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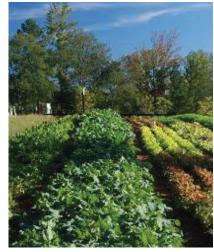




Second Errata to the Final Revised Environmental Impact Report **Fanita Ranch Project**

Volume IV September 2020 SCH No. 2005061118











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Fanita Ranch Project

SCH No. 2005061118

Volume IV

September 2020

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Attachment 4. Fanita Ranch - No Magnolia Avenue Extension Analysis Traffic Memorandum and Fanita Ranch Supplemental VMT Memorandum



Attachment 5. Removal of Magnolia Avenue from the Fanita Ranch Project Biological Resources Memorandum

Attachment 6. Addendum to the Noise Technical Report for the Fanita Ranch Project



Chapter 1 Second Errata to the Final Revised EIR

1.1 Introduction

On August 21, 2020, the project applicant, HomeFed Fanita Rancho, LLC (HomeFed), notified the City of Santee (City) of a change to the Fanita Ranch Project (proposed project) by eliminating the proposed Magnolia Avenue extension.

Magnolia Avenue is an existing north—south City street that currently terminates at the northern edge of existing development approximately 500 feet north of Princess Joann Road, southeast of the project site. The project had formerly proposed to improve and extend this street approximately 0.5 mile from its current northerly terminus, curving west to intersect with the extended off-site segment of Cuyamaca Street south of the project site boundary. The extension of Magnolia Avenue does not provide direct access to the project site. Magnolia Avenue is identified in the Mobility Element of the Santee General Plan as a high priority for improvement and expansion. The City anticipates the future implementation of this roadway but, without funding in place, is unable to determine when this road extension will be implemented, likely when the adjacent vacant or underdeveloped property is improved. It was included as part of the proposed project by HomeFed as a project design feature to provide an additional community benefit. The EIR analyzed the impacts of improving and extending Magnolia Avenue as a project design feature.

Before the elimination of the Magnolia Avenue improvements from the proposed project, the Final EIR, including the EIR Errata (now referred to as the First Errata), Appendices Errata, and the Response to Comments, as well as the Mitigation, Monitoring, and Reporting Program (MMRP), were nearly complete and in the process of being finalized. To address the project description change, the City has prepared a Second Errata to the Final EIR summarizing the change to the proposed project and providing a discussion of the potential effects that the change will have on the impact analysis provided in the EIR. Without the proposed extension of Magnolia Avenue, proposed project traffic originally slated for this roadway would be expected to use Cuyamaca Street. Therefore, the Second Errata presents two potential traffic circulation network scenarios. The first scenario would allow full access movements from Cuyamaca Street to Princess Joann Road, Woodglen Vista Drive, and El Nopal connecting to Magnolia Avenue. The second scenario would prohibit southbound left-turn movements from Cuyamaca Street to the above-mentioned local streets. An analysis of impacts from these two traffic scenarios is analyzed in this Errata with respect to air quality, noise, and traffic impacts.

Any reference to the previously proposed Magnolia Avenue extension as a project feature contained in the Draft or Final EIR or EIR Appendices is hereby deleted from the EIR. Though no physical text changes were made to the Draft EIR (Volume I), EIR Appendices (Volume II), or Final EIR (Volume III), the Second Errata (Volume IV) effectively removes the Magnolia Avenue



extension as a project design feature from the earlier EIR volumes. This Second Errata is written from the perspective that the Magnolia Avenue extension has been eliminated from the proposed project. Table 1 identifies the page numbers in the Draft EIR where the Magnolia Avenue extension language has been removed or revised. This also includes removal of the Magnolia Avenue extension in the text and EIR figures. In addition, any discussion of the extension of Magnolia Avenue in EIR Appendices A through P2 is deleted and no longer applicable. This Second Errata to the Final EIR supersedes and supplements the Final EIR, including the Responses to Comments and First Errata, regarding the Magnolia Avenue extension.

Table 1. Elimination of Magnolia Avenue Extension in the EIR

Section	Page Number
1, Executive Summary	1-2, 1-17, 1-49, 1-60
2, Introduction	2-1, 2-9
3, Project Description	3-1, 3-30, 3-34 (Table 3-6), 3-35, 3-46, 3-48, 3-49, 3-50, 3-55, 3-71, 3-77, 3-78, 3-82
	Figures 3-2, 3-3, 3-4, 3-6, 3-7, 3-8, 3-9, 3-10, 3-11, 3-12, 3-13, 3-15, 3-16, 3-17
4, Environmental Impact Analysis	None
4.1, Aesthetics	4.1-7, 4.1-47, 4.1-51, 4.1-54, 4.1-56, 4.1-57
	Figures 4.1-1, 4.1-4, 4.1-14, 4.1-18
4.2, Air Quality	None
4.3, Biological Resources	4.3-3, 4.3-4, 4.3-5, 4.3-13, 4.3-38, 4.3-42, 4.8-84
	Figures 4.3-3, 4.3-4, 4.3-5, 4.3-6a, 4.3-6b, 4.3-6c, 4.3-7, 4.3-8, 4.3-9, 4.3-10
4.4, Cultural and Tribal Cultural Resources	4.4-19, 4.4-42, 4.4-45
	Figures 4.4-1a, 4.4-1b
4.5, Energy	None
4.6, Geology, Soils, and Paleontological Resources	4.6-1, 4.6-2, 4.6-5, 4.6-8, 4.6-11, 4.6-14, 4.16-18, 4.6-25, 4.6-26, 4.6-28, 4.6-29, 4.6-30, 4.6-31, 4.6-32, 4.6-36
	Figures 4.6-1, 4.6-2
4.7, Greenhouse Gas Emissions	None
4.8, Hazards	4.8-24, 4.8-27
	Figure 4.8-1
4.9, Hydro	4.9-1, 4.9-19, 4.9-29, 4.9-30
	Figure 4.9-2
4.10, Land Use	4.10-15, 4.10-28, 4.10-31
4.11, Minerals	Figure 4.11-1



Table 1. Elimination of Magnolia Avenue Extension in the EIR

Section	Page Number
4.12, Noise	4.12-14, 4.12-25, 4.12-26, 4.12-27, 4.12-28, 4.12-30, 4.12-31, 4.12-33, 4.12-36, 4.12-37, 4.12-52, 4.12-53, 4.12-54, 4.12-55, 4.12-56, 4.12-57, 4.12-58, 4.12-59, 4.12-60, 4.12-61, 4.12-62, 4.12-64, 4.12-67, 4.12-68, 4.12-69, 4.12-73, 4.12-76, 4.12-83, 4.12-84 Figures 4.12-1, 4.12-3, 4.12-4
4.13, Pop and Housing	4.13-15
4.14, Public Services	None
4.15, Recreation	None
4.16, Transportation	4.16-35, 4.16-36, 4.16-37, 4.16-38, 4.16-39, 4.16-40, 4.16-41, 4.16-43, 4.16-44, 4.16-45, 4.16-46, 4.16-47, 4.16-48, 4.16-51, 4.16-52, 4.16-53, 4.16-54, 4.16-55, 4.16-56, 4.16-57, 4.16-58, 4.16-59, 4.16-64, 4.16-65, 4.16-66, 4.16-67, 4.16-68, 4.16-69, 4.16-70, 4.16-71, 4.16-72, 4.16-73, 4.16-80, 4.16-81, 4.16-82, 4.16-83, 4.16-84, 4.16-85, 4.16-110, 4.16-111
4.17, Utilities	4.17-4, 4.17-12, 4.17-13, 4.17-14, 4.17-16
4.18, Wildfire	4.18-8, 4.18-9, 4.18-22, 4.18-25
_	Figure 4.18-1
5, Other CEQA Considerations	5-6
6, Alternatives	6-4, 6-6, 6-15, 6-16, 6-21, 6-23, 6-31, 6-36, 6-37

1.2 Chapter 3: Project Description

The removal of the Magnolia Avenue extension as a project design feature constitutes the elimination of the language describing the extension and its components in Chapter 3, Project Description, as identified in Table 1. Note that, notwithstanding the elimination of the Magnolia Avenue extension as described herein, Project Objective 9 has not been revised to delete Magnolia Avenue. It states, "Implement major transportation components of the Santee General Plan Mobility Element by extending Fanita Parkway, Cuyamaca Street, and Magnolia Avenue to the planned development." Project Objective 9 is unchanged.

1.3 Chapter 4: Environmental Impact Analysis

The following environmental impact analysis is split between two groupings: the environmental resource topics that are not materially affected by the project change and those that warrant further discussion based on the removal of extension of Magnolia Avenue as a project design feature. A summary of how the project change affects each topic is provided below.



1.3.1 Environmental Issues Not Affected By Project Change

The environmental topics listed below would not be affected by the project change and would result in the same or reduced impacts with or without the Magnolia Avenue extension. The numbering below identifies the EIR section numbering for each topic (e.g., Section 4.1: Aesthetics).

1.3.1.1 Section 4.1: Aesthetics

The removal of the Magnolia Avenue extension as a project design feature would result in fewer less than significant impacts on aesthetics compared to the analysis provided in the EIR with the extension. It would eliminate the need for key view point 3 (KVP-3) (Figure 4.1-14, KVP-13: From the Northbound Terminus of Magnolia Avenue), which shows a view looking north at the current northern terminus of Magnolia Avenue and depicts the future extension of Magnolia Avenue. Potential light and glare from the yellow flashing beacons with advisory speed signs proposed to be situated along the proposed extension of Magnolia Avenue would no longer be applicable. Therefore, the removal of the Magnolia Avenue extension would cause fewer less than significant aesthetics impacts under the preferred land use plan with school and land use plan without school. No further analysis is required for aesthetics.

1.3.1.2 Section 4.4: Cultural and Tribal Cultural Resources

The removal of the Magnolia Avenue extension as a project design feature would result in less intensive impacts on cultural and tribal cultural resources compared to the analysis provided in the EIR with the extension. No significant historical resources, archaeological resources, tribal cultural resources, or human remains are known to occur in the area of the Magnolia Avenue extension. In addition, the possibility of discovering unknown cultural resources in the Magnolia Avenue extension area would no longer occur because the land would not be developed as part of the project. Therefore, the removal of the Magnolia Avenue extension would result in less intensive impacts under the preferred land use plan with school and land use plan without school. No further analysis is required for cultural and tribal cultural resources.

