9	16.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	828	1822	815	92	1180	528	258	629	281	138	340	1318
V/C Ratio(X)	1.14	0.96	0.38	0.48	0.99	0.18	0.43	0.30	0.19	1.08	0.80	1.08
Avail Cap(c_a), veh/h	828	1822	815	138	1180	528	276	629	281	138	340	1318
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.63	0.63	0.63	1.00	1.00	1.00	0.79	0.79	0.79
Uniform Delay (d), s/veh	24.0	0.0	0.0	39.2	14.9	10.3	39.9	32.1	31.5	43.8	40.6	28.6
Incr Delay (d2), s/veh	75.6	13.4	1.3	2.4	19.6	0.5	1.1	1.2	1.5	91.2	14.2	48.0
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	18.8	3.4	0.3	1.1	16.9	0.9	1.4	2.2	1.3	6.9	8.0	24.9
LnGrp Delay(d),s/veh	99.6	13.4	1.3	41.6	34.5	10.8	41.0	33.4	33.0	135.0	54.8	76.7
LnGrp LOS	F	B	A	D	C	B	D	C	C	F	D	F
Approach Vol, veh/h		2997			1310			353			1846	
Approach Delay, s/veh		39.2			33.0			35.7			78.2	
Approach LOS		D			C			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	8.7	50.3	10.6	20.4	25.0	34.0	11.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	44.0	7.0	16.0	21.0	30.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.1	2.0	4.7	18.4	23.0	31.5	9.0	6.2
Green Ext Time (p_c), s	0.0	35.3	0.1	0.0	0.0	0.0	0.0	6.5

Intersection Summary	
HCM 2010 Ctrl Delay	48.8
HCM 2010 LOS	D

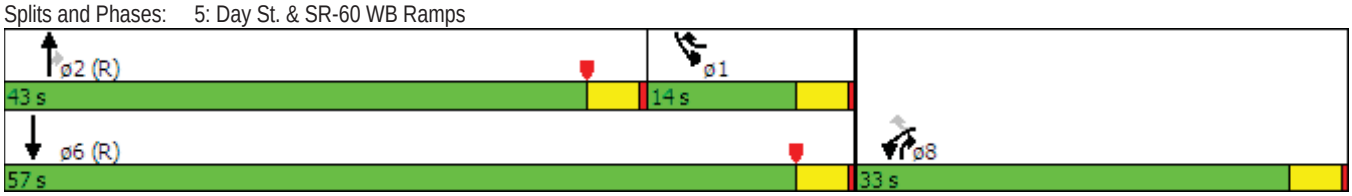
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	672	157	965	674	83	744
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		175	200	
Storage Lanes	2	1		1	1	
Taper Length (ft)	60				80	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		40			40
Link Distance (ft)	307		957			795
Travel Time (s)	7.0		16.3			13.6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)						
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	11.0	20.0	20.0	11.0	20.0
Total Split (s)	33.0	14.0	43.0	33.0	14.0	57.0
Total Split (%)	36.7%	15.6%	47.8%	36.7%	15.6%	63.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag		Lag	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	C-Max	None	None	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 14 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 5: Day St. & SR-60 WB Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	672	157	965	674	83	744
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	693	162	995	695	86	767
Adj No. of Lanes	2	1	2	1	1	2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	829	686	1534	1068	341	2372
Arrive On Green	0.24	0.24	0.87	0.87	0.19	0.67
Sat Flow, veh/h	3442	1583	3632	1583	1774	3632
Grp Volume(v), veh/h	693	162	995	695	86	767
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1774	1770
Q Serve(g_s), s	17.2	0.0	7.7	24.8	3.7	8.2
Cycle Q Clear(g_c), s	17.2	0.0	7.7	24.8	3.7	8.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	829	686	1534	1068	341	2372
V/C Ratio(X)	0.84	0.24	0.65	0.65	0.25	0.32
Avail Cap(c_a), veh/h	1109	815	1534	1068	341	2372
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.55	0.55	1.00	1.00
Uniform Delay (d), s/veh	32.5	16.1	3.9	2.1	30.9	6.3
Incr Delay (d2), s/veh	4.3	0.2	1.2	1.7	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	2.6	3.6	16.3	1.9	4.1
LnGrp Delay(d),s/veh	36.8	16.3	5.1	3.8	31.2	6.6
LnGrp LOS	D	B	A	A	C	A
Approach Vol, veh/h	855		1690			853
Approach Delay, s/veh	32.9		4.6			9.1
Approach LOS	C		A			A

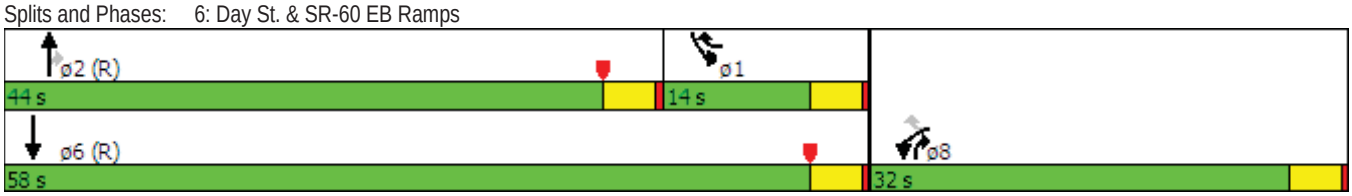
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	21.3	43.0				64.3		25.7
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	10.0	39.0				53.0		29.0
Max Q Clear Time (g_c+I1), s	5.7	26.8				10.2		19.2
Green Ext Time (p_c), s	2.0	7.3				6.1		2.5

Intersection Summary	
HCM 2010 Ctrl Delay	12.8
HCM 2010 LOS	B

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	788	318	1320	1065	171	1244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		0	425	
Storage Lanes	2	0		1	1	
Taper Length (ft)	60				60	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	35		40			40
Link Distance (ft)	263		524			957
Travel Time (s)	5.1		8.9			16.3
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)						
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	11.0	20.0	20.0	11.0	20.0
Total Split (s)	32.0	14.0	44.0	32.0	14.0	58.0
Total Split (%)	35.6%	15.6%	48.9%	35.6%	15.6%	64.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag		Lag	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	None	C-Max	None	None	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 88 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

Splits and Phases: 6: Day St. & SR-60 EB Ramps



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	788	318	1320	1065	171	1244
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	804	324	1347	1087	174	1269
Adj No. of Lanes	2	1	2	1	1	3
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	934	669	1573	1133	268	3254
Arrive On Green	0.27	0.27	0.59	0.59	0.30	1.00
Sat Flow, veh/h	3442	1583	3632	1583	1774	5253
Grp Volume(v), veh/h	804	324	1347	1087	174	1269
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1774	1695
Q Serve(g_s), s	20.0	0.0	28.4	40.0	7.7	0.0
Cycle Q Clear(g_c), s	20.0	0.0	28.4	40.0	7.7	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	934	669	1573	1133	268	3254
V/C Ratio(X)	0.86	0.48	0.86	0.96	0.65	0.39
Avail Cap(c_a), veh/h	1071	732	1573	1133	268	3254
HCM Platoon Ratio	1.00	1.00	1.33	1.33	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.24	0.24	0.84	0.84
Uniform Delay (d), s/veh	31.2	18.9	16.0	6.9	29.3	0.0
Incr Delay (d2), s/veh	6.6	0.5	1.6	6.6	4.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	5.9	14.0	28.9	4.0	0.1
LnGrp Delay(d),s/veh	37.8	19.4	17.6	13.5	33.9	0.3
LnGrp LOS	D	B	B	B	C	A
Approach Vol, veh/h	1128		2434			1443
Approach Delay, s/veh	32.5		15.8			4.4
Approach LOS	C		B			A

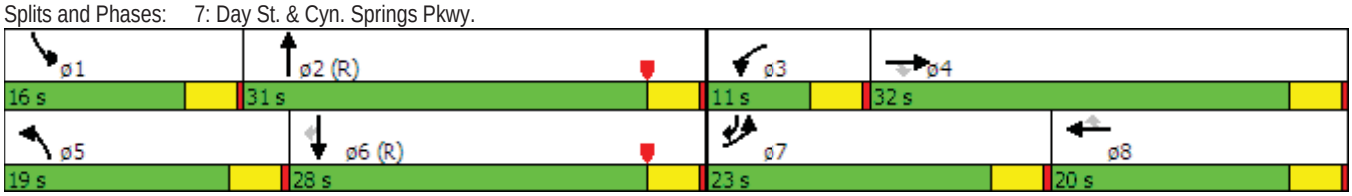
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	17.6	44.0				61.6		28.4
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	10.0	40.0				54.0		28.0
Max Q Clear Time (g_c+I1), s	9.7	42.0				2.0		22.0
Green Ext Time (p_c), s	0.3	0.0				12.7		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	16.3
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	730	133	177	52	79	247	231	1408	65	225	1070	566
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		0	145		0	165		0	170		200
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	95			100			120			80		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			35			40			40	
Link Distance (ft)		1120			404			728			524	
Travel Time (s)		19.1			7.9			12.4			8.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												48%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0		11.0	20.0	11.0
Total Split (s)	23.0	32.0	32.0	11.0	20.0	20.0	19.0	31.0		16.0	28.0	23.0
Total Split (%)	25.6%	35.6%	35.6%	12.2%	22.2%	22.2%	21.1%	34.4%		17.8%	31.1%	25.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 7: Day St. & Cyn. Springs Pkwy.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	730	133	177	52	79	247	231	1408	65	225	1070	566
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	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	745	136	181	53	81	252	236	1437	66	230	1063	597
Adj No. of Lanes	2	1	1	1	1	1	1	3	0	1	3	2
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	727	618	525	101	331	281	269	1495	69	237	1573	1560
Arrive On Green	0.21	0.33	0.33	0.06	0.18	0.18	0.20	0.40	0.40	0.18	0.37	0.37
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	1774	4984	229	1774	5588	3167
Grp Volume(v), veh/h	745	136	181	53	81	252	236	978	525	230	1063	597
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1774	1695	1822	1774	1863	1583
Q Serve(g_s), s	19.0	4.7	7.8	2.6	3.4	14.0	11.6	25.3	25.3	11.6	14.3	10.0
Cycle Q Clear(g_c), s	19.0	4.7	7.8	2.6	3.4	14.0	11.6	25.3	25.3	11.6	14.3	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	727	618	525	101	331	281	269	1017	547	237	1573	1560
V/C Ratio(X)	1.03	0.22	0.34	0.52	0.24	0.90	0.88	0.96	0.96	0.97	0.68	0.38
Avail Cap(c_a), veh/h	727	618	525	138	331	281	296	1017	547	237	1573	1560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
Upstream Filter(I)	0.81	0.81	0.81	1.00	1.00	1.00	0.78	0.78	0.78	0.82	0.82	0.82
Uniform Delay (d), s/veh	35.5	21.7	22.7	41.2	31.8	36.2	35.1	26.5	26.5	36.9	24.7	12.3
Incr Delay (d2), s/veh	36.6	0.1	0.3	4.1	0.4	28.5	18.9	17.3	25.8	45.2	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	12.7	2.4	3.4	1.4	1.8	8.3	7.1	14.1	16.5	8.6	7.6	4.4
LnGrp Delay(d),s/veh	72.1	21.8	23.0	45.4	32.2	64.7	54.0	43.8	52.3	82.1	26.6	12.9
LnGrp LOS	F	C	C	D	C	E	D	D	D	F	C	B
Approach Vol, veh/h		1062			386			1739			1890	
Approach Delay, s/veh		57.3			55.2			47.8			29.0	
Approach LOS		E			E			D			C	

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	31.0	9.1	33.9	17.7	29.3	23.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	27.0	7.0	28.0	15.0	24.0	19.0	16.0
Max Q Clear Time (g_c+I1), s	13.6	27.3	4.6	9.8	13.6	16.3	21.0	16.0
Green Ext Time (p_c), s	0.0	0.0	0.0	2.5	0.1	7.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	43.4
HCM 2010 LOS	D

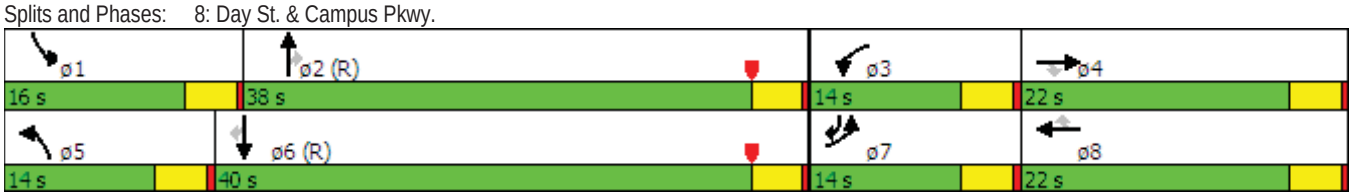
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	214	108	191	93	211	269	212	1221	102	278	960	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		50	200		0	130		50	190		0
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	60			120			120			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			35			40			40	
Link Distance (ft)		938			519			1025			728	
Travel Time (s)		16.0			10.1			17.5			12.4	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	11.0
Total Split (s)	14.0	22.0	22.0	14.0	22.0	22.0	14.0	38.0	38.0	16.0	40.0	14.0
Total Split (%)	15.6%	24.4%	24.4%	15.6%	24.4%	24.4%	15.6%	42.2%	42.2%	17.8%	44.4%	15.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 77 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	

Splits and Phases: 8: Day St. & Campus Pkwy.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	214	108	191	93	211	269	212	1221	102	278	960	67
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	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	223	112	199	97	220	280	221	1272	106	290	1000	70
Adj No. of Lanes	2	1	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	299	396	336	126	695	311	301	2206	687	362	2297	853
Arrive On Green	0.09	0.21	0.21	0.07	0.20	0.20	0.03	0.14	0.14	0.21	0.90	0.90
Sat Flow, veh/h	3442	1863	1583	1774	3539	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	223	112	199	97	220	280	221	1272	106	290	1000	70
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1770	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	5.7	4.5	10.2	4.8	4.8	15.5	5.7	21.0	5.3	7.2	2.8	0.4
Cycle Q Clear(g_c), s	5.7	4.5	10.2	4.8	4.8	15.5	5.7	21.0	5.3	7.2	2.8	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	299	396	336	126	695	311	301	2206	687	362	2297	853
V/C Ratio(X)	0.75	0.28	0.59	0.77	0.32	0.90	0.74	0.58	0.15	0.80	0.44	0.08
Avail Cap(c_a), veh/h	382	396	336	197	708	317	382	2206	687	459	2297	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.72	0.72	0.72	0.70	0.70	0.70
Uniform Delay (d), s/veh	40.1	29.7	31.9	41.1	31.0	35.3	42.7	30.8	24.1	34.6	2.5	1.7
Incr Delay (d2), s/veh	5.8	0.4	2.8	9.5	0.3	26.9	3.9	0.8	0.3	5.6	0.4	0.1
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	2.9	2.4	4.7	2.7	2.4	9.1	2.9	10.0	2.4	3.7	1.2	0.2
LnGrp Delay(d),s/veh	45.9	30.1	34.7	50.6	31.3	62.2	46.6	31.6	24.4	40.2	2.9	1.8
LnGrp LOS	D	C	C	D	C	E	D	C	C	D	A	A
Approach Vol, veh/h		534			597			1599			1360	
Approach Delay, s/veh		38.4			48.9			33.2			10.8	
Approach LOS		D			D			C			B	

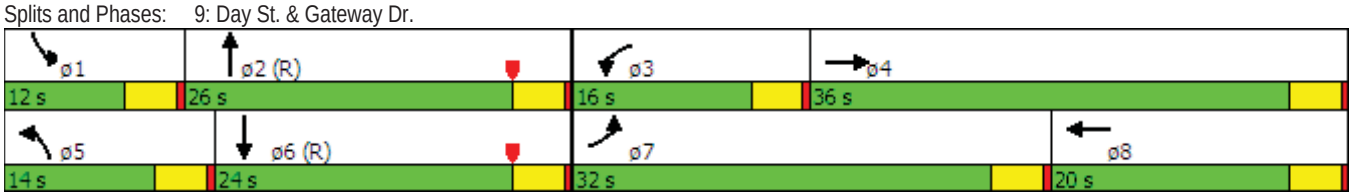
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	43.0	10.4	23.1	11.9	44.6	11.8	21.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	34.0	10.0	18.0	10.0	36.0	10.0	18.0
Max Q Clear Time (g_c+I1), s	9.2	23.0	6.8	12.2	7.7	4.8	7.7	17.5
Green Ext Time (p_c), s	0.3	9.2	0.1	1.9	0.2	21.1	0.2	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	404	141	187	129	121	200	120	742	130	223	725	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	100		0	190		400	260		0
Storage Lanes	1		0	1		0	1		1	2		0
Taper Length (ft)	0			120			60			165		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			35			40			40	
Link Distance (ft)		318			585			592			1025	
Travel Time (s)		5.4			11.4			10.1			17.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	20.0		11.0	20.0		11.0	20.0		11.0	20.0	
Total Split (s)	32.0	36.0		16.0	20.0		14.0	26.0		12.0	24.0	
Total Split (%)	35.6%	40.0%		17.8%	22.2%		15.6%	28.9%		13.3%	26.7%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 22 (24%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	

Splits and Phases: 9: Day St. & Gateway Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	404	141	187	129	121	200	120	742	130	223	725	169
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	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	412	144	191	132	123	204	122	757	133	228	740	172
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	2	3	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	460	576	515	164	281	251	150	1379	240	302	1320	304
Arrive On Green	0.09	0.11	0.11	0.09	0.16	0.16	0.17	0.63	0.63	0.03	0.11	0.11
Sat Flow, veh/h	1774	1770	1583	1774	1770	1583	1774	4360	759	3442	4134	951
Grp Volume(v), veh/h	412	144	191	132	123	204	122	587	303	228	605	307
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1695	1729	1721	1695	1695
Q Serve(g_s), s	20.7	6.7	10.1	6.6	5.7	11.2	6.0	8.8	8.9	5.9	15.3	15.5
Cycle Q Clear(g_c), s	20.7	6.7	10.1	6.6	5.7	11.2	6.0	8.8	8.9	5.9	15.3	15.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.44	1.00		0.56
Lane Grp Cap(c), veh/h	460	576	515	164	281	251	150	1073	547	302	1083	541
V/C Ratio(X)	0.90	0.25	0.37	0.80	0.44	0.81	0.81	0.55	0.55	0.75	0.56	0.57
Avail Cap(c_a), veh/h	552	629	563	237	315	281	197	1073	547	306	1083	541
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	39.9	30.1	31.6	40.0	34.2	36.6	36.7	12.9	12.9	42.7	34.2	34.3
Incr Delay (d2), s/veh	15.2	0.2	0.4	12.1	1.1	15.0	17.2	2.0	4.0	9.2	1.9	3.8
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	0.0
%ile BackOfQ(50%),veh/ln	12.1	3.3	4.5	3.8	2.9	5.9	3.6	4.2	4.6	3.2	7.5	7.9
LnGrp Delay(d),s/veh	55.2	30.3	32.0	52.1	35.3	51.5	53.9	14.9	16.9	51.9	36.1	38.2
LnGrp LOS	E	C	C	D	D	D	D	B	B	D	D	D
Approach Vol, veh/h		747			459			1012			1140	
Approach Delay, s/veh		44.5			47.3			20.2			39.8	
Approach LOS		D			D			C			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	11.9	32.5	12.3	33.3	11.6	32.7	27.3	18.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	22.0	12.0	32.0	10.0	20.0	28.0	16.0
Max Q Clear Time (g_c+I1), s	7.9	10.9	8.6	12.1	8.0	17.5	22.7	13.2
Green Ext Time (p_c), s	0.0	7.6	0.1	3.8	0.1	2.1	0.6	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	36.0
HCM 2010 LOS	D

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	77	24	1204	1069	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	0	1	1			0
Taper Length (ft)	60		30			
Link Speed (mph)	30			40	40	
Link Distance (ft)	364			180	592	
Travel Time (s)	8.3			3.1	10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	77	24	1204	1069	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	80	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	84	26	1309	1162	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1875	588	1175	0	-	0
Stage 1	1168	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Critical Hdwy	6.29	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.67	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	83	387	322	-	-	-
Stage 1	195	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	76	387	322	-	-	-
Mov Cap-2 Maneuver	149	-	-	-	-	-
Stage 1	195	-	-	-	-	-
Stage 2	402	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.9	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	322	-	387	-	-
HCM Lane V/C Ratio	0.081	-	0.216	-	-
HCM Control Delay (s)	17.2	-	16.9	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0.3	-	0.8	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	13	36	2	1214	1141	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	25			0
Storage Lanes	1	0	1			0
Taper Length (ft)	60		25			
Link Speed (mph)	30			40	40	
Link Distance (ft)	364			453	180	
Travel Time (s)	8.3			7.7	3.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	13	36	2	1214	1141	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	1	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	39	2	1305	1227	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1887	616	1232	0	-	0
Stage 1	1230	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Critical Hdwy	6.29	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.67	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	82	372	302	-	-	-
Stage 1	178	-	-	-	-	-
Stage 2	464	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	81	372	302	-	-	-
Mov Cap-2 Maneuver	144	-	-	-	-	-
Stage 1	178	-	-	-	-	-
Stage 2	461	-	-	-	-	-

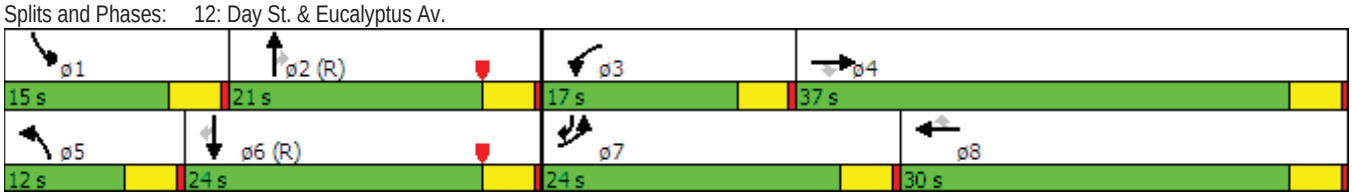
Approach	EB	NB	SB
HCM Control Delay, s	22.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	302	-	262	-	-
HCM Lane V/C Ratio	0.007	-	0.201	-	-
HCM Control Delay (s)	17	-	22.2	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	300	1303	217	255	833	165	103	527	368	225	578	333
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	175		0	100		100	200		0
Storage Lanes	1		1	1		1	1		2	1		1
Taper Length (ft)	100			75			80			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			35			40	
Link Distance (ft)		2104			1174			390			453	
Travel Time (s)		35.9			20.0			7.6			7.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	11.0
Total Split (s)	24.0	37.0	37.0	17.0	30.0	30.0	12.0	21.0	21.0	15.0	24.0	24.0
Total Split (%)	26.7%	41.1%	41.1%	18.9%	33.3%	33.3%	13.3%	23.3%	23.3%	16.7%	26.7%	26.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 15 (17%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 12: Day St. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	300	1303	217	255	833	165	103	527	368	225	578	333
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	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	316	1372	228	268	877	174	108	555	387	237	608	351
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	357	1298	581	256	1097	491	136	669	299	217	830	690
Arrive On Green	0.07	0.12	0.12	0.14	0.31	0.31	0.08	0.19	0.19	0.04	0.08	0.08
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	316	1372	228	268	877	174	108	555	387	237	608	351
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	15.9	33.0	12.0	13.0	20.5	7.7	5.4	13.6	17.0	11.0	15.1	14.6
Cycle Q Clear(g_c), s	15.9	33.0	12.0	13.0	20.5	7.7	5.4	13.6	17.0	11.0	15.1	14.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	357	1298	581	256	1097	491	136	669	299	217	830	690
V/C Ratio(X)	0.89	1.06	0.39	1.05	0.80	0.35	0.79	0.83	1.29	1.09	0.73	0.51
Avail Cap(c_a), veh/h	394	1298	581	256	1097	491	158	669	299	217	830	690
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.19	0.19	0.19	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	39.6	30.3	38.5	28.5	24.1	40.8	35.1	36.5	43.2	38.8	22.3
Incr Delay (d2), s/veh	4.7	30.0	0.1	68.7	4.3	0.4	21.0	11.4	154.9	88.2	5.7	2.7
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	8.3	21.6	5.3	11.2	10.6	3.4	3.4	7.7	20.3	10.7	8.1	6.9
LnGrp Delay(d),s/veh	45.7	69.5	30.4	107.2	32.8	24.5	61.9	46.6	191.4	131.4	44.4	24.9
LnGrp LOS	D	F	C	F	C	C	E	D	F	F	D	C
Approach Vol, veh/h		1916			1319			1050			1196	
Approach Delay, s/veh		61.0			46.8			101.5			55.9	
Approach LOS		E			D			F			E	