1.3.1.3 Section 4.6: Geology, Soils, and Paleontological Resources

The removal of the Magnolia Avenue extension as a project design feature would result in less intensive impacts on geology, soils, and paleontological resources compared to the analysis provided in the EIR with the extension. The potentially significant impacts related to soil erosion or topsoil loss, geologic stability, and expansive soils as a result of the extension of Magnolia Avenue would no longer occur because this land would not be developed. The geotechnical recommendations for the extension of Magnolia Avenue will be removed from Mitigation Measure GEO-1. Therefore, this language has been removed from the proposed project's MMRP. In addition, this site has low potential for paleontological resources to occur and the elimination of the Magnolia Avenue extension would not change the conclusions of the EIR related to



paleontological resources. Therefore, the removal of the Magnolia Avenue extension would result in less intensive impacts under the preferred land use plan with school and land use plan without school. No further analysis is required for geology, soils, and paleontological resources.

1.3.1.4 Section 4.8: Hazards and Hazardous Materials

The removal of the Magnolia Avenue extension as a project design feature would result in the same less than significant impacts on hazards and hazardous materials compared to the analysis in the EIR with the extension. The elimination of the extension of Magnolia Avenue would have no effect on the transport, use, and disposal of hazardous materials, accidental releases, hazards to nearby schools, hazardous materials sites, or airport safety hazards because the deletion of this roadway would not increase the use of hazardous materials near sensitive land uses including schools or airports. In addition, the extension of Magnolia Avenue is not necessary for emergency response or evacuation and would not impair implementation of an adopted emergency response plan or evacuation plan, as further explained in the Fanita Ranch Fire Protection Plan and Evacuation Plan Analysis of No Magnolia Extension prepared by Dudek (2020) (Attachment 1). Figure 4.8-1, Emergency Evacuation Plan, is hereby revised to remove the extension of Magnolia Avenue as a secondary evacuation route. Refer below to Section 1.3.2.8, Wildfire, for a more detailed explanation of the use of Magnolia Avenue for evacuation. The removal of the Magnolia Avenue extension would result in the same less than significant impacts under the preferred land use plan with school and land use plan without school as provided in the EIR with the extension. No further analysis is required for hazards and hazardous materials.

1.3.1.5 Section 4.9: Hydrology and Water Quality

The removal of the Magnolia Avenue extension as a project design feature would result in less intensive less than significant impacts on hydrology and water quality compared to the analysis provided in the EIR with the extension. Because the land previously slated for the extension of Magnolia Avenue would not be developed, it would have less effect on the site drainage and hydrology and result in less potential pollutants from construction to be discharged into nearby water bodies. In addition, as described in more detail in Section 1.3.2.7 and in the Fanita Ranch – Magnolia Avenue Deletion/Utilities and Storm Drain Memorandum prepared by Hunsaker and Associates (2020) (Attachment 2), an interim basin is proposed to be built within the future rights-of-way of Magnolia Avenue and would be removed when Magnolia Avenue is extended at a later date under General Plan buildout. This interim basin, which would be a condition of project approval, would be smaller in size and area than the one previously proposed with the extension of the Magnolia Avenue as part of the proposed project. Therefore, the removal of the Magnolia Avenue extension would result in less intensive less than significant impacts under the preferred land use plan with school and land use plan without school. No further analysis is required for hydrology and water quality.



1.3.1.6 Section 4.10: Land Use and Planning

The removal of the Magnolia Avenue extension as a project design feature would result in the same less than significant impacts on land use and planning compared to the analysis provided in the EIR with the extension. The extension of Magnolia Avenue is not required as part of the proposed Guiding Principles for Fanita Ranch and its removal does not conflict with a goal, objective, or policy of the Santee General Plan. Though the Santee General Plan Mobility Element identifies the extension of Magnolia Avenue as a priority for the City, it is not a requirement of the proposed project to build it. Therefore, the removal of the Magnolia Avenue extension would result in the same less than significant impacts under the preferred land use plan with school and land use plan without school as provided in the EIR with the extension. No further analysis is required for land use and planning.

1.3.1.7 Section 4.11: Mineral Resources

The removal of the Magnolia Avenue extension as a project design feature would result in less intensive less than significant impacts on mineral resources compared to the analysis provided in the EIR with the extension. The site of the extension of Magnolia Avenue is classified as Mineral Resource Zone 3, which is an area containing mineral deposits, the significance of which cannot be evaluated from available data. Because the proposed project would no longer extend Magnolia Avenue, it would not have the potential to impact the mineral resources in the extension area. In addition, the removal of locally important mineral resource site would not occur in the extension area. Therefore, the removal of the Magnolia Avenue extension would result in less intensive less than significant impacts under the preferred land use plan with school and land use plan without school. No further analysis is required for mineral resources.

1.3.1.8 Section 4.13: Population and Housing

The removal of the Magnolia Avenue extension as a project design feature would result in the same less than significant impacts on population and housing compared to the analysis provided in the EIR with the extension. The removal of the Magnolia Avenue extension would have no impact on the projected population or employment under the preferred land use plan with school and land use plan without school and would not induce unplanned population growth or displace people or housing. Therefore, the removal of the Magnolia Avenue extension would result in the same less than significant impact under the preferred land use plan with school and land use plan without school as provided in the EIR with the extension. No further analysis is required for population and housing.

1.3.1.9 Section 4.14: Public Services

The removal of the Magnolia Avenue extension as a project design feature would result in the same less than significant impacts on public services compared to the analysis provided in the EIR with the extension. The elimination of the Magnolia Avenue extension would not affect the Santee Fire Department's and Santee County Sheriff's Department's abilities to access the project site



and would not cause physical impacts to fire protection facilities, police protection facilities, public school facilities, or libraries under both the preferred land use plan with school and land use plan without school. There are several other access options, including the two roads that access the site directly: Fanita Parkway and Cuyamaca Street. In addition, the extension of Magnolia Avenue is presumed to be completed by Year 2035 in line with the General Plan Mobility Element buildout. Therefore, the removal of the Magnolia Avenue extension would result in the same less than significant impact under the preferred land use plan with school and land use plan without school as provided in the EIR with the extension. No further analysis is required for public services.

1.3.1.10 Section 4.15: Recreation

The removal of the Magnolia Avenue extension as a project design feature would result in the same impacts on recreation compared to the analysis provided in the EIR with the extension. The removal of the Magnolia Avenue extension would have no impact on the use of existing recreation facilities and would not cause the construction or expansion of new recreational facilities. Therefore, the removal of the Magnolia Avenue extension would result in the same level of impacts under the preferred land use plan with school and land use plan without school as provided in the EIR with the extension. No further analysis is required for recreation.

1.3.2 Environmental Issues That Warrant Further Discussion

The environmental topics listed below warrant additional discussion and technical memorandums have been prepared by the specific technical consultant, analyzing the impacts without the Magnolia Avenue extension.

1.3.2.1 Section 4.2: Air Quality

The removal of the Magnolia Avenue extension as a project design feature would not result in any new significant air quality impacts under the preferred land use plan with school and land use plan without school from those analyzed in the EIR. Two additional studies, a Memorandum to the Air Quality Analysis Report – Removal of Magnolia Extension and a Supplemental Analysis of Emissions and Fuel Use without the Extension of Magnolia Avenue, were prepared by LSA Associates (2020) (Attachment 3) to document the revisions or clarifications required to reflect removal of the Magnolia Avenue extension. The only revisions necessary were to prepare a revised long-term criteria pollutant emissions analysis to assess the interim condition with the increased VMT and to update the carbon monoxide hotspots analysis due to the change in trip distribution, as described below. It should be noted that the revisions and clarifications related to long-term air quality emissions and carbon monoxide hotspots do not change any conclusions provided in the EIR.

Consistency with Applicable Air Quality Plan, Cumulative Increase in Criteria Pollutant Emissions, Odors

The analyses related to toxic air contaminants and odors are not affected by the elimination of the Magnolia Avenue extension. The elimination of the Magnolia Avenue extension does not result in any



change in proposed land uses and therefore does not result in any significant change in operation or trip generation. Construction would be reduced compared to the previous analysis, but elimination of the Magnolia Avenue extension would not affect construction of the remainder of the project site. The Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum and the Fanita Ranch Supplemental VMT Memorandum prepared by LLG (2020) (Attachment 4) note that the change in trip distribution as a result of elimination of the Magnolia Avenue extension would result in a de minimis change in project vehicle miles traveled (VMT). LSA prepared a Supplemental Analysis of Emissions and Fuel Use without the Extension of Magnolia Avenue (Attachment 3) to analyze the effects of the de minimis increase in VMT on long-term operational air quality without the extension of Magnolia Avenue. As shown in Tables 3 and 4 in the Supplemental Analysis of Emissions and Fuel Use without the Extension of Magnolia Avenue, the revised long-term criteria pollutant emissions analysis would result in slightly higher on-road emissions, however, the numerical increase does not change the significance findings related to air quality and consistency with applicable plans as identified in the Air Quality Analysis Report (EIR Appendix C1) and EIR Section 4.2, Air Quality. Therefore, because land uses generating the same emissions compared to the EIR would occur for both the preferred land use plan with school and land use plan without school, and construction would be slightly reduced, no revision to the Air Quality Analysis is required for these issues.

Sensitive Receptors

Carbon Monoxide Hotspots

The proposed project was evaluated based on the assumption that Fanita Parkway, Cuyamaca Street, and Magnolia Avenue would provide access to the project site. The interim period scenario (2020 through 2034) has been revised to reflect removal of the Magnolia Avenue extension as a project design feature. The revised analysis is based on the Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum (Attachment 4) conducted to determine the changes to the level of service (LOS) results without the connection of Magnolia Avenue to the project site. Without the connection of Magnolia Avenue extended to Cuyamaca Street, it is expected that project trips would instead use streets such as Princess Joann Road, Woodglen Vista Drive, El Nopal, and Mast Boulevard. The Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum (Attachment 4) also analyzes a proposed condition that would prohibit southbound left-turns from Cuyamaca Street onto Princess Joann Road, Woodglen Vista Drive, and El Nopal. The elimination of southbound left-turns would result in slightly different traffic flows through the study intersections, which in turn, may change localized concentrations of carbon monoxide in the immediate vicinity of these intersections.