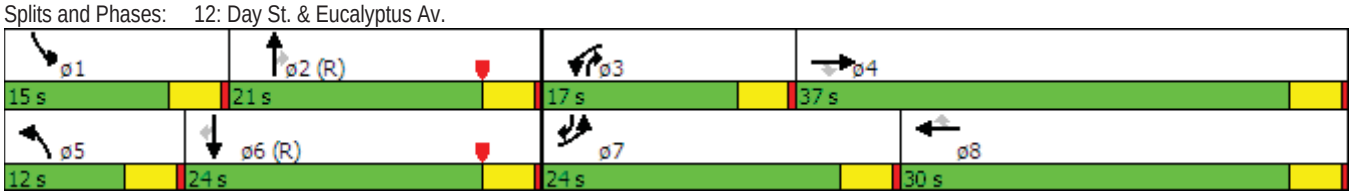
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	21.0	17.0	37.0	10.9	25.1	22.1	31.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	17.0	13.0	33.0	8.0	20.0	20.0	26.0
Max Q Clear Time (g_c+I1), s	13.0	19.0	15.0	35.0	7.4	17.1	17.9	22.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.3	0.2	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	64.2
HCM 2010 LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	300	1303	217	255	833	165	103	527	368	225	578	333
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	175		0	100		100	200		0
Storage Lanes	1		1	1		1	1		2	1		1
Taper Length (ft)	100			75			80			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			35			40	
Link Distance (ft)		2104			1174			390			453	
Travel Time (s)		35.9			20.0			7.6			7.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	11.0	11.0	20.0	11.0
Total Split (s)	24.0	37.0	37.0	17.0	30.0	30.0	12.0	21.0	17.0	15.0	24.0	24.0
Total Split (%)	26.7%	41.1%	41.1%	18.9%	33.3%	33.3%	13.3%	23.3%	18.9%	16.7%	26.7%	26.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 7 (8%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 12: Day St. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	300	1303	217	255	833	165	103	527	368	225	578	333
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	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	316	1372	228	268	877	174	108	555	387	237	608	351
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	357	1298	581	256	1097	491	136	669	528	217	830	690
Arrive On Green	0.07	0.12	0.12	0.14	0.31	0.31	0.08	0.19	0.19	0.12	0.23	0.23
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	316	1372	228	268	877	174	108	555	387	237	608	351
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	15.9	33.0	12.0	13.0	20.5	7.7	5.4	13.6	17.0	11.0	14.3	14.5
Cycle Q Clear(g_c), s	15.9	33.0	12.0	13.0	20.5	7.7	5.4	13.6	17.0	11.0	14.3	14.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	357	1298	581	256	1097	491	136	669	528	217	830	690
V/C Ratio(X)	0.89	1.06	0.39	1.05	0.80	0.35	0.79	0.83	0.73	1.09	0.73	0.51
Avail Cap(c_a), veh/h	394	1298	581	256	1097	491	158	669	528	217	830	690
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.29	0.29	0.29	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	39.6	30.3	38.5	28.5	24.1	40.8	35.1	26.5	39.5	31.8	18.4
Incr Delay (d2), s/veh	6.9	31.9	0.1	68.7	4.3	0.4	21.0	11.4	8.7	88.2	5.7	2.7
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	8.5	21.9	5.3	11.2	10.6	3.4	3.4	7.7	9.8	10.7	7.7	6.8
LnGrp Delay(d),s/veh	47.9	71.4	30.4	107.2	32.8	24.5	61.9	46.6	35.2	127.7	37.5	21.1
LnGrp LOS	D	F	C	F	C	C	E	D	D	F	D	C
Approach Vol, veh/h		1916			1319			1050			1196	
Approach Delay, s/veh		62.7			46.8			43.9			50.6	
Approach LOS		E			D			D			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	15.0	21.0	17.0	37.0	10.9	25.1	22.1	31.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	17.0	13.0	33.0	8.0	20.0	20.0	26.0
Max Q Clear Time (g_c+I1), s	13.0	19.0	15.0	35.0	7.4	16.5	17.9	22.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.8	0.2	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	52.6
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	139	55	146	154	265	79	656	109	272	607	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	95		95	80		0	100		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	60			100			60			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		861			839			1320			2260	
Travel Time (s)		16.8			16.3			36.0			44.0	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	20.0		11.0	20.0	20.0	11.0	20.0		11.0	20.0	
Total Split (s)	11.0	20.0		11.0	20.0	20.0	11.0	42.0		17.0	48.0	
Total Split (%)	12.2%	22.2%		12.2%	22.2%	22.2%	12.2%	46.7%		18.9%	53.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
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)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	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	C-Max		None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	

Splits and Phases: 13: Day St. & Cottonwood Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	26	139	55	146	154	265	79	656	109	272	607	24
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	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	30	158	62	166	175	301	90	745	124	309	690	27
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	187	73	138	342	291	123	706	118	256	940	37
Arrive On Green	0.04	0.15	0.15	0.08	0.18	0.18	0.07	0.45	0.45	0.14	0.53	0.53
Sat Flow, veh/h	1774	1274	500	1774	1863	1583	1774	1558	259	1774	1781	70
Grp Volume(v), veh/h	30	0	220	166	175	301	90	0	869	309	0	717
Grp Sat Flow(s),veh/h/ln	1774	0	1774	1774	1863	1583	1774	0	1817	1774	0	1850
Q Serve(g_s), s	1.5	0.0	10.9	7.0	7.6	16.5	4.5	0.0	40.8	13.0	0.0	26.9
Cycle Q Clear(g_c), s	1.5	0.0	10.9	7.0	7.6	16.5	4.5	0.0	40.8	13.0	0.0	26.9
Prop In Lane	1.00		0.28	1.00		1.00	1.00		0.14	1.00		0.04
Lane Grp Cap(c), veh/h	73	0	260	138	342	291	123	0	824	256	0	977
V/C Ratio(X)	0.41	0.00	0.84	1.20	0.51	1.04	0.73	0.00	1.06	1.21	0.00	0.73
Avail Cap(c_a), veh/h	138	0	315	138	342	291	138	0	824	256	0	977
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	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.1	0.0	37.4	41.5	33.1	36.7	41.0	0.0	24.6	38.5	0.0	16.4
Incr Delay (d2), s/veh	3.7	0.0	16.1	141.3	1.3	62.5	15.8	0.0	46.9	123.5	0.0	4.9
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	0.8	0.0	6.5	8.8	4.1	12.3	2.7	0.0	31.1	15.1	0.0	14.9
LnGrp Delay(d),s/veh	45.8	0.0	53.5	182.8	34.4	99.2	56.8	0.0	71.5	162.0	0.0	21.2
LnGrp LOS	D		D	F	C	F	E		F	F		C
Approach Vol, veh/h		250			642			959			1026	
Approach Delay, s/veh		52.6			103.2			70.2			63.6	
Approach LOS		D			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	17.0	44.8	11.0	17.2	10.3	51.5	7.7	20.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	38.0	7.0	16.0	7.0	44.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	15.0	42.8	9.0	12.9	6.5	28.9	3.5	18.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.3	0.0	9.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	73.7
HCM 2010 LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	139	55	146	154	265	79	656	109	272	607	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	95		95	80		100	100		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	60			100			60			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		861			839			811			2260	
Travel Time (s)		16.8			16.3			22.1			44.0	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phase	7	4		3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	20.0		11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	
Total Split (s)	11.0	20.0		12.0	21.0	21.0	11.0	39.0	39.0	19.0	47.0	
Total Split (%)	12.2%	22.2%		13.3%	23.3%	23.3%	12.2%	43.3%	43.3%	21.1%	52.2%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
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)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	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	C-Max	C-Max	None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 19 (21%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 13: Day St. & Cottonwood Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	26	139	55	146	154	265	79	656	109	272	607	24
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	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	30	158	62	166	175	301	90	745	124	309	690	27
Adj No. of Lanes	1	1	0	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	187	73	158	362	308	123	782	665	296	921	36
Arrive On Green	0.04	0.15	0.15	0.09	0.19	0.19	0.07	0.42	0.42	0.17	0.52	0.52
Sat Flow, veh/h	1774	1274	500	1774	1863	1583	1774	1863	1583	1774	1781	70
Grp Volume(v), veh/h	30	0	220	166	175	301	90	745	124	309	0	717
Grp Sat Flow(s),veh/h/ln	1774	0	1774	1774	1863	1583	1774	1863	1583	1774	0	1850
Q Serve(g_s), s	1.5	0.0	10.9	8.0	7.5	17.0	4.5	34.8	4.4	15.0	0.0	27.5
Cycle Q Clear(g_c), s	1.5	0.0	10.9	8.0	7.5	17.0	4.5	34.8	4.4	15.0	0.0	27.5
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	73	0	260	158	362	308	123	782	665	296	0	957
V/C Ratio(X)	0.41	0.00	0.84	1.05	0.48	0.98	0.73	0.95	0.19	1.05	0.00	0.75
Avail Cap(c_a), veh/h	138	0	315	158	362	308	138	782	665	296	0	957
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.1	0.0	37.4	41.0	32.2	36.0	41.0	25.2	16.4	37.5	0.0	17.1
Incr Delay (d2), s/veh	3.7	0.0	16.1	86.3	1.0	44.8	15.8	22.5	0.6	64.6	0.0	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	6.5	7.7	3.9	11.2	2.7	22.7	2.1	12.6	0.0	15.4
LnGrp Delay(d),s/veh	45.8	0.0	53.5	127.4	33.2	80.9	56.8	47.7	17.0	102.1	0.0	22.5
LnGrp LOS	D		D	F	C	F	E	D	B	F		C
Approach Vol, veh/h		250			642			959			1026	
Approach Delay, s/veh		52.6			79.9			44.6			46.5	
Approach LOS		D			E			D			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	19.0	41.8	12.0	17.2	10.3	50.5	7.7	21.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	35.0	8.0	16.0	7.0	43.0	7.0	17.0
Max Q Clear Time (g_c+I1), s	17.0	36.8	10.0	12.9	6.5	29.5	3.5	19.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.3	0.0	8.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	53.8
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	45	14	10	24	26	13	792	7	35	766	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50	0		50	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	60			60			60			60		
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		861			839			634			1320	
Travel Time (s)		19.6			19.1			17.3			36.0	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	54.4
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	14	45	14	0	10	24	26	0	13	792	7
Peak Hour Factor	0.92	0.91	0.91	0.91	0.92	0.91	0.91	0.91	0.92	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	49	15	0	11	26	29	0	14	870	8
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	11.7	11.1	57.9
HCM LOS	B	B	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	2%	24%	0%	29%	0%	4%
Vol Thru, %	98%	76%	0%	71%	0%	93%
Vol Right, %	1%	0%	100%	0%	100%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	812	59	14	34	26	820
LT Vol	13	14	0	10	0	35
Through Vol	792	45	0	24	0	766
RT Vol	7	0	14	0	26	19
Lane Flow Rate	892	65	15	37	29	901
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	1	0.144	0.031	0.084	0.058	1
Departure Headway (Hd)	5.39	8.015	7.197	8.111	7.265	5.387
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	678	449	499	443	494	676
Service Time	3.441	5.737	4.919	5.835	4.989	3.437
HCM Lane V/C Ratio	1.316	0.145	0.03	0.084	0.059	1.333
HCM Control Delay	57.9	12.1	10.1	11.6	10.4	57.9
HCM Lane LOS	F	B	B	B	B	F
HCM 95th-tile Q	15.8	0.5	0.1	0.3	0.2	15.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	35	766	19
Peak Hour Factor	0.92	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	38	842	21
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	57.9
HCM LOS	F

Lane

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	45	14	10	24	26	13	792	7	35	766	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50	0		50	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	60			60			60			60		
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		861			839			634			509	
Travel Time (s)		19.6			19.1			17.3			13.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	28.6
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	14	45	14	0	10	24	26	0	13	792	7
Peak Hour Factor	0.92	0.91	0.91	0.91	0.92	0.91	0.91	0.91	0.92	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	49	15	0	11	26	29	0	14	870	8
Number of Lanes	0	0	1	1	0	0	1	1	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	12.6	11.8	29.6
HCM LOS	B	B	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	3%	0%	24%	0%	29%	0%	8%	0%
Vol Thru, %	97%	98%	76%	0%	71%	0%	92%	95%
Vol Right, %	0%	2%	0%	100%	0%	100%	0%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	409	403	59	14	34	26	418	402
LT Vol	13	0	14	0	10	0	35	0
Through Vol	396	396	45	0	24	0	383	383
RT Vol	0	7	0	14	0	26	0	19
Lane Flow Rate	449	443	65	15	37	29	459	442
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.8	0.785	0.157	0.034	0.091	0.063	0.82	0.779
Departure Headway (Hd)	6.409	6.38	8.696	7.85	8.781	7.905	6.423	6.347
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	562	562	415	459	410	455	560	565
Service Time	4.206	4.177	6.399	5.553	6.488	5.611	4.22	4.144
HCM Lane V/C Ratio	0.799	0.788	0.157	0.033	0.09	0.064	0.82	0.782
HCM Control Delay	30.3	28.8	13	10.8	12.4	11.1	32.3	28.2
HCM Lane LOS	D	D	B	B	B	B	D	D
HCM 95th-tile Q	7.7	7.3	0.6	0.1	0.3	0.2	8.2	7.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	35	766	19
Peak Hour Factor	0.92	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	38	842	21
Number of Lanes	0	0	2	0

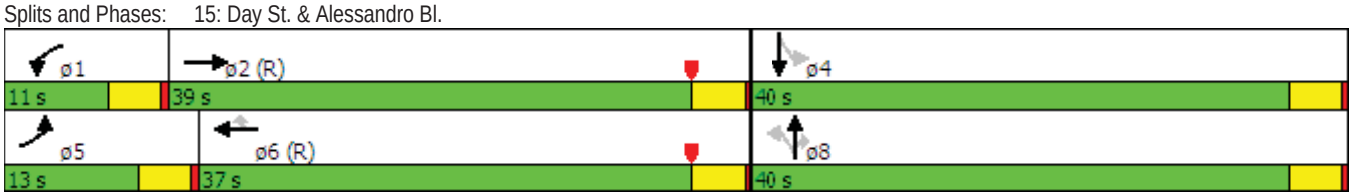
Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	30.3
HCM LOS	D

Lane

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	219	1890	101	102	1312	146	156	447	159	223	337	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	245		0	220		75	50		50	200		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			120			90			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			35			25	
Link Distance (ft)		861			839			831			716	
Travel Time (s)		13.0			12.7			16.2			19.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	20.0		11.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	13.0	39.0		11.0	37.0	37.0	40.0	40.0	40.0	40.0	40.0	
Total Split (%)	14.4%	43.3%		12.2%	41.1%	41.1%	44.4%	44.4%	44.4%	44.4%	44.4%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
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)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	

Splits and Phases: 15: Day St. & Alessandro Bl.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	219	1890	101	102	1312	146	156	447	159	223	337	205
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	233	2011	107	109	1396	155	166	476	169	237	359	218
Adj No. of Lanes	1	3	0	1	2	1	1	1	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	177	1926	102	137	1298	581	167	745	633	232	435	264
Arrive On Green	0.10	0.39	0.39	0.08	0.37	0.37	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1774	4945	262	1774	3539	1583	833	1863	1583	782	1087	660
Grp Volume(v), veh/h	233	1377	741	109	1396	155	166	476	169	237	0	577
Grp Sat Flow(s),veh/h/ln	1774	1695	1816	1774	1770	1583	833	1863	1583	782	0	1746
Q Serve(g_s), s	9.0	35.1	35.1	5.4	33.0	6.2	9.4	18.5	6.5	17.5	0.0	26.6
Cycle Q Clear(g_c), s	9.0	35.1	35.1	5.4	33.0	6.2	36.0	18.5	6.5	36.0	0.0	26.6
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	177	1320	707	137	1298	581	167	745	633	232	0	699
V/C Ratio(X)	1.31	1.04	1.05	0.80	1.08	0.27	1.00	0.64	0.27	1.02	0.00	0.83
Avail Cap(c_a), veh/h	177	1320	707	138	1298	581	167	745	633	232	0	699
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	0.00	1.00
Uniform Delay (d), s/veh	40.5	27.5	27.5	40.8	28.5	20.0	42.6	21.8	18.1	39.3	0.0	24.2
Incr Delay (d2), s/veh	175.2	36.6	47.1	26.6	48.1	1.1	68.8	4.2	1.0	65.1	0.0	10.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.0	23.0	26.7	3.7	24.7	2.9	7.3	10.4	3.0	9.9	0.0	14.9
LnGrp Delay(d),s/veh	215.7	64.1	74.5	67.4	76.6	21.1	111.4	25.9	19.2	104.5	0.0	35.0
LnGrp LOS	F	F	F	E	F	C	F	C	B	F		C
Approach Vol, veh/h		2351			1660			811			814	
Approach Delay, s/veh		82.4			70.8			42.0			55.2	
Approach LOS		F			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.9	39.1		40.0	13.0	37.0		40.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	7.0	35.0		36.0	9.0	33.0		36.0
Max Q Clear Time (g_c+I1), s	7.4	37.1		38.0	11.0	35.0		38.0
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	69.3
HCM 2010 LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	219	1890	101	102	1312	146	156	447	159	223	337	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	245		0	220		75	50		50	200		100
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (ft)	100			120			90			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			35			25	
Link Distance (ft)		861			839			831			716	
Travel Time (s)		13.0			12.7			16.2			19.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						4
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	11.0	20.0		11.0	20.0	20.0	11.0	20.0		11.0	20.0	20.0
Total Split (s)	11.0	42.0		11.0	42.0	42.0	13.0	20.0		17.0	24.0	24.0
Total Split (%)	12.2%	46.7%		12.2%	46.7%	46.7%	14.4%	22.2%		18.9%	26.7%	26.7%
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
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)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max		None	C-Max	C-Max	None	Max		None	Max	Max

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 15: Day St. & Alessandro Bl.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	219	1890	101	102	1312	146	156	447	159	223	337	205
Number	5	2	12	1	6	16	3	8	18	7	4	14
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	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	233	2011	107	109	1396	155	166	476	169	237	359	218
Adj No. of Lanes	2	3	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	2090	111	137	1494	669	177	456	161	256	414	352
Arrive On Green	0.08	0.42	0.42	0.08	0.42	0.42	0.10	0.18	0.18	0.14	0.22	0.22
Sat Flow, veh/h	3442	4945	262	1774	3539	1583	1774	2567	905	1774	1863	1583
Grp Volume(v), veh/h	233	1377	741	109	1396	155	166	327	318	237	359	218
Grp Sat Flow(s),veh/h/ln	1721	1695	1816	1774	1770	1583	1774	1770	1703	1774	1863	1583
Q Serve(g_s), s	6.0	35.5	35.8	5.4	33.9	5.6	8.4	16.0	16.0	11.9	16.7	11.2
Cycle Q Clear(g_c), s	6.0	35.5	35.8	5.4	33.9	5.6	8.4	16.0	16.0	11.9	16.7	11.2
Prop In Lane	1.00		0.14	1.00		1.00	1.00		0.53	1.00		1.00
Lane Grp Cap(c), veh/h	268	1433	768	137	1494	669	177	315	303	256	414	352
V/C Ratio(X)	0.87	0.96	0.97	0.80	0.93	0.23	0.94	1.04	1.05	0.92	0.87	0.62
Avail Cap(c_a), veh/h	268	1433	768	138	1494	669	177	315	303	256	414	352
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	41.1	25.2	25.3	40.8	24.8	16.7	40.2	37.0	37.0	38.0	33.7	31.6
Incr Delay (d2), s/veh	25.1	16.0	25.0	26.6	12.1	0.8	49.2	61.5	65.4	36.6	21.0	8.0
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	3.8	19.6	23.3	3.7	19.0	2.6	6.5	13.1	13.0	8.4	11.0	5.7
LnGrp Delay(d),s/veh	66.2	41.3	50.4	67.4	36.9	17.5	89.4	98.5	102.4	74.6	54.7	39.5
LnGrp LOS	E	D	D	E	D	B	F	F	F	E	D	D
Approach Vol, veh/h		2351			1660			811			814	
Approach Delay, s/veh		46.6			37.1			98.2			56.5	
Approach LOS		D			D			F			E	

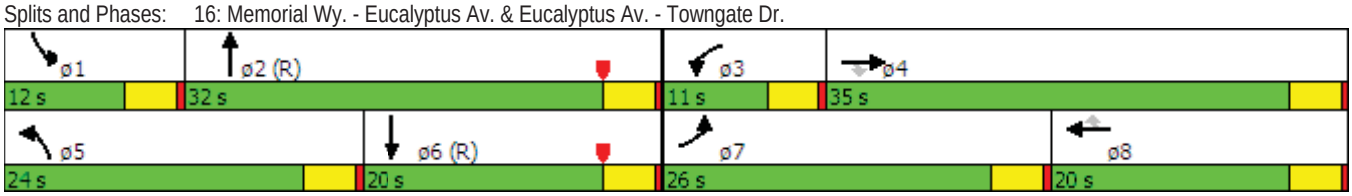
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	42.1	13.0	24.0	11.0	42.0	17.0	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	38.0	9.0	20.0	7.0	38.0	13.0	16.0
Max Q Clear Time (g_c+I1), s	7.4	37.8	10.4	18.7	8.0	35.9	13.9	18.0
Green Ext Time (p_c), s	0.0	0.2	0.0	0.9	0.0	2.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	52.7
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	457	664	612	29	509	67	410	293	22	59	299	309
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	165		50	150		50	200		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	80			100			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1034			1432			824			534	
Travel Time (s)		17.6			24.4			14.0			9.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0		11.0	20.0	
Total Split (s)	26.0	35.0	35.0	11.0	20.0	20.0	24.0	32.0		12.0	20.0	
Total Split (%)	28.9%	38.9%	38.9%	12.2%	22.2%	22.2%	26.7%	35.6%		13.3%	22.2%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	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	C-Max		None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 16: Memorial Wy. - Eucalyptus Av. & Eucalyptus Av. - Towngate Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	457	664	612	29	509	67	410	293	22	59	299	309
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	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	486	706	651	31	541	71	436	312	23	63	318	329
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	434	1329	595	74	613	274	394	1147	84	109	323	289
Arrive On Green	0.24	0.38	0.38	0.04	0.17	0.17	0.22	0.34	0.34	0.06	0.18	0.18
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3344	245	1774	1770	1583
Grp Volume(v), veh/h	486	706	651	31	541	71	436	164	171	63	318	329
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1819	1774	1770	1583
Q Serve(g_s), s	22.0	14.0	33.8	1.5	13.4	3.5	20.0	6.1	6.1	3.1	16.1	16.4
Cycle Q Clear(g_c), s	22.0	14.0	33.8	1.5	13.4	3.5	20.0	6.1	6.1	3.1	16.1	16.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	434	1329	595	74	613	274	394	607	624	109	323	289
V/C Ratio(X)	1.12	0.53	1.09	0.42	0.88	0.26	1.11	0.27	0.27	0.58	0.98	1.14
Avail Cap(c_a), veh/h	434	1329	595	138	629	281	394	607	624	158	323	289
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	34.0	21.9	28.1	42.0	36.3	32.2	35.0	21.4	21.4	41.1	36.7	36.8
Incr Delay (d2), s/veh	80.4	0.4	65.4	3.7	13.7	0.5	77.1	1.1	1.1	4.7	46.4	95.7
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	20.4	6.8	25.5	0.8	7.7	1.6	18.2	3.2	3.3	1.7	12.0	14.8
LnGrp Delay(d),s/veh	114.4	22.3	93.5	45.7	50.1	32.7	112.1	22.5	22.5	45.8	83.0	132.5
LnGrp LOS	F	C	F	D	D	C	F	C	C	D	F	F
Approach Vol, veh/h		1843			643			771			710	
Approach Delay, s/veh		71.8			47.9			73.2			102.7	
Approach LOS		E			D			E			F	

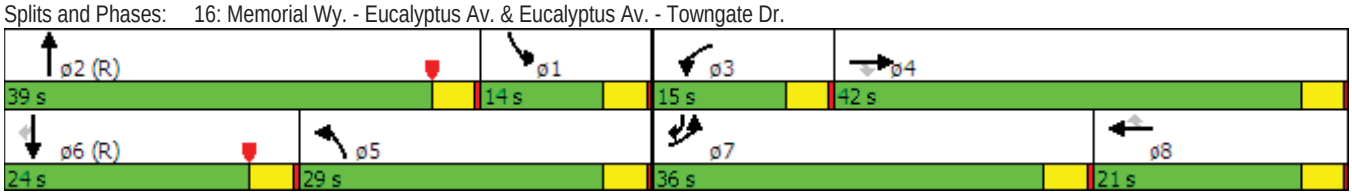
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	34.9	7.8	37.8	24.0	20.4	26.0	19.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	28.0	7.0	31.0	20.0	16.0	22.0	16.0
Max Q Clear Time (g_c+I1), s	5.1	8.1	3.5	35.8	22.0	18.4	24.0	15.4
Green Ext Time (p_c), s	0.0	5.8	0.0	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	73.7
HCM 2010 LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	457	664	612	29	509	67	410	293	22	59	299	309
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	165		50	150		50	200		0	200		0
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	80			100			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1034			1432			824			534	
Travel Time (s)		17.6			24.4			14.0			9.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0		11.0	20.0	11.0
Total Split (s)	36.0	42.0	42.0	15.0	21.0	21.0	29.0	39.0		14.0	24.0	36.0
Total Split (%)	32.7%	38.2%	38.2%	13.6%	19.1%	19.1%	26.4%	35.5%		12.7%	21.8%	32.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead		Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 10 (9%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 16: Memorial Wy. - Eucalyptus Av. & Eucalyptus Av. - Towngate Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	457	664	612	29	509	67	410	293	22	59	299	309
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	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	486	706	651	31	541	71	436	312	23	63	318	329
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	510	1427	639	69	547	245	409	1064	78	167	339	743
Arrive On Green	0.29	0.40	0.40	0.04	0.15	0.15	0.23	0.32	0.32	0.09	0.18	0.18
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3344	245	1774	1863	1583
Grp Volume(v), veh/h	486	706	651	31	541	71	436	164	171	63	318	329
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1819	1774	1863	1583
Q Serve(g_s), s	29.6	16.4	21.8	1.9	16.8	3.5	25.3	7.7	7.8	3.7	18.5	5.5
Cycle Q Clear(g_c), s	29.6	16.4	21.8	1.9	16.8	3.5	25.3	7.7	7.8	3.7	18.5	5.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	510	1427	639	69	547	245	409	563	579	167	339	743
V/C Ratio(X)	0.95	0.49	1.02	0.45	0.99	0.29	1.07	0.29	0.29	0.38	0.94	0.44
Avail Cap(c_a), veh/h	516	1427	639	177	547	245	409	563	579	167	339	743
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	38.4	24.5	7.9	51.7	46.4	26.5	42.3	28.2	28.2	46.8	44.4	7.5
Incr Delay (d2), s/veh	27.8	0.3	40.6	4.5	35.6	0.6	63.3	1.3	1.3	1.4	35.6	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	18.4	8.0	16.7	1.0	10.9	1.6	19.6	3.9	4.1	1.9	12.9	3.7
LnGrp Delay(d),s/veh	66.2	24.7	48.5	56.2	82.0	27.2	105.6	29.5	29.5	48.2	80.0	9.4
LnGrp LOS	E	C	F	E	F	C	F	C	C	D	E	A
Approach Vol, veh/h		1843			643			771			710	
Approach Delay, s/veh		44.1			74.7			72.6			44.5	
Approach LOS		D			E			E			D	