To assess this interim condition, a revised carbon dioxide hotspot analysis was completed to determine if these changes would result in any air quality impacts. The results of this analysis are provided in Table 2.



Table 2. Estimated Carbon Monoxide Concentrations

		-	CO Concentra	tion (ppm)1	8-Hour			
Intersection	Peak Hour	Interim Period Without Project	Interim Period With Project, With School (Left-Turns Allowed)	Interim Period With Project, With School (Restricted Left-Turns)	Interim Period Without Project	Interim Period With Project, With School (Left-Turns Allowed)	Interim Period With Project, With School (Restricted Left-Turns)	Impact?
Princess	AM	1.7	1.9	1.9	1.2	1.3	1.2	No
Joann Road and Cuyamaca Street	PM	1.7	1.9	1.9	1.2	1.3	1.3	No
Ganley Road	AM	1.7	1.8	1.8	1.2	1.3	1.3	No
and Fanita Parkway	PM	1.7	1.9	1.8	1.2	1.4	1.4	No
Woodglen	AM	1.7	2.0	2.0	1.2	1.4	1.4	No
Vista Drive and Cuyamaca Street	PM	1.8	2.0	2.0	1.3	1.4	1.4	No
El Nopal and	AM	1.9	2.0	2.1	1.4	1.5	1.4	No
Cuyamaca Street	PM	1.9	2.1	2.1	1.4	1.5	1.5	No
El Nopal and	AM	1.9	2.0	2.0	1.4	1.5	1.4	No
Magnolia Avenue	PM	1.9	2.0	2.0	1.4	1.5	1.5	No
El Nopal and	AM	1.8	1.8	1.8	1.3	1.3	1.3	No
Los Ranchitos Road	PM	1.8	1.8	1.8	1.3	1.3	1.3	No
Lake Canyon	AM	1.7	1.9	1.9	1.2	1.4	1.3	No
Road and Fanita Parkway	PM	1.8	1.9	1.9	1.3	1.4	1.4	No
Beck Drive	AM	1.9	2.1	2.1	1.4	1.5	1.5	No
and Cuyamaca Street	PM	1.9	2.0	2.0	1.4	1.5	1.5	No
Mast	AM	2.6	2.7	2.7	1.9	1.9	1.9	No
Boulevard and SR-52 WB Ramps	PM	2.1	2.2	2.2	1.5	1.6	1.6	No
Mast	AM	2.2	2.3	2.2	1.6	1.7	1.6	No
Boulevard and West Hills Parkway	PM	2.3	2.4	2.4	1.7	1.7	1.7	No



Table 2. Estimated Carbon Monoxide Concentrations

1-Hour CO Concentration (ppm)1 8-Hour CO Concentration (ppm)1								
Intersection	Peak Hour	Interim Period Without Project	Interim Period With Project, With School (Left-Turns Allowed)	Interim Period With Project, With School (Restricted Left-Turns)	Interim Period Without Project	Interim Period With Project, With School (Left-Turns Allowed)	Interim Period With Project, With School (Restricted Left-Turns)	Impact?
Mast	AM	2.1	2.3	2.2	1.5	1.7	1.6	No
Boulevard and Fanita Parkway	PM	2.0	2.1	2.1	1.5	1.5	1.6	No
Mast	AM	2.0	2.1	2.2	1.5	1.5	1.5	No
Boulevard and Cuyamaca Street	PM	2.2	2.2	2.3	1.6	1.6	1.7	No
Riverford	AM	2.1	2.1	2.1	1.5	1.5	1.5	No
Road and SR- 67 SB Ramps	PM	2.1	2.1	2.1	1.5	1.5	1.5	No
Riverford	AM	2.1	2.1	2.1	1.5	1.5	1.5	No
Road and Woodside Avenue	PM	2.0	2.1	2.1	1.5	1.5	1.5	No
Mission	AM	2.3	2.4	2.3	1.7	1.7	1.7	No
Gorge Road and West Hills Parkway	PM	2.0	2.0	2.0	1.5	1.5	1.5	No
Mission	AM	2.3	2.5	2.5	1.7	1.8	1.8	No
Gorge Road and Carlton Hills Boulevard	PM	2.2	2.3	2.3	1.6	1.7	1.7	No
Mission	AM	1.9	1.9	1.9	1.4	1.4	1.4	No
Gorge Road and Town Center Parkway	PM	2.1	2.2	2.2	1.5	1.6	1.6	No
Mission	AM	2.1	2.1	2.1	1.5	1.5	1.5	No
Gorge Road and Cuyamaca Street	PM	2.3	2.4	2.4	1.7	1.7	1.7	No
Mission	AM	1.8	1.8	1.8	1.3	1.3	1.3	No
Gorge Road and Cottonwood Avenue	PM	2.0	2.0	2.0	1.5	1.5	1.5	No



Table 2. Estimated Carbon Monoxide Concentrations

		-	CO Concentra	tion (ppm)1	8-Hour			
Intersection	Peak Hour	Interim Period Without Project	Interim Period With Project, With School (Left-Turns Allowed)	Interim Period With Project, With School (Restricted Left-Turns)	Interim Period Without Project	Interim Period With Project, With School (Left-Turns Allowed)	Interim Period With Project, With School (Restricted Left-Turns)	Impact?
Mission	AM	2.3	2.3	2.3	1.7	1.7	1.7	No
Gorge Road and Magnolia Avenue	PM	2.4	2.4	2.4	1.7	1.7	1.7	No
Woodside	AM	1.9	1.9	1.9	1.4	1.4	1.4	No
Avenue N and SR-67 SB Off-Ramp	PM	2.1	2.1	2.1	1.5	1.5	1.5	No
Fanita Drive	AM	1.8	1.8	1.8	1.3	1.3	1.3	No
and SR-52 WB Off-Ramp	PM	1.8	1.8	1.8	1.3	1.3	1.3	No
Buena Vista	AM	2.0	2.0	2.0	1.5	1.5	1.5	No
Avenue and Cuyamaca Street	PM	2.2	2.2	2.3	1.6	1.6	1.7	No
Prospect	AM	1.9	1.9	1.9	1.4	1.4	1.4	No
Avenue and Fanita Drive	PM	1.8	1.8	1.8	1.3	1.3	1.3	No

Source: CALINE4 using EMFAC2017 emission factors. See Attachment 1 in the Memorandum to the Air Quality Analysis Report – Removal of Magnolia Extension (Attachment 3 to this Second Errata) for model output sheets.

Notes:

Modeling assumptions: 1-hour CO concentrations were calculated using the worst-case wind angle scenario in the CALINE4 model. CO emission factors were generated using the EMFAC2017 model, using the CO emission factor associated with Year 2035 for the total vehicle mix during conditions in January at a temperature of 40 degrees Fahrenheit. An ambient 1-hour CO concentration of 1.5 ppm and an ambient 8-hour CO concentration of 1.1 ppm were used to reflect ambient conditions. The 8-hour CO concentration is based on a persistence factor of 0.7 for urban uses.

SR-67 = State Route 67

ppm = parts per million

SR-52 = State Route 52

CO = carbon monoxide

SB = southbound WB = westbound

As shown in Table 2, the removal of the Magnolia Avenue extension in the interim condition would result in less than significant impacts related to carbon monoxide concentrations. Attachment 1 of the Memorandum to the Air Quality Analysis Report – Removal of Magnolia Extension (Attachment 3) provides additional details on the carbon monoxide hotspot analysis. Note that the preferred land use plan with school would increase traffic volumes by approximately 0.6 percent. This de minimis level of change would not increase carbon monoxide concentrations at the intersections evaluated above. Therefore, the preferred land use plan with school would also result in less than significant impacts related to carbon monoxide concentrations.



Summary

The above changes to the interim condition (2020 to 2034) do not result in changes to the Air Quality Analysis related to construction because no additional construction is proposed, or long-term operational emissions at buildout in Year 2035 because the Magnolia Avenue extension is assumed to be completed as part of General Plan buildout in the long term. Therefore, no additional analysis is needed.

1.3.2.2 Section 4.3: Biological Resources

The removal of the Magnolia Avenue extension as a project design feature would result in an overall decrease in impacts to biological resources occurring within the project site and no new significant impacts would occur under the preferred land use plan with school and land use plan without school. It should be noted that the project change does not affect the analysis or significance conclusions associated with on-site impacts. A Removal of Magnolia Avenue from the Fanita Ranch Project Biological Resources Memorandum was completed by Dudek (2020) (Attachment 5) documenting the impacts to biological resources associated with the removal of the Magnolia Avenue extension. The analysis of issues associated with vegetation communities, jurisdictional aquatic resources, special-status plant species, and special-status wildlife species is described below.

Vegetation Communities

Implementation of the original project (i.e., with the Magnolia Avenue extension) would result in off-site impacts to 32.60 acres, including 25.32 acres of permanent impacts and 7.29 acres of temporary impacts (Table 3). Implementation of the revised project (i.e., removal of Magnolia Avenue) would result in off-site impacts to 18.26 acres, including 14.30 acres of permanent impacts and 3.96 acres of temporary impacts (Table 3). Therefore, off-site impact totals would be reduced by a total of 14.35 acres, and impacts to sensitive vegetation communities (including wetlands) would be reduced by 8.00 acres with the removal of Magnolia Avenue (Table 3).