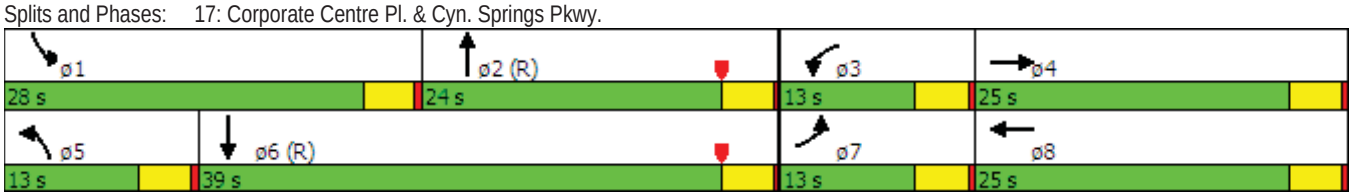
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	39.0	8.3	48.4	29.3	24.0	35.7	21.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	35.0	11.0	38.0	25.0	20.0	32.0	17.0
Max Q Clear Time (g_c+I1), s	5.7	9.8	3.9	23.8	27.3	20.5	31.6	18.8
Green Ext Time (p_c), s	0.7	1.8	0.0	9.0	0.0	0.0	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.6
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	441	34	48	496	108	29	50	60	182	62	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	175		0	130		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			90			90			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			40			30	
Link Distance (ft)		476			1120			987			205	
Travel Time (s)		8.1			19.1			16.8			4.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	20.0		11.0	20.0		11.0	20.0		11.0	20.0	
Total Split (s)	13.0	25.0		13.0	25.0		13.0	24.0		28.0	39.0	
Total Split (%)	14.4%	27.8%		14.4%	27.8%		14.4%	26.7%		31.1%	43.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 64 (71%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	

Splits and Phases: 17: Corporate Centre Pl. & Cyn. Springs Pkwy.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	48	441	34	48	496	108	29	50	60	182	62	39
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	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	51	464	36	51	522	114	31	53	63	192	65	41
Adj No. of Lanes	1	3	0	1	3	0	1	2	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	99	921	71	99	803	171	74	785	703	233	570	359
Arrive On Green	0.06	0.19	0.19	0.02	0.06	0.06	0.04	0.44	0.44	0.13	0.53	0.53
Sat Flow, veh/h	1774	4818	370	1774	4198	897	1774	1770	1583	1774	1069	674
Grp Volume(v), veh/h	51	325	175	51	419	217	31	53	63	192	0	106
Grp Sat Flow(s),veh/h/ln	1774	1695	1797	1774	1695	1704	1774	1770	1583	1774	0	1744
Q Serve(g_s), s	2.5	7.7	7.8	2.6	10.9	11.2	1.5	1.5	2.1	9.5	0.0	2.7
Cycle Q Clear(g_c), s	2.5	7.7	7.8	2.6	10.9	11.2	1.5	1.5	2.1	9.5	0.0	2.7
Prop In Lane	1.00		0.21	1.00		0.53	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	99	648	344	99	648	326	74	785	703	233	0	929
V/C Ratio(X)	0.51	0.50	0.51	0.51	0.65	0.66	0.42	0.07	0.09	0.83	0.00	0.11
Avail Cap(c_a), veh/h	177	791	419	177	791	398	177	785	703	473	0	929
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.3	32.6	32.6	43.0	39.2	39.3	42.0	14.3	14.5	38.1	0.0	10.4
Incr Delay (d2), s/veh	4.0	0.6	1.2	3.5	1.1	2.6	3.7	0.2	0.3	7.2	0.0	0.2
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	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.7	4.0	1.4	5.2	5.5	0.8	0.8	1.0	5.1	0.0	1.4
LnGrp Delay(d),s/veh	45.3	33.2	33.8	46.4	40.3	42.0	45.7	14.5	14.7	45.3	0.0	10.7
LnGrp LOS	D	C	C	D	D	D	D	B	B	D		B
Approach Vol, veh/h		551			687			147			298	
Approach Delay, s/veh		34.5			41.3			21.2			33.0	
Approach LOS		C			D			C			C	

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	15.8	43.9	9.0	21.2	7.8	52.0	9.0	21.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	24.0	20.0	9.0	21.0	9.0	35.0	9.0	21.0
Max Q Clear Time (g_c+I1), s	11.5	4.1	4.6	9.8	3.5	4.7	4.5	13.2
Green Ext Time (p_c), s	0.4	1.0	0.0	5.1	0.0	1.3	0.0	4.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.8
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	187	21	78	158	63	10	82	79	47	95	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		0	100		0	130		0	135		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			45			60			60		
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		474			710			597			987	
Travel Time (s)		8.1			12.1			10.2			16.8	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	24	187	21	0	78	158	63	0	10	82	79
Peak Hour Factor	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93	0.92	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	26	201	23	0	84	170	68	0	11	88	85
Number of Lanes	0	1	2	0	0	1	2	0	0	1	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	3
HCM Control Delay	10.7	10.5	10.3
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	26%	0%	100%	75%	0%	100%	46%	0%	100%
Vol Right, %	0%	0%	74%	0%	0%	25%	0%	0%	54%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	55	106	24	125	83	78	105	116	47	63
LT Vol	10	0	0	24	0	0	78	0	0	47	0
Through Vol	0	55	27	0	125	62	0	105	53	0	63
RT Vol	0	0	79	0	0	21	0	0	63	0	0
Lane Flow Rate	11	59	114	26	134	90	84	113	124	51	68
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.021	0.109	0.195	0.05	0.239	0.156	0.158	0.198	0.204	0.1	0.126
Departure Headway (Hd)	7.16	6.66	6.14	6.927	6.427	6.251	6.793	6.293	5.912	7.141	6.641
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	499	537	583	516	558	573	528	569	606	501	539
Service Time	4.918	4.418	3.898	4.68	4.18	4.004	4.545	4.045	3.663	4.898	4.398
HCM Lane V/C Ratio	0.022	0.11	0.196	0.05	0.24	0.157	0.159	0.199	0.205	0.102	0.126
HCM Control Delay	10.1	10.2	10.4	10	11.2	10.2	10.8	10.6	10.2	10.7	10.4
HCM Lane LOS	B	B	B	A	B	B	B	B	B	B	B
HCM 95th-tile Q	0.1	0.4	0.7	0.2	0.9	0.5	0.6	0.7	0.8	0.3	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	47	95	31
Peak Hour Factor	0.92	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	51	102	33
Number of Lanes	0	1	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	10.3
HCM LOS	B

Lane	SBLn3

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	164	0	0	195	3	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	0		1	1
Taper Length (ft)			40		60	
Link Speed (mph)	40			40	30	
Link Distance (ft)	135			597	203	
Travel Time (s)	2.3			10.2	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	164	0	0	195	3	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	178	0	0	212	3	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	178	0	284	89
Stage 1	-	-	-	-	178	-
Stage 2	-	-	-	-	106	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1395	-	683	951
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	907	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1395	-	683	951
Mov Cap-2 Maneuver	-	-	-	-	706	-
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	907	-

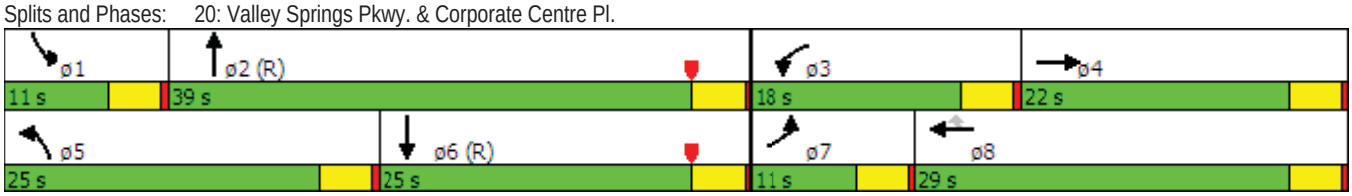
Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	706	951	-	-	1395	-
HCM Lane V/C Ratio	0.005	0.009	-	-	-	-
HCM Control Delay (s)	10.1	8.8	-	-	0	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	46	121	119	64	5	202	623	76	44	586	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		70	140		50	150		0	120		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	60			60			60			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			40			40			40	
Link Distance (ft)		327			493			402			804	
Travel Time (s)		7.4			8.4			6.9			13.7	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	20.0		11.0	20.0	20.0	11.0	20.0		11.0	20.0	
Total Split (s)	11.0	22.0		18.0	29.0	29.0	25.0	39.0		11.0	25.0	
Total Split (%)	12.2%	24.4%		20.0%	32.2%	32.2%	27.8%	43.3%		12.2%	27.8%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
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)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	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	C-Max		None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 11 (12%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	

Splits and Phases: 20: Valley Springs Pkwy. & Corporate Centre Pl.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	46	121	119	64	5	202	623	76	44	586	34
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	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	37	47	125	123	66	5	208	642	78	45	604	35
Adj No. of Lanes	1	1	0	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	83	59	158	155	608	272	251	2536	305	93	2273	131
Arrive On Green	0.05	0.13	0.13	0.09	0.17	0.17	0.05	0.18	0.18	0.05	0.46	0.46
Sat Flow, veh/h	1774	451	1200	1774	3539	1583	1774	4602	554	1774	4920	283
Grp Volume(v), veh/h	37	0	172	123	66	5	208	471	249	45	415	224
Grp Sat Flow(s),veh/h/ln	1774	0	1651	1774	1770	1583	1774	1695	1765	1774	1695	1813
Q Serve(g_s), s	1.8	0.0	9.1	6.1	1.4	0.2	10.5	10.7	10.9	2.2	6.8	6.8
Cycle Q Clear(g_c), s	1.8	0.0	9.1	6.1	1.4	0.2	10.5	10.7	10.9	2.2	6.8	6.8
Prop In Lane	1.00		0.73	1.00		1.00	1.00		0.31	1.00		0.16
Lane Grp Cap(c), veh/h	83	0	217	155	608	272	251	1868	973	93	1566	837
V/C Ratio(X)	0.44	0.00	0.79	0.79	0.11	0.02	0.83	0.25	0.26	0.48	0.27	0.27
Avail Cap(c_a), veh/h	138	0	330	276	983	440	414	1868	973	138	1566	837
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	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	41.7	0.0	37.9	40.3	31.5	31.0	41.8	20.9	21.0	41.4	14.8	14.9
Incr Delay (d2), s/veh	3.7	0.0	7.4	8.8	0.1	0.0	7.0	0.3	0.6	3.8	0.4	0.8
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	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	4.6	3.4	0.7	0.1	5.6	5.1	5.5	1.2	3.3	3.6
LnGrp Delay(d),s/veh	45.4	0.0	45.3	49.1	31.5	31.0	48.8	21.2	21.6	45.3	15.3	15.6
LnGrp LOS	D		D	D	C	C	D	C	C	D	B	B
Approach Vol, veh/h		209			194			928			684	
Approach Delay, s/veh		45.3			42.6			27.5			17.4	
Approach LOS		D			D			C			B	

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	8.7	53.6	11.9	15.8	16.7	45.6	8.2	19.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	35.0	14.0	18.0	21.0	21.0	7.0	25.0
Max Q Clear Time (g_c+I1), s	4.2	12.9	8.1	11.1	12.5	8.8	3.8	3.4
Green Ext Time (p_c), s	0.0	8.8	0.1	0.7	0.4	6.4	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	27.4
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	0	34	13	0	4	20	884	14	4	805	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	25		0	75		50
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	60			60			10			80		
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		252			253			418			402	
Travel Time (s)		5.7			5.8			7.1			6.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	0	34	13	0	4	20	884	14	4	805	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	0	35	13	0	4	20	902	14	4	821	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1240	1795	419	1287	1797	458	839	0	0	916	0	0
Stage 1	838	838	-	950	950	-	-	-	-	-	-	-
Stage 2	402	957	-	337	847	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	184	80	498	173	79	470	468	-	-	430	-	-
Stage 1	258	380	-	216	337	-	-	-	-	-	-	-
Stage 2	545	334	-	596	376	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	169	72	498	149	71	470	468	-	-	430	-	-
Mov Cap-2 Maneuver	169	72	-	149	71	-	-	-	-	-	-	-
Stage 1	236	376	-	197	308	-	-	-	-	-	-	-
Stage 2	493	305	-	549	373	-	-	-	-	-	-	-

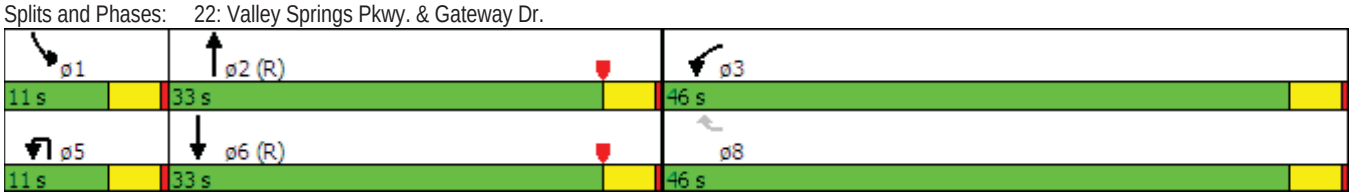
Approach	EB	WB	NB	SB
HCM Control Delay, s	17.7	27.4	0.7	0.1
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	468	-	-	330	178	430	-	-
HCM Lane V/C Ratio	0.044	-	-	0.142	0.097	0.009	-	-
HCM Control Delay (s)	13	0.4	-	17.7	27.4	13.5	-	-
HCM Lane LOS	B	A	-	C	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.3	0	-	-

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	548	95	0	823	222	50	802
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	180		0	115	
Storage Lanes	1	1	1		0	1	
Taper Length (ft)	60		100			120	
Right Turn on Red		Yes			Yes		
Link Speed (mph)	40			40			40
Link Distance (ft)	609			576			418
Travel Time (s)	10.4			9.8			7.1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)							
Turn Type	Prot	Perm	Prot	NA		Prot	NA
Protected Phases	3		5	2		1	6
Permitted Phases		8					
Detector Phase	3	8	5	2		1	6
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	11.0	20.0	11.0	20.0		11.0	20.0
Total Split (s)	46.0	46.0	11.0	33.0		11.0	33.0
Total Split (%)	51.1%	51.1%	12.2%	36.7%		12.2%	36.7%
Yellow Time (s)	3.5	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead	Lag		Lead	Lag
Lead-Lag Optimize?			Yes	Yes		Yes	Yes
Recall Mode	None	None	None	C-Max		None	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 66 (73%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 22: Valley Springs Pkwy. & Gateway Dr.



Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (veh/h)	548	95	0	823	222	50	802
Number	3	18		2	12	1	6
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00			1.00	1.00	
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863		1863	1900	1863	1863
Adj Flow Rate, veh/h	623	108		935	252	57	911
Adj No. of Lanes	1	1		3	0	1	3
Peak Hour Factor	0.88	0.88		0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	673	600		1710	459	105	2705
Arrive On Green	0.38	0.38		0.29	0.29	0.08	0.71
Sat Flow, veh/h	1774	1583		4159	1072	1774	5253
Grp Volume(v), veh/h	623	108		794	393	57	911
Grp Sat Flow(s),veh/h/ln	1774	1583		1695	1673	1774	1695
Q Serve(g_s), s	30.2	4.1		17.8	17.9	2.8	6.2
Cycle Q Clear(g_c), s	30.2	4.1		17.8	17.9	2.8	6.2
Prop In Lane	1.00	1.00			0.64	1.00	
Lane Grp Cap(c), veh/h	673	600		1452	717	105	2705
V/C Ratio(X)	0.93	0.18		0.55	0.55	0.54	0.34
Avail Cap(c_a), veh/h	828	739		1452	717	138	2705
HCM Platoon Ratio	1.00	1.00		0.67	0.67	1.33	1.33
Upstream Filter(I)	1.00	1.00		0.88	0.88	1.00	1.00
Uniform Delay (d), s/veh	26.7	18.6		24.7	24.7	40.3	7.1
Incr Delay (d2), s/veh	14.3	0.1		1.3	2.6	4.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.4	1.8		8.6	8.8	1.5	3.0
LnGrp Delay(d),s/veh	41.1	18.8		26.0	27.4	44.6	7.4
LnGrp LOS	D	B		C	C	D	A
Approach Vol, veh/h	731			1187			968
Approach Delay, s/veh	37.8			26.4			9.6
Approach LOS	D			C			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.3	42.6				51.9		38.1
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	7.0	29.0				29.0		42.0
Max Q Clear Time (g_c+I1), s	4.8	19.9				8.2		32.2
Green Ext Time (p_c), s	0.0	7.3				14.0		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	23.7
HCM 2010 LOS	C

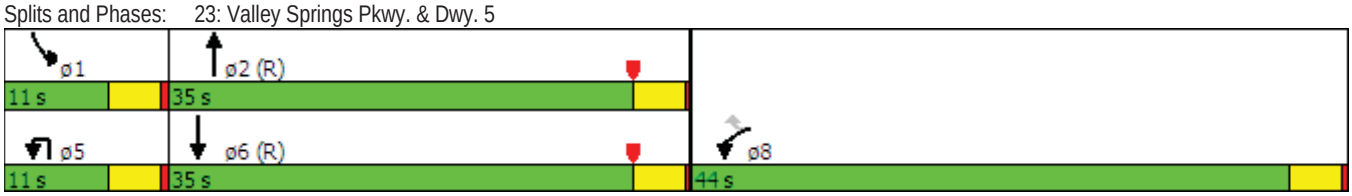
Notes

User approved ignoring U-Turning movement.

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	446	57	0	988	185	24	1325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	195		100	150	
Storage Lanes	1	1	1		0	1	
Taper Length (ft)	60		100			80	
Right Turn on Red		Yes			Yes		
Link Speed (mph)	30			40			40
Link Distance (ft)	400			560			576
Travel Time (s)	9.1			9.5			9.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Turn Type	Prot	Perm	Prot	NA		Prot	NA
Protected Phases	8		5	2		1	6
Permitted Phases		8					
Detector Phase	8	8	5	2		1	6
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	20.0	20.0	11.0	20.0		11.0	20.0
Total Split (s)	44.0	44.0	11.0	35.0		11.0	35.0
Total Split (%)	48.9%	48.9%	12.2%	38.9%		12.2%	38.9%
Yellow Time (s)	3.5	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead	Lag		Lead	Lag
Lead-Lag Optimize?			Yes	Yes		Yes	Yes
Recall Mode	None	None	None	C-Max		None	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 5 (6%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 23: Valley Springs Pkwy. & Dwy. 5



Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (veh/h)	446	57	0	988	185	24	1325
Number	3	18		2	12	1	6
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00			1.00	1.00	
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863		1863	1900	1863	1863
Adj Flow Rate, veh/h	485	62		1074	201	26	1440
Adj No. of Lanes	1	1		3	0	1	3
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	537	479		2269	424	66	3095
Arrive On Green	0.30	0.30		0.53	0.53	0.04	0.61
Sat Flow, veh/h	1774	1583		4473	805	1774	5253
Grp Volume(v), veh/h	485	62		845	430	26	1440
Grp Sat Flow(s),veh/h/ln	1774	1583		1695	1721	1774	1695
Q Serve(g_s), s	23.6	2.6		14.1	14.2	1.3	13.9
Cycle Q Clear(g_c), s	23.6	2.6		14.1	14.2	1.3	13.9
Prop In Lane	1.00	1.00			0.47	1.00	
Lane Grp Cap(c), veh/h	537	479		1787	907	66	3095
V/C Ratio(X)	0.90	0.13		0.47	0.47	0.39	0.47
Avail Cap(c_a), veh/h	788	704		1787	907	138	3095
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		0.18	0.18	0.80	0.80
Uniform Delay (d), s/veh	30.1	22.8		13.4	13.4	42.3	9.6
Incr Delay (d2), s/veh	10.1	0.1		0.2	0.3	3.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	1.1		6.6	6.8	0.7	6.5
LnGrp Delay(d),s/veh	40.3	22.9		13.6	13.7	45.4	10.0
LnGrp LOS	D	C		B	B	D	B
Approach Vol, veh/h	547			1275			1466
Approach Delay, s/veh	38.3			13.6			10.6
Approach LOS	D			B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.3	51.4				58.8		31.2
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	7.0	31.0				31.0		40.0
Max Q Clear Time (g_c+I1), s	3.3	16.2				15.9		25.6
Green Ext Time (p_c), s	0.0	12.8				13.0		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	16.4
HCM 2010 LOS	B

Notes

User approved ignoring U-Turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	285	4	3	520	28	9	1	7	20	1	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	60			60			60			60		
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		609			244			257			287	
Travel Time (s)		10.4			4.2			5.8			6.5	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	285	4	3	520	28	9	1	7	20	1	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	385	5	4	703	38	12	1	9	27	1	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	741	0	0	391	0	0	778	1167	195	953	1150	370
Stage 1	-	-	-	-	-	-	418	418	-	730	730	-
Stage 2	-	-	-	-	-	-	360	749	-	223	420	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	862	-	-	1164	-	-	286	192	814	214	197	627
Stage 1	-	-	-	-	-	-	583	589	-	380	426	-
Stage 2	-	-	-	-	-	-	631	417	-	759	588	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	862	-	-	1164	-	-	266	188	814	207	193	627
Mov Cap-2 Maneuver	-	-	-	-	-	-	266	188	-	207	193	-
Stage 1	-	-	-	-	-	-	573	579	-	373	425	-
Stage 2	-	-	-	-	-	-	596	416	-	735	578	-

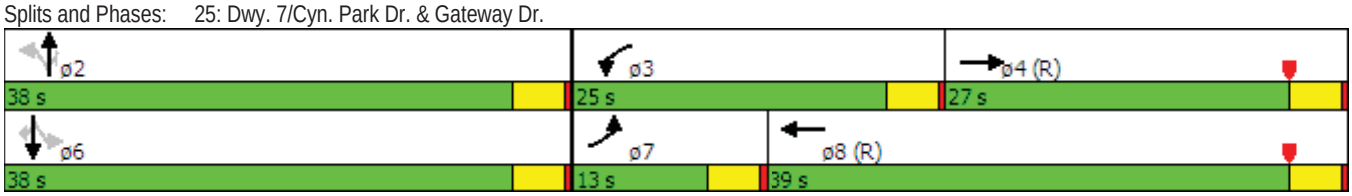
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	15.8	18.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	356	862	-	-	1164	-	-	318
HCM Lane V/C Ratio	0.065	0.017	-	-	0.003	-	-	0.187
HCM Control Delay (s)	15.8	9.2	-	-	8.1	-	-	18.9
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	376	9	88	288	47	23	46	212	49	20	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	150		0	100		0	150		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			40	
Link Distance (ft)		428			394			265			189	
Travel Time (s)		7.3			6.7			6.0			3.2	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Detector Phase	7	4		3	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	20.0		11.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	13.0	27.0		25.0	39.0		38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	14.4%	30.0%		27.8%	43.3%		42.2%	42.2%	42.2%	42.2%	42.2%	42.2%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
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)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	Max

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 25: Dwy. 7/Cyn. Park Dr. & Gateway Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	38	376	9	88	288	47	23	46	212	49	20	167
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	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	46	453	11	106	347	57	28	55	255	59	24	201
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	1454	35	137	1328	216	506	704	598	462	704	598
Arrive On Green	0.05	0.41	0.41	0.08	0.44	0.44	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1774	3532	86	1774	3049	496	1151	1863	1583	1065	1863	1583
Grp Volume(v), veh/h	46	227	237	106	200	204	28	55	255	59	24	201
Grp Sat Flow(s),veh/h/ln	1774	1770	1848	1774	1770	1775	1151	1863	1583	1065	1863	1583
Q Serve(g_s), s	2.3	7.8	7.8	5.3	6.5	6.6	1.4	1.7	10.8	3.4	0.7	8.1
Cycle Q Clear(g_c), s	2.3	7.8	7.8	5.3	6.5	6.6	2.1	1.7	10.8	5.1	0.7	8.1
Prop In Lane	1.00		0.05	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	94	729	761	137	771	774	506	704	598	462	704	598
V/C Ratio(X)	0.49	0.31	0.31	0.78	0.26	0.26	0.06	0.08	0.43	0.13	0.03	0.34
Avail Cap(c_a), veh/h	177	729	761	414	771	774	506	704	598	462	704	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	41.4	17.9	17.9	40.8	16.2	16.2	18.3	18.0	20.8	19.6	17.6	20.0
Incr Delay (d2), s/veh	3.9	1.1	1.1	9.0	0.8	0.8	0.2	0.2	2.2	0.6	0.1	1.5
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	1.2	4.0	4.2	2.9	3.3	3.4	0.5	0.9	5.0	1.1	0.4	3.8
LnGrp Delay(d),s/veh	45.3	19.0	18.9	49.8	17.0	17.0	18.5	18.2	23.0	20.2	17.7	21.5
LnGrp LOS	D	B	B	D	B	B	B	B	C	C	B	C
Approach Vol, veh/h		510			510			338			284	
Approach Delay, s/veh		21.3			23.8			21.8			20.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		38.0	10.9	41.1		38.0	8.8	43.2
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		34.0	21.0	23.0		34.0	9.0	35.0
Max Q Clear Time (g_c+I1), s		12.8	7.3	9.8		10.1	4.3	8.6
Green Ext Time (p_c), s		2.3	0.2	4.0		2.4	0.0	5.2