Table 3. Off-Site Impact Comparison

General Vegetation Community/Land Cover	Vegetation Type (Holland/	Project with Magnolia Avenue Extension Impacts			Project Without Magnolia Avenue Extension Impacts		
Category	Oberbauer Code)	Perm	Temp	Total	Perm	Temp	Total
Disturbed and Developed	Disturbed Habitat (11300)	4.36	1.07	5.43	1.77	0.70	2.47
Areas (10000)	Urban/Developed (12000)	3.16	0.34	3.50	0.10	0.01	0.11
Disturbed and Developed A	reas Subtotal	7.51	1.41	8.93	1.87	0.70	2.58
Scrub and Chaparral (30000)	Diegan Coastal Sage Scrub ¹ (32500)	4.93	1.33	6.26	2.62	0.45	3.07
	Diegan Coastal Sage Scrub (fire recovered) ¹ (32500)	0.17	_	0.17	0.17	_	0.17
	Diegan Coastal Sage Scrub (disturbed)¹ (32500)	8.70	3.28	11.99	5.65	1.54	7.20
	Diegan Coastal Sage Scrub–Valley Needlegrass Grassland ¹ (32500/42110)	0.01	0.09	0.10	0.01	0.09	0.10
	Diegan Coastal Sage Scrub–Valley Needlegrass Grassland (disturbed) ¹ (32500/42110)	1.44	0.94	2.38	1.44	0.94	2.38
Scrub and Chaparral Subtot	al	15.25	5.64	20.89	9.89	3.03	12.92
Grasslands, Vernal Pools,	Non-native Grassland ¹ (42200)	2.50	0.21	2.72	2.50	0.21	2.72
Meadows, and Other Herb Communities (40000)	Vernal Pool (44000) ¹	0.01	_	0.01	0.01	_	0.01
Grasslands, Vernal Pools, Meadows, and Other Herb Communities Subtotal		2.52	0.21	2.73	2.52	0.21	2.73
Riparian and Bottomland Habitat (60000)	Non-vegetated Channel or Floodway ¹ (64200)	0.04	0.02	0.06	0.02	0.01	0.03
Riparian and Bottomland Ha	abitat Subtotal	0.04	0.02	0.06	0.02	0.01	0.03
Sensitive Vegetation (includ	ing Wetlands) Subtotal	17.80	5.87	23.68	12.42	3.25	15.68
Grand Total ²		25.32	7.29	32.60	14.30	3.96	18.26

Source: Attachment 5.

Notes:

The mitigation required for permanent off-site impacts to sensitive upland vegetation communities under the original project totals 33.00 acres (Table 4). The revised project would reduce the mitigation requirement total for impacts to sensitive upland vegetation communities by 10.71 acres, totaling 22.29 acres (Table 4). Therefore, the proposed project's total mitigation requirement for all permanent impacts would be reduced from 1,303.33 acres to 1,292.62 acres (see Biological Resources Technical Report [BTR] Table 6-3 for details). No changes would occur to the total conservation occurring within the Habitat Preserve (i.e., BTR and EIR Mitigation Measure BIO-1, Preserve Management Plan, would not change).

¹ Sensitive vegetation community in the Draft Santee Multiple Species Conservation Program (MSCP) Subarea Plan.

² Totals may not sum due to rounding.



Table 4. Comparison of Mitigation Requirements for Permanent Impacts to Sensitive Upland Vegetation Communities

Vegetation Type (Holland/	Extension I	Project with Magnolia Avenue xtension Impacts and Mitigation Requirement			Project without Magnolia Avenue Extension Impacts and Mitigation Requirement		
Oberbauer Code)	Perm	Ratio ¹	Total	Perm	Ratio ¹	Total	
Diegan Coastal Sage Scrub	4.93	2:1	9.86	2.62	2:1	5.24	
Diegan Coastal Sage Scrub (fire recovered)	0.17	2:1	0.34	0.17	2:1	0.34	
Diegan Coastal Sage Scrub (disturbed)	8.70	2:1	17.40	5.65	2:1	11.31	
Diegan Coastal Sage Scrub–Valley Needlegrass Grassland	0.01	2:1	0.01	0.01	2:1	0.01	
Diegan Coastal Sage Scrub–Valley Needlegrass Grassland (disturbed)	1.44	2:1	2.88	1.44	2:1	2.88	
Scrub and Chaparral Subtotal	15.25	_	30.50	9.89	_	19.78	
Non-native Grassland	2.50	1:1	2.50	2.50	1:1	2.50	
Grasslands, Vernal Pools, Meadows, and Other Herb Communities Subtotal	2.50	_	2.50	2.50	_	2.50	
Grand Total ²	17.76	_	33.00	12.39	_	22.29	

Source: Attachment 5.

Notes:

Restoration for temporary impacts occurring along the Magnolia Avenue extension would no longer be required. Therefore, the off-site restoration requirement would be reduced from 5.86 acres to 3.24 acres (Table 5), and the proposed project's total restoration would be reduced from 130.21 acres to 127.59 acres (see Biological Resources Technical Report [BTR] Table 6-3 for details). BTR and EIR Mitigation Measure BIO-2, Upland Restoration Plan, would still apply to the revised project.

¹ Mitigation ratios are based on Table 5-14 in the Draft Santee MSCP Subarea Plan.

² Totals may not sum due to rounding.



Table 5. Comparison of Restoration Requirements for Temporary Impacts to Sensitive Upland Vegetation Communities

Vegetation Type (Holland/	May 2020 Impacts and Restoration Requirement			August 2020 Impacts and Restoration Requirement		
Oberbauer Code)	Temp	Ratio1	Total	Temp	Ratio1	Total
Diegan Coastal Sage Scrub	1.33	1:1	1.33	0.45	1:1	0.45
Diegan Coastal Sage Scrub (disturbed)	3.28	1:1	3.28	1.54	1:1	1.54
Diegan Coastal Sage Scrub–Valley Needlegrass Grassland	0.09	1:1	0.09	0.09	1:1	0.09
Diegan Coastal Sage Scrub–Valley Needlegrass Grassland (disturbed)	0.94	1:1	0.94	0.94	1:1	0.94
Scrub and Chaparral Subtotal	5.64	_	5.64	3.03	_	3.03
Non-native Grassland	0.21	1:1	0.21	0.21	1:1	0.21
Grand Total ²	5.86	_	5.86	3.24	_	3.24

Source: Attachment 5.

Notes:

Jurisdictional Aquatic Resources

Implementation of the revised project would reduce impacts to jurisdictional resources (i.e., non-vegetated channel) occurring along Magnolia Avenue by 0.03 acres. Therefore, assuming a 2:1 mitigation ratio for impacts to non-vegetated channel, the project's total mitigation requirements would be reduced by 0.06 acre. A total of 24.07 acres of mitigation would be required under the May 2020 project, whereas a total of 24.01 acres would be required under the revised project.

Special-Status Plant Species

Although the Magnolia Avenue extension contains suitable habitat, albeit very limited, it was not surveyed for special-status plant species due to limited legal access. Implementation of the revised project would not result in any change to the impact analysis for special-status plant species. However, Mitigation Measure BIO-5, Preconstruction Surveys and Avoidance and Minimization Measures for Special-Status Plant Species, (BTR Mitigation Measure BIO-6), which required preconstruction special-status plant surveys in all impact areas along Magnolia Avenue containing suitable habitat, would no longer be required. Mitigation Measure BIO-5 has been removed from the project's MMRP.

Special-Status Wildlife Species

Although the Magnolia Avenue extension contains suitable habitat, albeit very limited, it was not surveyed for special-status wildlife species due to limited legal access. Implementation of the revised project would not result in any change to the impact analysis for special-status wildlife species occurrences. There would be a reduction in impacts to suitable habitat (i.e., coastal sage

¹ Ratios are based on Table 5-14 in the Draft Santee MSCP Subarea Plan.

² Totals may not sum due to rounding.



scrub varieties and non-native grassland) utilized by special-status wildlife species. See the Vegetation Communities section above for details.

Additionally, implementation of the revised project would result in reduced impacts to both U.S. Fish and Wildlife Service designated Critical Habitat for coastal California gnatcatcher and U.S. Fish and Wildlife Service proposed Critical Habitat for the Hermes copper butterfly.

Summary

In summary, removal of the Magnolia Avenue extension from the proposed project would result in an overall decrease in impacts on vegetation communities, jurisdictional aquatic resources, special-status plant species (if present), and special-status wildlife species on the project site, and no new significant impacts would occur. Therefore, no further analysis of biological resources is required.

1.3.2.3 **Section 4.5: Energy**

The removal of the Magnolia Avenue extension as a project design feature would not result in any new significant energy impacts under the preferred land use plan with school and land use plan without school. A Memorandum to the Energy Analysis Report – Removal of Magnolia Extension was prepared by LSA Associates (2020) (Attachment 3) to evaluate the energy impacts as a result of the deletion of the extension of Magnolia Avenue. The proposed project was evaluated based upon the assumption that Fanita Parkway, Cuyamaca Street, and Magnolia Avenue would all provide access to the project site. An updated Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum (Attachment 4) was prepared to revise the interim period scenario (2020 through 2034) to reflect removal of the Magnolia Avenue extension connection between the proposed project site and Magnolia Avenue. The Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum (Attachment 4) was prepared to determine the changes to the LOS results without the Magnolia Avenue extension. Without the Magnolia Avenue extension, project trips would instead use streets such as Princess Joann Road, Woodglen Vista Drive, El Nopal, and Mast Boulevard. This change would result in slightly different traffic flows through the study intersections due to vehicles no longer using Magnolia Avenue directly from Cuyamaca Street. While there would be a small change in traffic flow, because of the grid pattern of alternate routes used to access the site, any VMT increases would be de minimis. Refer to the Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum and Fanita Ranch Supplemental VMT Memorandum (Attachment 4) for further details on the traffic pattern and VMT increases without the extension of Magnolia Avenue. LSA also prepared a Supplemental Analysis of Emissions and Fuel Use without the Extension of Magnolia Avenue (September 2020) documenting the effects of the de minimis increase in VMT on energy without the Magnolia Avenue extension. The analysis focused on the resulting change in fossil fuel use from operation of the proposed project during the interim period (2020-2034) prior to buildout (see Table 5 of the Supplemental Analysis of Emissions and Fuel Use without the Extension of Magnolia Avenue) and found the 0.67 percent



increase in VMT would not result in a change in significance due to wasteful, inefficient energy use from the analysis in the EIR. Therefore, there would be a de minimis change in fossil fuel use from operation compared to the EIR. Additionally, the removal of the Magnolia Avenue extension would not result in any change to the proposed land uses or project operation. Energy demand during operation and implementation of energy-reducing project features would be the same as the previous analysis. No increase in energy demand during construction would occur because construction would be slightly reduced with elimination of construction of the extension.

The Santee General Plan Mobility Element includes the Magnolia Avenue extension. The long-term (Year 2035) analysis in the EIR assumes General Plan buildout, which includes the extension of Magnolia Avenue. Therefore, it is assumed that by Year 2035, Magnolia Avenue would connect to the proposed project site and long-term operational conditions would be the same as those analyzed in the Energy Analysis Report. Therefore, impacts related to energy and fuel use would remain less than significant and additional analysis of the interim condition is not required.

1.3.2.4 Section 4.7: Greenhouse Gas Emissions

The removal of the Magnolia Avenue extension as a project design feature would not result in new greenhouse gas emissions impacts under the preferred land use plan with school and land use plan without school. A Memorandum to the Greenhouse Gas Analysis Report – Removal of Magnolia Extension was prepared by LSA Associates (2020) (Attachment 3) analyzing the effects of the deletion of the extension of Magnolia Avenue on greenhouse gas emissions. An updated Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum (Attachment 4) has been prepared to revise the interim period scenario (2020 through 2034) to reflect removal of the Magnolia Avenue extension. Without the Magnolia Avenue extension, project trips would instead use streets such as Princess Joann Road, Woodglen Vista Drive, El Nopal, and Mast Boulevard. The Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum (Attachment 4) also analyzes a proposed condition that would prohibit southbound left-turns from Cuyamaca Street onto Princess Joann Road, Woodglen Vista Drive, and El Nopal. These changes would result in slightly different traffic flows through the study intersections due to vehicles no longer using Magnolia Avenue directly from Cuyamaca Street. While there would be a small change in traffic flow, because of the grid pattern of alternate routes used to access the site, the increase in VMT would be de minimis. This is because, while some routes would be slightly longer, others would be slightly shorter, and total VMT associated with the proposed project would increase by 0.67 percent (Fanita Ranch Supplemental VMT Memorandum, LLG, September 2020 [included in Attachment 4]). A Supplemental Analysis of Emissions and Fuel Use without the Extension of Magnolia Avenue has been prepared by LSA (September 2020) (Attachment 3) which concludes that there would be a 0.01 metric tons of carbon dioxide equivalent per/service population increase in GHG emissions, which is considered de minimis, and would not exceed the applicable GHG threshold (see Tables 1 and 2 in the Supplemental Analysis of Emissions and Fuel Use without the



Extension of Magnolia Avenue). Therefore, greenhouse gas emissions from fuel use would be de minimis compared to the analysis in the EIR.

Additionally, there would be no change to the proposed land uses or operation of the proposed project, including demand for energy, water, and solid waste disposal. Neither the elimination of the Magnolia Avenue extension nor the potential restriction on left-turns described above would affect implementation of greenhouse gas-reducing features. No change in impact related to project greenhouse gas emissions would occur compared to the EIR (Supplemental Analysis of Emissions and Fuel Use without the Extension of Magnolia Avenue, LSA, September 2020 [included in Attachment 3]).

The Santee General Plan Mobility Element includes the Magnolia Avenue extension. The long-term (Year 2035) analysis in the EIR assumes General Plan buildout, which includes the extension of Magnolia Avenue. Therefore, it is assumed that, by Year 2035, Magnolia Avenue would connect to the proposed project site, and long-term operational conditions would be exactly the same as those analyzed in the Greenhouse Gas Analysis Report. Therefore, impacts related to greenhouse gas emissions would remain less than significant and additional analysis of the interim condition is not required.

1.3.2.5 Section 4.12: Noise

The removal of the Magnolia Avenue extension as a project design feature would not result in new significant noise impacts under the preferred land use plan with school and land use plan without school from those analyzed in the EIR. An Addendum to the Noise Technical Report for the Fanita Ranch Project prepared by Harris & Associates (2020) (Attachment 6) has been prepared to reflect removal of the extension of Magnolia Avenue based on the Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum (Attachment 4). Without the connection of Magnolia Avenue extended to Cuyamaca Street, it is expected that project trips would instead utilize streets such as Princess Joann Road, Woodglen Vista Drive, El Nopal, and Mast Boulevard to reach the same destinations from the eastern project access on Cuyamaca Street. Four roadway segments that were not previously modeled that would experience an increase in project traffic compared to the previous analysis have been added to the traffic noise analysis. Table 6 provides the existing average daily trips (ADT) and noise level on these roadways, and is a supplement to Table 4.12-4 in the EIR (Table 8 of the Noise Technical Report [NTR]), Existing Off-Site Roadway Noise Levels, in Section 4.12.1.3 in the EIR (Section 3.4.3.2 of the NTR), Roadways. No changes in existing ADT or noise level would occur to the segments previously identified in Table 4.12-4 of the EIR (Table 8 of the NTR).



Table 6. Existing Off-Site Roadway Noise Levels

Roadway	Segment	Existing Average Daily Trips	Noise Level at 50 Feet from Roadway Centerline (dBA Ldn)
Mast Boulevard	Cuyamaca Street to Magnolia Avenue	18,490	64
Princess Joann Road	Cuyamaca Street to Magnolia Avenue	530	45
Woodglen Vista Drive	Cuyamaca Street to Magnolia Avenue	1,700	50
El Nopal	Cuyamaca Street to Magnolia Avenue	3,780	55

Source: Attachment 4 (traffic data). See Attachment 1 of the Addendum to the Noise Technical Report for the Fanita Ranch Project (Attachment 6 of this Second Errata) for noise model assumptions and output.

Notes: dBA = A-weighted decibel; Ldn = day-night noise level

Exceedance of Noise Standards

The analysis of the permanent increase in traffic noise levels in Section 4.12.5.1 of the EIR (5.1.1 of the NTR) Threshold 1: Exceedance of Noise Standards, has been revised to reflect modified project trip distribution under the Existing + Project and Near-Term + Project scenarios. No change to the Year 2035 scenario is anticipated and no portion of the Year 2035 analysis is revised below. The analysis below includes the four roadway segments that were not previously modeled that would experience an increase in project traffic compared to the previous analysis, as well as 10 previously modeled segments that would experience a change in trip distribution. Segments that were included in Section 4.12.5.1 of the EIR (5.1.1 of the NTR) that would not be affected by the change in trip distribution are not included below. The analysis provided in the EIR and NTR remains the same for these segments.

The Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum (Attachment 4) indicates that the difference in vehicle trips on the affected segments would be de minimis between the preferred land use plan with school and land use plan without school. Consistent with the traffic analysis, this analysis represents the potential impacts of both land use plans. Traffic levels for each roadway are provided in the appendices to the memorandum. A substantial permanent noise increase would occur if implementation of the proposed project were to result in an ambient noise level at 50 feet from the roadway centerline that exceeds the land use compatibility limits established in the Santee General Plan, including 65 dBA Ldn at the property line for residential properties and schools. For conditions where the roadway noise level exceeds the standard without project implementation, a significant impact would occur if the proposed project would result in an increase of 3 dBA or greater at 50 feet from the roadway centerline. The following presents a conservative analysis since actual noise levels at nearby receptors would decrease based on their distance from the roadway and would vary based on each individual receptor's location.



Existing + Project Scenario

Existing noise levels and future increases in traffic with implementation of the proposed project are provided in Table 2 for the Full Access scenario and Table 3 for the Prohibited Southbound Left-Turns from Cuyamaca Street scenario in the Addendum to the Noise Technical Report for the Fanita Ranch Project (Attachment 6). As shown in these tables, 2 of the 10 existing roadway segments currently generate noise levels at 50 feet from the roadway centerline that exceed applicable thresholds, both on Magnolia Avenue. In addition, the newly modeled segment of Mast Boulevard between Cuyamaca Street and Magnolia Avenue currently generates noise levels that exceed applicable thresholds without implementation of the proposed project. The significant project-related traffic noise impact identified in the EIR and NTR to one of these already impacted segments, Magnolia Avenue from Woodglen Vista Drive to El Nopal, would be reduced to below a level of significance under either traffic flow scenario with removal of the Magnolia Avenue extension because project traffic volume on this segment would be reduced. Additionally, the significant impact identified in the EIR and NTR to Magnolia Avenue from Princess Joann Road to Woodglen Vista Drive would be reduced to below a level of significance with the removal of the Magnolia Avenue extension. The impact identified in the EIR and NTR to Cuyamaca Street from El Nopal to Mast Boulevard is the same as identified in the EIR and NTR under the Full Access scenario. The proposed project's contribution to noise level on this segment is 1 dBA Ldn higher under the Prohibited Southbound Left-Turns from Cuyamaca Street scenario.

Table 2 and Table 3 in the Addendum to the Noise Technical Report for the Fanita Ranch Project (Attachment 6) also identify five segments, compared to three segments in the EIR and NTR, that exceed applicable thresholds but are not identified as significant. The segments of Cuyamaca Street from the project site to future Magnolia Avenue to Chaparral Drive currently do not exist. This extension would be constructed as part of the proposed project, and noise levels with project operation at 50 feet from the roadway would exceed the applicable threshold of 65 dBA Ldn with implementation of project. However, actual noise levels at the nearest receptors to the impacted segments of Cuyamaca Street would be reduced by distance and topography compared to the estimated noise level in Table 2 and Table 3 in the Addendum to the Noise Technical Report for the Fanita Ranch Project (Attachment 6). The nearest residences, located on Dakota Ranch Road, are more than 100 feet east of the centerline of Cuyamaca Street. At this distance, noise levels would be reduced to less than 65 dBA Ldn and a significant impact would not occur. Noise levels on Cuyamaca Street from its existing terminus to El Nopal would exceed 65 dBA with operation of the proposed project. However, the existing residential subdivisions on Cuyamaca Street north of El Nopal were constructed with masonry and glass barriers along the edge of development on Cuyamaca Street that would reduce noise levels compared to the estimated noise level in Table 2 and Table 3. The EIR and NTR assumed a minimum noise reduction of 5 dBA for these barriers in accordance with Caltrans guidance (Attachment 6). However, noise technical analysis prepared for the prior residential subdivision project indicates that the barriers were constructed to achieve



at least an 8 dBA noise reduction (Attachment 6). The existing noise barrier is not accounted for in the model and would, therefore, reduce the maximum estimated roadway noise level of 71 dBA Ldn shown in Table 3 in the Addendum to the Noise Technical Report for the Fanita Ranch Project (Attachment 6) on Cuyamaca Street from Chaparral Drive to Woodglen Vista Drive under the Prohibited Southbound Left-Turns from Cuyamaca Street scenario to the acceptable noise level of 65 dBA Ldn or below. Impacts to these segments would be less than significant under the Full Access scenario or the Prohibited Southbound Left-Turns from Cuyamaca Street scenario. In summary, under either scenario, with the removal of the Magnolia Avenue extension, significant impacts to two roadway segment impacts would be reduced to below a level of significance, and no new impacts are identified under the Existing + Project scenario compared to the NTR. The significant impact identified in Table 2 and Table 3 in the Addendum to the Noise Technical Report for the Fanita Ranch Project (Attachment 6) to Cuyamaca Street from El Nopal to Mast Boulevard was previously identified in the EIR and NTR and is not a new impact as a result of the elimination of the Magnolia Avenue extension.