Intersection Summary	
HCM 2010 Ctrl Delay	22.1
HCM 2010 LOS	C

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	671	383	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	25			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	0				60	
Link Speed (mph)		40	40		30	
Link Distance (ft)		394	226		243	
Travel Time (s)		6.7	3.9		5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	671	383	1	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	729	416	1	1	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	417	0	-	0	784	209
Stage 1	-	-	-	-	417	-
Stage 2	-	-	-	-	367	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1138	-	-	-	330	797
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	671	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1138	-	-	-	330	797
Mov Cap-2 Maneuver	-	-	-	-	447	-
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	670	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1138	-	-	-	573
HCM Lane V/C Ratio	0.001	-	-	-	0.004
HCM Control Delay (s)	8.2	-	-	-	11.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	663	6	18	375	17	6	0	53	16	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	25		0	25		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	1			0			60			60		
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		226			318			265			243	
Travel Time (s)		3.9			5.4			6.0			5.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	663	6	18	375	17	6	0	53	16	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	691	6	19	391	18	6	0	55	17	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	408	0	0	697	0	0	933	1146	348	789	1140	204
Stage 1	-	-	-	-	-	-	700	700	-	437	437	-
Stage 2	-	-	-	-	-	-	233	446	-	352	703	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1147	-	-	895	-	-	221	198	648	281	200	803
Stage 1	-	-	-	-	-	-	396	440	-	568	578	-
Stage 2	-	-	-	-	-	-	749	572	-	638	438	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1147	-	-	895	-	-	216	193	648	252	195	803
Mov Cap-2 Maneuver	-	-	-	-	-	-	216	193	-	252	195	-
Stage 1	-	-	-	-	-	-	395	439	-	567	566	-
Stage 2	-	-	-	-	-	-	730	560	-	582	437	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	12.6	18.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	538	1147	-	-	895	-	-	283
HCM Lane V/C Ratio	0.114	0.003	-	-	0.021	-	-	0.07
HCM Control Delay (s)	12.6	8.1	-	-	9.1	-	-	18.7
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	252	44	109	233	49	49	42	54	38	40	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		50	110		100	100		50	0		50
Storage Lanes	1		0	1		0	1		0	0		1
Taper Length (ft)	60			60			60			60		
Link Speed (mph)		40			40			40			30	
Link Distance (ft)		710			938			284			207	
Travel Time (s)		12.1			16.0			4.8			4.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	16	252	44	0	109	233	49	0	49	42	54
Peak Hour Factor	0.92	0.98	0.98	0.98	0.92	0.98	0.98	0.98	0.92	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	16	257	45	0	111	238	50	0	50	43	55
Number of Lanes	0	1	2	0	0	1	2	0	0	1	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	3	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	2	3
HCM Control Delay	11.2	10.8	10.3
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	49%	0%
Vol Thru, %	0%	100%	21%	0%	100%	66%	0%	100%	61%	51%	0%
Vol Right, %	0%	0%	79%	0%	0%	34%	0%	0%	39%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	49	28	68	16	168	128	109	155	127	78	16
LT Vol	49	0	0	16	0	0	109	0	0	38	0
Through Vol	0	28	14	0	168	84	0	155	78	40	0
RT Vol	0	0	54	0	0	44	0	0	49	0	16
Lane Flow Rate	50	29	69	16	171	131	111	159	129	80	16
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.102	0.054	0.121	0.031	0.301	0.22	0.206	0.271	0.211	0.158	0.028
Departure Headway (Hd)	7.34	6.838	6.281	6.815	6.312	6.07	6.663	6.16	5.888	7.147	6.203
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	487	522	569	525	569	590	538	582	609	501	575
Service Time	5.101	4.599	4.041	4.566	4.062	3.82	4.41	3.907	3.634	4.907	3.963
HCM Lane V/C Ratio	0.103	0.056	0.121	0.03	0.301	0.222	0.206	0.273	0.212	0.16	0.028
HCM Control Delay	10.9	10	9.9	9.8	11.8	10.5	11.1	11.2	10.2	11.3	9.1
HCM Lane LOS	B	A	A	A	B	B	B	B	B	B	A
HCM 95th-tile Q	0.3	0.2	0.4	0.1	1.3	0.8	0.8	1.1	0.8	0.6	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	38	40	16
Peak Hour Factor	0.92	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	39	41	16
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	10.9
HCM LOS	B

Lane

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	2	4	131	0	0	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	50	
Storage Lanes	1	0		0	0	
Taper Length (ft)	60				25	
Link Speed (mph)	30		40			40
Link Distance (ft)	223		216			336
Travel Time (s)	5.1		3.7			5.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	2	4	131	0	0	238
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	4	142	0	0	259

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	271	71	0	0	142	0
Stage 1	142	-	-	-	-	-
Stage 2	129	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	696	977	-	-	1438	-
Stage 1	870	-	-	-	-	-
Stage 2	883	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	696	977	-	-	1438	-
Mov Cap-2 Maneuver	718	-	-	-	-	-
Stage 1	870	-	-	-	-	-
Stage 2	883	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	872	1438	-
HCM Lane V/C Ratio	-	-	0.007	-	-
HCM Control Delay (s)	-	-	9.2	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	2	9	132	2	10	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	25	
Storage Lanes	1	0		0	1	
Taper Length (ft)	60				60	
Link Speed (mph)	30		40			40
Link Distance (ft)	223		336			284
Travel Time (s)	5.1		5.7			4.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	2	9	132	2	10	236
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	25	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	10	143	2	11	257

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	295	73	0	0	146	0
Stage 1	145	-	-	-	-	-
Stage 2	150	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	672	974	-	-	1434	-
Stage 1	867	-	-	-	-	-
Stage 2	862	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	667	974	-	-	1434	-
Mov Cap-2 Maneuver	697	-	-	-	-	-
Stage 1	867	-	-	-	-	-
Stage 2	855	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	908	1434	-
HCM Lane V/C Ratio	-	-	0.013	0.008	-
HCM Control Delay (s)	-	-	9	7.5	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	131	2	4	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	25	
Storage Lanes	1	0		0	1	
Taper Length (ft)	60				25	
Link Speed (mph)	30		40			40
Link Distance (ft)	219		189			216
Travel Time (s)	5.0		3.2			3.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	0	131	2	4	236
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	25	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	142	2	4	257

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	280	72	0	0	145	0
Stage 1	143	-	-	-	-	-
Stage 2	137	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	687	975	-	-	1435	-
Stage 1	869	-	-	-	-	-
Stage 2	875	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	685	975	-	-	1435	-
Mov Cap-2 Maneuver	710	-	-	-	-	-
Stage 1	869	-	-	-	-	-
Stage 2	873	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1435	-
HCM Lane V/C Ratio	-	-	-	0.003	-
HCM Control Delay (s)	-	-	0	7.5	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	252	60	71	405	145	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			60		60	
Link Speed (mph)	40			40	30	
Link Distance (ft)	244			428	257	
Travel Time (s)	4.2			7.3	5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	252	60	71	405	145	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	274	65	77	440	158	186

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	339	0	681	170
Stage 1	-	-	-	-	307	-
Stage 2	-	-	-	-	374	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1217	-	384	844
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	666	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1217	-	360	844
Mov Cap-2 Maneuver	-	-	-	-	467	-
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	624	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	18
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	616	-	-	1217	-
HCM Lane V/C Ratio	0.558	-	-	0.063	-
HCM Control Delay (s)	18	-	-	8.2	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	3.4	-	-	0.2	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	164	3	9	189	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	25		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		60	
Link Speed (mph)	40			40	30	
Link Distance (ft)	493			135	181	
Travel Time (s)	8.4			2.3	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	164	3	9	189	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	178	3	10	205	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	182	0	302	91
Stage 1	-	-	-	-	180	-
Stage 2	-	-	-	-	122	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1391	-	665	949
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1391	-	660	949
Mov Cap-2 Maneuver	-	-	-	-	692	-
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	884	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1391	-
HCM Lane V/C Ratio	-	-	-	0.007	-
HCM Control Delay (s)	0	-	-	7.6	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

ATTACHMENT 2

GENERAL PLAN BUILDOUT WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	15	46	938	626	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	0	1	1			0
Taper Length (ft)	60		30			
Link Speed (mph)	30			40	40	
Link Distance (ft)	364			180	592	
Travel Time (s)	8.3			3.1	10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	15	46	938	626	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	80	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	50	1020	680	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1303	353	705	0	-	0
Stage 1	693	-	-	-	-	-
Stage 2	610	-	-	-	-	-
Critical Hdwy	6.29	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.67	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	182	549	542	-	-	-
Stage 1	381	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	165	549	542	-	-	-
Mov Cap-2 Maneuver	262	-	-	-	-	-
Stage 1	381	-	-	-	-	-
Stage 2	445	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.8	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	542	-	549	-	-
HCM Lane V/C Ratio	0.092	-	0.03	-	-
HCM Control Delay (s)	12.3	-	11.8	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	8	15	23	976	604	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	25			0
Storage Lanes	1	0	1			0
Taper Length (ft)	60		25			
Link Speed (mph)	30			40	40	
Link Distance (ft)	364			453	180	
Travel Time (s)	8.3			7.7	3.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	8	15	23	976	604	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	1	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	16	25	1049	649	41

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1244	345	690	0	-	0
Stage 1	670	-	-	-	-	-
Stage 2	574	-	-	-	-	-
Critical Hdwy	6.29	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.67	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	197	556	551	-	-	-
Stage 1	393	-	-	-	-	-
Stage 2	511	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	188	556	551	-	-	-
Mov Cap-2 Maneuver	283	-	-	-	-	-
Stage 1	393	-	-	-	-	-
Stage 2	488	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	0.3	0
HCM LOS	B		

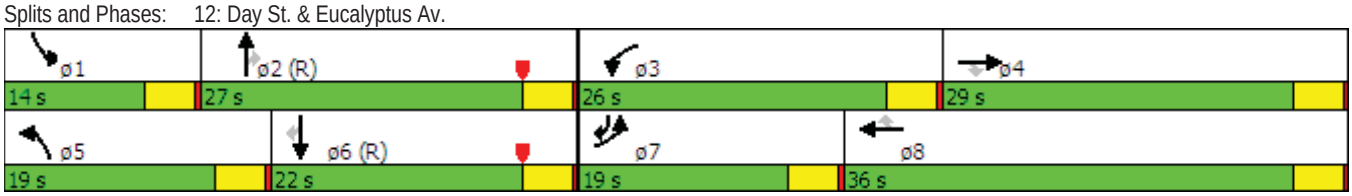
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	551	-	416	-	-
HCM Lane V/C Ratio	0.045	-	0.059	-	-
HCM Control Delay (s)	11.8	-	14.2	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	249	617	91	307	1100	141	261	516	238	98	287	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	175		0	100		100	200		0
Storage Lanes	1		1	1		1	1		2	1		1
Taper Length (ft)	100			75			80			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			35			40	
Link Distance (ft)		2104			1174			390			453	
Travel Time (s)		35.9			20.0			7.6			7.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	11.0
Total Split (s)	19.0	29.0	29.0	26.0	36.0	36.0	19.0	27.0	27.0	14.0	22.0	19.0
Total Split (%)	19.8%	30.2%	30.2%	27.1%	37.5%	37.5%	19.8%	28.1%	28.1%	14.6%	22.9%	19.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	None

Intersection Summary

Area Type: Other
Cycle Length: 96
Actuated Cycle Length: 96
Offset: 13 (14%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 12: Day St. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	249	617	91	307	1100	141	261	516	238	98	287	196
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	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	262	649	96	323	1158	148	275	543	251	103	302	206
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	277	1019	456	358	1180	528	277	955	427	131	664	544
Arrive On Green	0.16	0.29	0.29	0.20	0.33	0.33	0.16	0.27	0.27	0.02	0.06	0.06
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	262	649	96	323	1158	148	275	543	251	103	302	206
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	14.0	15.3	4.4	17.1	31.1	6.6	14.9	12.7	13.2	5.5	7.9	9.9
Cycle Q Clear(g_c), s	14.0	15.3	4.4	17.1	31.1	6.6	14.9	12.7	13.2	5.5	7.9	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	1019	456	358	1180	528	277	955	427	131	664	544
V/C Ratio(X)	0.95	0.64	0.21	0.90	0.98	0.28	0.99	0.57	0.59	0.78	0.46	0.38
Avail Cap(c_a), veh/h	277	1019	456	407	1180	528	277	955	427	185	664	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.92	0.92	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	29.8	25.9	37.4	31.7	23.5	40.4	30.2	30.4	46.1	40.3	27.6
Incr Delay (d2), s/veh	37.5	1.2	0.2	21.4	21.8	0.3	51.8	2.5	5.8	13.4	2.2	2.0
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	9.7	7.7	2.0	10.5	18.7	2.9	11.2	6.5	6.5	3.2	4.1	4.6
LnGrp Delay(d),s/veh	77.6	31.0	26.1	58.8	53.5	23.8	92.2	32.7	36.2	59.5	42.5	29.6
LnGrp LOS	E	C	C	E	D	C	F	C	D	E	D	C
Approach Vol, veh/h		1007			1629			1069			611	
Approach Delay, s/veh		42.7			51.8			48.8			41.0	
Approach LOS		D			D			D			D	