Near-Term Scenario

The Near-Term scenario includes development of the proposed project and cumulative projects (Attachment 4). Near-term traffic noise levels, with and without the proposed project, are provided in Tables 4 and 5 in the Addendum to the Noise Technical Report for the Fanita Ranch Project (Attachment 6). As shown in these tables, 2 of the 10 existing roadway segments would generate noise levels at 50 feet from the roadway centerline that exceed applicable thresholds, both on Magnolia Avenue. In addition, the newly modeled segment of Mast Boulevard between Cuyamaca Street and Magnolia Avenue would generate noise levels that exceed applicable thresholds without project implementation. The significant project-related traffic noise impact identified in the EIR and NTR to one of these already impacted segments, Magnolia Avenue from Woodglen Vista Drive to El Nopal, would be reduced to below a level of significance under either scenario with the removal of the Magnolia Avenue extension because project traffic volume would be reduced. Additionally, the significant impact identified in the NTR to Magnolia Avenue from Princess Joann Road to Woodglen Vista Drive would be reduced to below a level of significance with removal of the Magnolia Avenue extension. The impact identified in the EIR and NTR to Cuyamaca Street from El Nopal to Mast Boulevard is the same as identified in the EIR and NTR under the Full Access scenario. The proposed project's contribution to noise level on this segment is 1 dBA Ldn higher under the Prohibited Southbound Left-Turns from Cuyamaca Street scenario.

Tables 4 and 5 in the Addendum to the Noise Technical Report for the Fanita Ranch Project (Attachment 6) also identify five segments, compared to three segments in the EIR and NTR that exceed applicable thresholds but are not identified as significant. The segments of Cuyamaca Street from the project site to future Magnolia Avenue to Chaparral Drive currently do not exist. This extension would be constructed as part of the proposed project, and noise levels with project operation at 50 feet from the roadway would exceed the applicable threshold of 65 dBA Ldn with implementation



of the proposed project. However, actual noise levels at the nearest receptors to the impacted segments of Cuyamaca Street would be reduced by distance and topography compared to the estimated noise level in Tables 4 and 5. The nearest residences, located on Dakota Ranch Road, are more than 100 feet east of the centerline of Cuyamaca Street. At this distance, noise levels would be reduced to less than 65 dBA Ldn and a significant impact would not occur. Noise levels on Cuyamaca Street from its existing terminus to El Nopal would exceed 65 dBA with operation of the proposed project. However, the existing noise barriers at residences along Cuyamaca Street would reduce the maximum estimated roadway noise level of 71 dBA Ldn on Cuyamaca Street from Chaparral Drive to Woodglen Vista Drive to the acceptable noise level of 65 dBA Ldn or below. Impacts to these segments would be less than significant under the Full Access scenario or the Prohibited Southbound Left-Turns from Cuyamaca Street scenario.

In summary, under either scenario, with the removal of the Magnolia Avenue extension, significant impacts at two roadway segments would be reduced to below a level of significance, and no new impacts are identified under the Near-Term scenario compared to the NTR. The significant impact identified in Tables 4 and 5 in the Addendum to the Noise Technical Report for the Fanita Ranch Project (Attachment 6) to Cuyamaca Street from El Nopal to Mast Boulevard was previously identified in the EIR and NTR and is not a new impact as a result of the elimination of the Magnolia Avenue extension.

Mitigation Measures

Permanent Increase in Vehicle Noise

Table 7 replaces Table 4.12-16 in the EIR (Table 16 in the NTR), Significant Permanent Vehicle Noise Impact Summary, to provide a summary of the permanent vehicle impacts and where they would occur with removal of the Magnolia Avenue extension from the project. Significant noise impacts to Magnolia Avenue have been reduced to below a level of significance with removal of the Magnolia Avenue extension. Therefore, mitigation to reduce noise levels on Magnolia Avenue is no longer needed. The impacts to Fanita Parkway and Cuyamaca Street remain the same as identified in the EIR and NTR under the Full Access scenario. Table 7 provides the worst-case scenario that would occur to Cuyamaca Street under the Prohibited Southbound Left-Turns from Cuyamaca Street scenario.



Table 7. Significant Permanent Vehicle Noise Impact Summary

Roadway	Segment	Scenario When Impact Would Occur	Maximum Noise Level at 50 Feet (dBA Ldn)
	On-Site Portion to Ganley Road	Existing + Project Near-Term + Project Year 2035 + Project Cumulatively Considerable	66
Fanita Parkway	Ganley Road to Lake Canyon Road	Existing + Project Near-Term + Project Year 2035 + Project Cumulatively Considerable	70
	Lake Canyon Road to Mast Boulevard	Existing + Project Near-Term + Project Year 2035 + Project Cumulatively Considerable	70
Cuyamaca Street (Silver Country Estates)	El Nopal to Mast Boulevard	Existing + Project Near-Term + Project	72

Source: Attachment 6.

Notes: dBA = A-weighted decibel; Ldn = day-night average sound level

Mitigation Measure NOI-6 (NTR Mitigation Measure NOI-2) has been revised to remove the requirement for installation of a noise barrier on Magnolia Avenue. The following Mitigation Measure NOI-6 replaces the measure in the NTR and Final EIR. The MMRP has been updated to reflect the change to Mitigation Measure NOI-6.

NOI-6: Noise Barrier Installation. A permanent noise barrier shall be installed on the western side of Fanita Parkway from Mast Boulevard to the project site, and on the eastern side of Cuyamaca Street from Mast Boulevard to El Nopal in conjunction with proposed improvements to these roadways. The noise barriers shall be designed by a qualified acoustical engineer. The applicant shall submit an analysis to the Director of Development Services prior to the start of construction that demonstrates that the proposed noise barriers would reduce traffic noise exposure at residential receptors to 65-A-weighted-decibel community noise equivalent level or below on Fanita Parkway and Cuyamaca Street. Noise barriers shall be installed concurrently with the following proposed roadway improvements:

- Extension and widening of Fanita Parkway prior to the commencement of building construction activity on site
- Extension and widening of Cuyamaca Street prior to issuance of the first certificate of occupancy

Additionally, Table 8 replaces Table 4.12-17 in the EIR (Table 17 in the NTR), Permanent Vehicle Noise Impact with Noise Barrier Installation Mitigation, to remove references to the impact on



Magnolia Avenue. No change to the impacts to Fanita Parkway and Cuyamaca Street following mitigation would occur as a result of removal of the Magnolia Avenue extension from the proposed project. The impacts identified in Table 8 are the same as identified in the EIR and NTR, except for the Magnolia Avenue impact which has been eliminated.

Table 8. Permanent Vehicle Noise Impact with Noise Barrier Installation Mitigation

Roadway	Segment	Mitigation	Unmitigated Worst-Case Noise Level (dBA Ldn)	Worst-Case + Project Noise Level with Mitigation (dBA Ldn) ¹	Significant Impact?
	On-Site Portion to Ganley Road – western side of street	Noise Barrier Installation (NOI- 6)	66	61	No
	On-Site Portion to Ganley Road – eastern side of street	No feasible mitigation	66	66	Yes
	Ganley Road to Lake Canyon Road – western side of street	Noise Barrier Installation (NOI- 6)	70	65	No
Fanita Parkway	Ganley Road to Lake Canyon Road – eastern side of street	No feasible mitigation	70	70	Yes
	Lake Canyon Road to Mast Boulevard – western side of street	Noise Barrier Installation (NOI- 6)	70	65	No
	Lake Canyon Road to Mast Boulevard – eastern side of street	No feasible mitigation	70	70	Yes
Cuyamaca Street (Silver Country	El Nopal to Mast Boulevard – western side of street	No feasible mitigation	72	72	Yes
Estates)	El Nopal to Mast Boulevard – east side of street	Noise Barrier Installation (NOI- 6)	72	65	No

Source: Attachment 6.

Notes: dBA = A-weighted decibel; Ldn = day-night average sound level

Due to differences in topography between receptors and roadways along the impacted segments, required noise barrier height and design will vary. As previously stated, at a minimum, a noise reduction of 5 dBA would be achieved, and up to 30 dBA is typical. Table 7 assumes the minimum noise reduction required to mitigate impacts for the segment of Cuyamaca Street from El Nopal to Mast Boulevard (7 dBA reduction). Final barrier design may achieve higher reductions.



Temporary Noise Increase

Construction of the proposed project would have the potential to result in temporary noise level increases as a result of increased traffic volumes and the operation of heavy equipment. These analyses have been revised to reflect removal of the Magnolia Avenue extension as a project feature.

Construction Traffic Noise

Removal of the Magnolia Avenue extension as a project feature would not result in any change in traffic volumes during the Existing + Construction scenario because it was previously assumed that the Magnolia Avenue connection would not be available until after Phase 1 of construction. All construction traffic was assumed to use Fanita Parkway during the Existing + Construction scenario. Therefore, construction traffic modeling was not revised for this scenario and there are no changes to the analysis or results in the EIR and NTR.

However, the Near-Term + Interim Operation + Construction scenario assumes 50 percent of traffic volumes from full operation of the proposed project to determine whether construction would result in a significant temporary increase in noise level compared to noise levels without construction. The Near-Term + Interim + Construction scenario has been revised to reflect the revised interim operation trip distribution under the Full Access and Prohibited Southbound Left-Turns from Cuyamaca Street scenarios. There would be no change to estimated construction trip generation. Only roadway segments that would experience a change in trip distribution as a result of removal of the Magnolia extension as a project feature are included in the revised analysis.

Tables 8 and 9 in the Addendum to the Noise Technical Report for the Fanita Ranch Project (Attachment 6) provide the estimated traffic noise levels for interim operation and construction activities other than building construction compared to near-term noise levels without the proposed project under each scenario. Tables 10 and 11 in the Addendum to the Noise Technical Report for the Fanita Ranch Project (Attachment 6) provide the estimated traffic noise levels compared to near-term noise levels during a building construction period and interim operation.

As shown in Tables 8 through 11, compared to existing conditions, several roadways would experience a significant increase in noise level in the Near-Term + Interim Operation + Construction scenario compared to conditions without the project. However, these increases would be primarily attributable to the increase in permanent operational traffic rather than construction traffic and are therefore not a significant impact related to construction traffic. Significant increases in noise level attributable to operation are addressed in the analysis of permanent impacts above. As shown in Table 8 and Table 9, no significant impacts associated with construction traffic noise would occur during activities without building construction under either traffic flow scenario. As shown in Table 10 and Table 11, construction traffic noise levels during building construction would result in temporary significant noise impacts on one segment of Magnolia Avenue (Princess Joann Road to Woodglen Vista Drive) under either scenario. This significant



and mitigated impact was previously identified in the EIR and NTR. The EIR and NTR also previously identified an impact to Magnolia Avenue from Woodglen Vista Drive to El Nopal under the Near-Term + Interim Operation + Building Construction scenario. With elimination of the Magnolia Avenue extension, traffic noise levels with building construction would be the same on this segment under either traffic flow scenario compared to the EIR and NTR. Because noise levels on this roadway segment would exceed the applicable 65 dBA Ldn threshold without the proposed project, and the increase in noise attributable to construction is less than 3 dBA on this roadway segment, this impact would not be significant, and Tables 10 and 11 make this revision to the EIR and NTR. It should be noted that implementation of Mitigation Measure NOI-2 (NTR Mitigation Measure NOI-5) would continue to eliminate truck traffic on this segment regardless of significance determination because truck traffic would be prohibited on the length Magnolia Avenue north of Mast Boulevard. There would be no change to the impact to Fanita Parkway identified in the EIR and NTR.

A previously identified impact to Magnolia Avenue (Princess Joann Road to Woodglen Vista Drive) is identified during building construction activities under either traffic flow scenario in the Near-Term + Interim Operation + Construction analysis with removal of the Magnolia Avenue extension. Mitigation Measure NOI-2 (NTR Mitigation Measure NOI-5), which prohibits construction truck trips on Magnolia Avenue, would continue to be required under either scenario and would reduce this impact to a less than significant level.

Table 12 of the Addendum to the Noise Technical Report for the Fanita Ranch Project (Attachment 6) revises the impact to Magnolia Avenue in Table 4.12-14 in the EIR (Table 18 in the NTR), Interim Traffic Noise Impacts (Unmitigated), to reflect the reduced, but still significant, maximum noise level on Magnolia Avenue (Princess Joann Road to Woodglen Vista Drive) and remove the impact to Magnolia Avenue from Woodglen Vista Drive to El Nopal. Table 13 of the Addendum to the Noise Technical Report for the Fanita Ranch Project (Attachment 6) revises the mitigated noise levels on Magnolia Avenue (Princess Joann Road to Woodglen Vista Drive) in Table 4.12-15 in the EIR (Table 19 in the NTR), Mitigation Interim Traffic Noise Impacts, and removes Magnolia Avenue (Woodglen Vista Drive to El Nopal) from the list of impacted segments. There is no change to Fanita Parkway in either table because impacts to this segment would be same before or after mitigation.

Construction Equipment Noise

The analysis of potential impacts from construction equipment in the EIR and NTR concluded that operation of heavy equipment during construction would have the potential to create substantial short-term noise increases to residences located within 300 feet of the construction areas along Fanita Parkway, Cuyamaca Street, and Magnolia Avenue, and dead-end roadway improvements on the southern boundary of the site. Impacts to residences within 300 feet of the Magnolia Avenue extension are eliminated with removal of the extension from the project. Mitigation Measures



NOI-3 and NOI-4 (NTR Mitigation Measures NOI-6 and NOI-7) would continue to be required for the remaining construction impacts, and no change to these measures has been made.

Excessive Groundborne Vibration or Noise

The analysis in Section 4.12.5.2 of the EIR (Section 5.1.2 of the NTR), Threshold 2: Excessive Groundborne Vibration or Noise, concluded that operation of construction equipment equivalent to a vibratory roller would result in a potentially significant nuisance impact, including during construction of the Magnolia Avenue extension. Impacts related to the construction of the Magnolia Avenue extension are eliminated with removal of this project feature. Mitigation Measures NOI 3, NOI-4, NOI-8, and NOI-9 (NTR Mitigation Measures NOI-6 through NOI-9) would continue to be required for the remaining construction impacts, and no changes to these measures have been made.

Summary

No new significant impacts have been identified as a result of the removal of the Magnolia Avenue extension as a project design feature. The significant impacts to noise levels on Magnolia Avenue from Princess Joann Road to El Nopal identified in the NTR during project operation would be eliminated with removal of the extension. Additionally, construction noise and vibration impacts associated with construction of the Magnolia Avenue extension would be eliminated. A significant impact to the existing Magnolia Avenue roadway segment of Princess Joann Road to Woodglen Vista Drive during building construction and interim operation would continue to occur with removal of the Magnolia Avenue extension and would be mitigated to less than significant with implementation of Mitigation Measure NOI-2 (NTR Mitigation Measure NOI-5). All other impacts remain the same as identified in the EIR and NTR.

1.3.2.6 Section 4.16: Transportation

The removal of the Magnolia Avenue extension as a project design feature would not result in any new significant transportation impacts under the preferred land use plan with school and land use plan without school. A Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum has been prepared by LLG (2020) (Attachment 4) to evaluate the potential transportation impacts on the local circulation system for the proposed project without the extension of Magnolia Avenue between future Cuyamaca Street and its existing terminus just north of Princess Joann Road. The analysis is based on the preferred land use plan with school. The land use plan without school would generate a 0.66 percent more traffic (26,272 ADT versus 26,445 ADT). Insofar as the trip generation is nearly identical the analysis would apply to both the preferred land use plan with school and land use plan without school. The analysis focuses on the Existing, Existing + Project, Existing + Cumulative Projects, and Existing + Cumulative Projects + Project scenarios. A long-term (Year 2035) analysis is not necessary since Magnolia Avenue will remain on the City's Mobility Element to be constructed at a later date. Therefore, the Year



2035 analysis prepared for the project remains applicable because it assumes buildout of the General Plan, which includes the extension of Magnolia Avenue.

Without the connection of Magnolia Avenue, the Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum (Attachment 4) evaluates two network scenarios. The first would allow full access movements from Cuyamaca Street to Princess Joann Road, Woodglen Vista Drive, and El Nopal connecting to Magnolia Avenue. The second would prohibit southbound left-turn movements from Cuyamaca Street to these local streets. The analyses evaluated the operations specific to the Cuyamaca Street and Magnolia Avenue corridors, where a change in project trips would occur. The following locations affected are listed below (note that the numbers correspond to the intersection or street segment number in the Transportation Impact Analysis [TIA] originally prepared for the proposed project):

Intersections

- 1. Princess Joann Road/Cuyamaca Street (future)
- 2. Princess Joann Road/Magnolia Avenue
- 4. Woodglen Vista Drive/Cuyamaca Street
- 5. Woodglen Vista Drive/Magnolia Avenue
- 6. El Nopal/Cuyamaca Street
- 7. El Nopal/Magnolia Avenue
- 12. Beck Drive/Cuyamaca Street
- 13. 2nd Street/Magnolia Avenue
- 14. Carefree Drive/Magnolia Avenue
- 25. Mast Boulevard/Cuyamaca Street
- 26. Mast Boulevard/Park Center Drive
- 27. Mast Boulevard/Magnolia Avenue

Street Segments

Princess Joann Road

1. Cuyamaca Street to Magnolia Avenue



Woodglen Vista Drive

2. Cuyamaca Street to Magnolia Avenue

El Nopal

3. Cuyamaca Street to Magnolia Avenue

Mast Boulevard

12. Cuyamaca Street to Magnolia Avenue

Cuyamaca Street

- 42. Project Site to Magnolia Avenue (future)
- 43. Magnolia Avenue to Princess Joann Road (future)
- 44. Princess Joann Road to Chaparral Drive (future)
- 45. Chaparral Drive to Woodglen Vista Drive
- 46. Woodglen Vista Drive to El Nopal
- 47. El Nopal to Mast Boulevard

Magnolia Avenue

- 54. Cuyamaca Street to Princess Joann Road (future)
- 55. Princess Joann Road to Woodglen Vista Drive
- 56. Woodglen Vista Drive to El Nopal
- 57. El Nopal to Mast Boulevard

In the Full Access scenario without the Magnolia Avenue extension, traffic would utilize Princess Joann Road, Woodglen Vista Drive, El Nopal, and Mast Boulevard to reach destinations southeast of the project site. It is expected that 10 percent of project traffic would use Princess Joann Road, with 5 percent on Woodglen Vista Drive and El Nopal. Princess Joann Road is expected to attract a higher amount of traffic since it provides a shorter distance between Cuyamaca Street and Magnolia Avenue. It should be noted that Appendix Y of the TIA (EIR Appendix N) contains an assessment of the timing for the Magnolia Avenue extension and was not intended as a cumulative capacity analysis of the potentially affected roadways. The assumptions for the amount of traffic that would use Princess Joann Road, Woodglen Vista Drive, and El Nopal have been updated in the Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum (Attachment 4) to reflect the most accurate estimate of distribution based on trip lengths and travel time. The deletion of



Magnolia Avenue would not change the anticipated trip distribution on Fanita Parkway since Magnolia Avenue is about 2 miles away. In other words, no traffic destined for Magnolia Avenue would choose to use Fanita Parkway if Magnolia Avenue was not constructed given the out of direction travel that would be required.