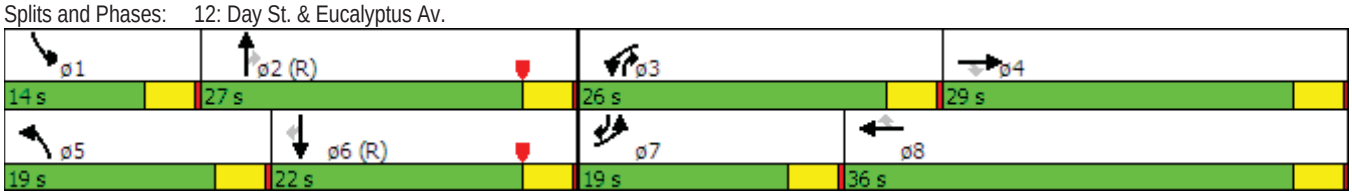
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	29.9	23.4	31.6	19.0	22.0	19.0	36.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	23.0	22.0	25.0	15.0	18.0	15.0	32.0
Max Q Clear Time (g_c+I1), s	7.5	15.2	19.1	17.3	16.9	11.9	16.0	33.1
Green Ext Time (p_c), s	0.0	4.1	0.3	6.1	0.0	3.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.4
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	249	617	91	307	1100	141	261	516	238	98	287	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	175		0	100		100	200		0
Storage Lanes	1		1	1		1	1		2	1		1
Taper Length (ft)	100			75			80			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			35			40	
Link Distance (ft)		2104			1174			390			453	
Travel Time (s)		35.9			20.0			7.6			7.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	11.0	11.0	20.0	11.0
Total Split (s)	19.0	29.0	29.0	26.0	36.0	36.0	19.0	27.0	26.0	14.0	22.0	19.0
Total Split (%)	19.8%	30.2%	30.2%	27.1%	37.5%	37.5%	19.8%	28.1%	27.1%	14.6%	22.9%	19.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 96	
Actuated Cycle Length: 96	
Offset: 13 (14%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 12: Day St. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	249	617	91	307	1100	141	261	516	238	98	287	196
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	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	262	649	96	323	1158	148	275	543	251	103	302	206
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	277	1019	456	358	1180	528	277	955	746	131	664	544
Arrive On Green	0.16	0.29	0.29	0.20	0.33	0.33	0.16	0.27	0.27	0.02	0.06	0.06
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	262	649	96	323	1158	148	275	543	251	103	302	206
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	14.0	15.3	4.4	17.1	31.1	6.6	14.9	12.7	9.6	5.5	7.9	9.9
Cycle Q Clear(g_c), s	14.0	15.3	4.4	17.1	31.1	6.6	14.9	12.7	9.6	5.5	7.9	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	1019	456	358	1180	528	277	955	746	131	664	544
V/C Ratio(X)	0.95	0.64	0.21	0.90	0.98	0.28	0.99	0.57	0.34	0.78	0.46	0.38
Avail Cap(c_a), veh/h	277	1019	456	407	1180	528	277	955	746	185	664	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	29.8	25.9	37.4	31.7	23.5	40.4	30.2	15.9	46.1	40.3	27.6
Incr Delay (d2), s/veh	37.9	1.2	0.2	21.4	21.8	0.3	51.8	2.5	1.2	13.4	2.2	2.0
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	9.8	7.7	2.0	10.5	18.7	2.9	11.2	6.5	4.4	3.2	4.1	4.6
LnGrp Delay(d),s/veh	78.0	31.0	26.1	58.8	53.5	23.8	92.2	32.7	17.2	59.5	42.5	29.6
LnGrp LOS	E	C	C	E	D	C	F	C	B	E	D	C
Approach Vol, veh/h		1007			1629			1069			611	
Approach Delay, s/veh		42.8			51.8			44.4			41.0	
Approach LOS		D			D			D			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	11.1	29.9	23.4	31.6	19.0	22.0	19.0	36.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	23.0	22.0	25.0	15.0	18.0	15.0	32.0
Max Q Clear Time (g_c+I1), s	7.5	14.7	19.1	17.3	16.9	11.9	16.0	33.1
Green Ext Time (p_c), s	0.0	4.3	0.3	6.1	0.0	3.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.3
HCM 2010 LOS	D

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	77	24	1204	1074	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	80			0
Storage Lanes	0	1	1			0
Taper Length (ft)	60		30			
Link Speed (mph)	30			40	40	
Link Distance (ft)	364			180	592	
Travel Time (s)	8.3			3.1	10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	77	24	1204	1074	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	80	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	84	26	1309	1167	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1881	590	1180	0	-	0
Stage 1	1174	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Critical Hdwy	6.29	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.67	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	82	386	320	-	-	-
Stage 1	193	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	75	386	320	-	-	-
Mov Cap-2 Maneuver	148	-	-	-	-	-
Stage 1	193	-	-	-	-	-
Stage 2	401	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.9	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	320	-	386	-	-
HCM Lane V/C Ratio	0.082	-	0.217	-	-
HCM Control Delay (s)	17.2	-	16.9	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0.3	-	0.8	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	13	36	2	1216	1146	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	25			0
Storage Lanes	1	0	1			0
Taper Length (ft)	60		25			
Link Speed (mph)	30			40	40	
Link Distance (ft)	364			453	180	
Travel Time (s)	8.3			7.7	3.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	13	36	2	1216	1146	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	25	-	-	-
Veh in Median Storage, #	1	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	39	2	1308	1232	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1893	619	1238	0	-	0
Stage 1	1235	-	-	-	-	-
Stage 2	658	-	-	-	-	-
Critical Hdwy	6.29	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.67	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	81	370	300	-	-	-
Stage 1	177	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	80	370	300	-	-	-
Mov Cap-2 Maneuver	144	-	-	-	-	-
Stage 1	177	-	-	-	-	-
Stage 2	460	-	-	-	-	-

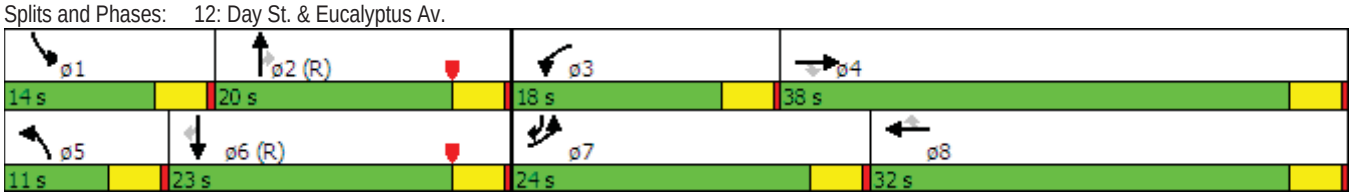
Approach	EB	NB	SB
HCM Control Delay, s	22.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	300	-	261	-	-
HCM Lane V/C Ratio	0.007	-	0.202	-	-
HCM Control Delay (s)	17.1	-	22.2	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	299	1332	217	266	853	164	105	541	392	225	582	335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	175		0	100		100	200		0
Storage Lanes	1		1	1		1	1		2	1		1
Taper Length (ft)	100			75			80			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			35			40	
Link Distance (ft)		2104			1174			390			453	
Travel Time (s)		35.9			20.0			7.6			7.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	11.0
Total Split (s)	24.0	38.0	38.0	18.0	32.0	32.0	11.0	20.0	20.0	14.0	23.0	24.0
Total Split (%)	26.7%	42.2%	42.2%	20.0%	35.6%	35.6%	12.2%	22.2%	22.2%	15.6%	25.6%	26.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 50 (56%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	

Splits and Phases: 12: Day St. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	299	1332	217	266	853	164	105	541	392	225	582	335
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	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	315	1402	228	280	898	173	111	569	413	237	613	353
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	354	1337	598	276	1182	529	138	629	281	197	747	650
Arrive On Green	0.13	0.25	0.25	0.16	0.33	0.33	0.08	0.18	0.18	0.04	0.07	0.07
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	315	1402	228	280	898	173	111	569	413	237	613	353
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	15.7	34.0	10.7	14.0	20.4	7.4	5.5	14.2	16.0	10.0	15.4	15.1
Cycle Q Clear(g_c), s	15.7	34.0	10.7	14.0	20.4	7.4	5.5	14.2	16.0	10.0	15.4	15.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	354	1337	598	276	1182	529	138	629	281	197	747	650
V/C Ratio(X)	0.89	1.05	0.38	1.01	0.76	0.33	0.80	0.90	1.47	1.20	0.82	0.54
Avail Cap(c_a), veh/h	394	1337	598	276	1182	529	138	629	281	197	747	650
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.16	0.16	0.16	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	33.6	24.9	38.0	26.7	22.4	40.8	36.3	37.0	43.3	40.2	23.7
Incr Delay (d2), s/veh	4.2	25.8	0.1	58.0	2.9	0.4	28.2	18.8	228.7	129.3	9.8	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	21.4	4.7	11.3	10.5	3.3	3.8	8.5	24.8	12.0	8.6	7.2
LnGrp Delay(d),s/veh	42.2	59.4	25.0	96.1	29.7	22.8	69.0	55.1	265.7	172.6	50.0	26.9
LnGrp LOS	D	F	C	F	C	C	E	E	F	F	D	C
Approach Vol, veh/h		1945			1351			1093			1203	
Approach Delay, s/veh		52.6			42.5			136.1			67.4	
Approach LOS		D			D			F			E	

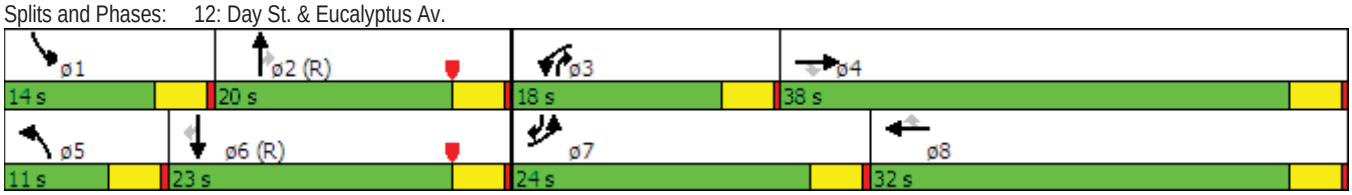
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	20.0	18.0	38.0	11.0	23.0	21.9	34.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	16.0	14.0	34.0	7.0	19.0	20.0	28.0
Max Q Clear Time (g_c+I1), s	12.0	18.0	16.0	36.0	7.5	17.4	17.7	22.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.3	0.2	5.2

Intersection Summary	
HCM 2010 Ctrl Delay	69.7
HCM 2010 LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	299	1332	217	266	853	164	105	541	392	225	582	335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	175		0	100		100	200		0
Storage Lanes	1		1	1		1	1		2	1		1
Taper Length (ft)	100			75			80			120		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			35			40	
Link Distance (ft)		2104			1174			390			453	
Travel Time (s)		35.9			20.0			7.6			7.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	20.0	11.0	11.0	20.0	11.0
Total Split (s)	24.0	38.0	38.0	18.0	32.0	32.0	11.0	20.0	18.0	14.0	23.0	24.0
Total Split (%)	26.7%	42.2%	42.2%	20.0%	35.6%	35.6%	12.2%	22.2%	20.0%	15.6%	25.6%	26.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 15 (17%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 12: Day St. & Eucalyptus Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	299	1332	217	266	853	164	105	541	392	225	582	335
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	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	315	1402	228	280	898	173	111	569	413	237	613	353
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	1337	598	276	1177	527	138	629	528	197	747	652
Arrive On Green	0.07	0.12	0.12	0.16	0.33	0.33	0.08	0.18	0.18	0.15	0.28	0.28
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	315	1402	228	280	898	173	111	569	413	237	613	353
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	15.9	34.0	11.9	14.0	20.4	7.4	5.5	14.2	16.0	10.0	14.6	15.3
Cycle Q Clear(g_c), s	15.9	34.0	11.9	14.0	20.4	7.4	5.5	14.2	16.0	10.0	14.6	15.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	1337	598	276	1177	527	138	629	528	197	747	652
V/C Ratio(X)	0.88	1.05	0.38	1.01	0.76	0.33	0.80	0.90	0.78	1.20	0.82	0.54
Avail Cap(c_a), veh/h	394	1337	598	276	1177	527	138	629	528	197	747	652
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	0.21	0.21	0.21	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	39.4	29.7	38.0	26.9	22.5	40.8	36.3	27.1	38.4	30.8	18.3
Incr Delay (d2), s/veh	5.2	26.9	0.1	58.0	3.0	0.4	28.2	18.8	11.0	129.3	9.8	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	21.6	5.2	11.3	10.5	3.3	3.8	8.5	10.8	11.9	8.1	7.1
LnGrp Delay(d),s/veh	46.1	66.3	29.8	96.1	29.9	22.9	69.0	55.1	38.1	167.6	40.6	21.5
LnGrp LOS	D	F	C	F	C	C	E	E	D	F	D	C
Approach Vol, veh/h		1945			1351			1093			1203	
Approach Delay, s/veh		58.8			42.7			50.1			60.0	
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	14.0	20.0	18.0	38.0	11.0	23.0	22.1	33.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	16.0	14.0	34.0	7.0	19.0	20.0	28.0
Max Q Clear Time (g_c+I1), s	12.0	18.0	16.0	36.0	7.5	17.3	17.9	22.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.4	0.2	5.1

Intersection Summary	
HCM 2010 Ctrl Delay	53.4
HCM 2010 LOS	D