The Existing + Project and Existing + Cumulative Projects + Project conditions were analyzed for both the No Magnolia Avenue Extension Allowing Full Access scenario and the No Magnolia Avenue Extension Prohibiting Southbound Left-Turns on Cuyamaca Street scenario, as discussed below.

No Magnolia Avenue Extension Allowing Full Access – Capacity Analysis Existing + Project Peak Hour Intersections

As seen in Table 9, Intersection Operations (No Magnolia Avenue Extension – Full Access, the following intersections are calculated to operate at LOS E or F with the addition of Project traffic:

- Intersection No. 4. Woodglen Vista Drive/Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection No. 6. El Nopal/Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection No. 12. Beck Drive/Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection No. 25. Mast Boulevard/Cuyamaca Street LOS E (AM peak hour)

Based on the established significance criteria, four significant direct impacts were calculated with the addition of project traffic at the study area locations above since the project-induced change in delay is greater than 2.0 seconds for LOS E or F operating intersections. These impacts are also calculated to occur under the project with Magnolia Avenue extension analyzed in the EIR. Thus, no new or more severe significant impacts would occur.

Existing + Cumulative Projects + Project Peak Hour Intersections

As seen in Table 9, Intersection Operations (No Magnolia Avenue Extension – Full Access, the following intersections are calculated to operate at LOS E or F with the addition of cumulative traffic and project traffic:

- Intersection No. 4. Woodglen Vista Drive/Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection No. 6. El Nopal/Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection No. 12. Beck Drive/Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection No. 25. Mast Boulevard/Cuyamaca Street LOS E/F (AM/PM peak hours)

Based on the established significance criteria, four significant direct impacts were calculated with the addition of project traffic at the study area locations above since the project-induced change in delay is greater than 2.0 seconds for LOS E or F operating intersections. These impacts are also calculated to occur under the proposed project with Magnolia Avenue extension analyzed in the EIR. Thus, no new or more severe significant impacts would occur.



Table 9. Intersection Operations (No Magnolia Avenue Extension – Full Access)

		Control	Peak	Exist	ting	Existing +	Project	Δc		EIR Impact w/Magnolia Avenue	Cumu	ing + llative ects	Existi Cumulative + Pro	e Projects	Δ c		EIR Impact w/Magnolia Avenue
Intersection	Jur.	Туре	Hour	Delay ^a	LOS b	Delay	LOS	Delay	Sig?	Extension? d	Delay	LOS	Delay	LOS	Delay	Sig?	Extension? d
Princess Joann Road/Cuyamaca Street (future intersection)	Santee	DNE/MSS C	AM	_		11.4	В		No	No		-	11.4	В	_	No	No
		Ŭ	PM			21.6	С				_	_	21.6	С	_		
2. Princess Joann Road/Magnolia Avenue	ss Joann Road/Magnolia Avenue Santee	AWSC	AM	7.6	Α	8.9	Α	1.3	No	No	7.7	Α	9.0	Α	1.3	— No l	No
Santee	Santee		PM	7.9	Α	10.3	В	2.4			7.9	Α	10.3	В	2.4		
Woodglen Vista Drive/Cuyamaca Street Santee	AVACC	AM	8.9	Α	80.2	F	71.3	V	Vaa	8.9	Α	81.9	F	73.0	Vac	Vac	
	Santee	AWSC	PM	9.0	Α	>100.0	F	>2.0	Yes	Yes	9.1	Α	>100.0	F	>2.0	2.0 Yes	Yes
5. Woodglen Vista Drive/Magnolia Avenue	01	0:	AM	11.9	В	14.9	В	3.0	No		12.0	B 15.0 B	В	3.0	NI-		
	Santee	Signal	PM	10.7	В	11.6	В	0.9		No	10.7 E	В	11.6	В	0.9	No	No
6. El Nopal/Cuyamaca Street Santee	A14/00	AM	12.0	В	>100.0	F	>2.0	V	V.	12.3	В	>100.0	F	>2.0	V	Voc	
	Santee	AWSC	PM	11.8	В	>100.0	F	>2.0	Yes	Yes	12.1	В	>100.0	F	>2.0	.0 Yes	Yes
7. El Nopal/Magnolia Avenue	0 1	Signal	AM	23.9	С	27.8	С	3.9	No		24.3	С	28.4	С	4.1		
	Santee		PM	18.3	В	22.3	С	4.0		No	No 18.6	С	22.8	С	4.2	No	No
12. Beck Drive/Cuyamaca Street	414/00	AM	22.4	С	>100.0	F	>2.0		Van	24.1	С	>100.0	F	>2.0	v	V	
	Santee	AWSC	PM	13.3	В	>100.0	F	>2.0	Yes	Yes	13.7	В	>100.0	F	>2.0	Yes	Yes
13. 2nd Street/Magnolia Avenue	0 1	Signal	AM	8.0	Α	8.0	А	0.0			8.2	Α	8.2	Α	0.0		
	Santee		PM	6.6	Α	6.7	А	0.1	No	No	6.7	Α	6.8	С	0.1	No	No
14. Carefree Drive/Magnolia Avenue Santee	0: 1	AM	17.4	В	20.3	С	2.9	N	NI.	17.8	В	21.0	С	3.2	T N	Ne Ne	
	Santee	Signal	PM	9.2	Α	9.6	Α	0.4	No	No	9.3	Α	9.7	Α	0.4	No	No
25. Mast Boulevard/Cuyamaca Street Santee	0 1	Signal	AM	36.9	D	72.4	Е	35.5	Yes	Yes	38.0	D	75.4	Е	37.4	Yes	Yes
	Santee		PM	33.3	С	50.7	D	17.4			33.7	D	53.6	D	19.9		
26. Mast Boulevard/Park Center Drive	. Mast Boulevard/Park Center Drive	0: 1	AM	7.1	Α	7.2	А	0.1	0.1		7.1	Α	7.1	Α	0.0		
S	Santee	Signal	PM	8.7	Α	8.7	А	0.0	No	No	8.9	Α	8.9	Α	0.0	No	No
27. Mast Boulevard/Magnolia Avenue	0 1	Signal	AM	32.9	С	37.5	D	4.6	NO .	No .	36.6	D	41.6	D	5.0	No	No
	Santee		PM	26.8	С	28.6	С	1.8			28.1	D	30.6	С	2.5	No	

Source: Attachment 4.

Notes:

^a Average delay expressed in seconds per vehicle.

General Notes:

Sig = Significant impact, yes or no.

SIGNALIZED UNSIGNALIZED

DELAY/LOS THRESHOLDS DELAY/LOS THRESHOLDS

Delay	LOS	Delay LOS	
$0.0 \le 10.0$	Α	0.0 ≤ 10.0A	
10.1 to 20.0	В	10.1 to 15.0	В
20.1 to 35.0	С	15.1 to 25.0	С
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

b Level of Service

 $^{^{\}circ}$ Δ denotes the increase in delay due to Project.

d See Tables 8–1 and 10–1 in the EIR traffic study (EIR Appendix N) for the "with Magnolia Avenue Extension" analysis.

² Jur. = Jurisdiction



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Existing + Project Daily Segment Operations

As seen in Table 10, Segment Operations (No Magnolia Avenue Extension – Full Access), the following street segments are calculated to operate at LOS E or F with the addition of project traffic:

- Segment No. 41. Cuyamaca Street from Project Site to Magnolia Avenue LOS E
- Segment No. 42. Cuyamaca Street from Magnolia Avenue to Princess Joann Road LOS E
- Segment No. 45. Cuyamaca Street from Woodglen Vista Drive to El Nopal LOS E
- Segment No. 46. Cuyamaca Street from El Nopal to Mast Boulevard LOS F

Based on the established significance criteria, two significant direct impacts were calculated with the addition of project traffic at study area locations above since the project-induced change in V/C is greater than 0.02 for LOS E or F operating street segments. The significant impact on Segment No. 45 is also calculated to occur with the connection of Magnolia Avenue analyzed in the EIR under Year 2035 conditions. The significant impact on Segment No. 46 is also calculated to occur with the connection of Magnolia Avenue analyzed in the EIR under near-term conditions. Segments No. 41 and No. 42 are not deemed to be significant impacts as the intersection operations bookending each segment and the peak hour arterial analyses are calculated to operate at LOS B or better based on standards of practice in the industry and per methodologies for calculating LOS as described in the Highway Capacity Manual (HCM).

Existing + Cumulative Projects + Project Daily Segment Operations

As seen in Table 10, Segment Operations (No Magnolia Avenue Extension – Full Access), the following street segments are calculated to operate at LOS E or F with the addition of project traffic:

- Segment No. 41. Cuyamaca Street from Project Site to Magnolia Avenue LOS E
- Segment No. 42. Cuyamaca Street from Magnolia Avenue to Princess Joann Road LOS E
- Segment No. 45. Cuyamaca Street from Woodglen Vista Drive to El Nopal LOS E
- Segment No. 46. Cuyamaca Street from El Nopal to Mast Boulevard LOS F

Based on the established significance criteria, two significant direct impacts were calculated with the addition of project traffic at study area locations above since the project-induced change in V/C is greater than 0.02 for LOS E or F operating street segments. The significant impact on Segment No. 45 is also calculated to occur with the connection of Magnolia Avenue analyzed in the EIR under Year 2035 conditions. The significant impact on Segment No. 46 is also calculated to occur with the connection of Magnolia Avenue analyzed in the EIR under near-term conditions. Segments No. 41 and No. 42 are not deemed to be significant impacts as the intersection operations bookending each segment and the peak hour arterial analyses are calculated to operate at LOS B or better based on standards of practice in the industry and per methodologies for calculating LOS as described in the HCM.



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Table 10. Segment Operations (No Magnolia Avenue Extension – Full Access To/From Cuyamaca Street)

	Existing Existing Existing		ing + Pr	oject	Project	Δe		EIR Impact w/Magnolia Avenue	Existing + Cumulative Projects			Existing + Cumulative Projects + Project			Project	Δe		EIR Impact w/Magnolia Avenue				
Street Segment	Jur.	a a	ADT b	LOSc	V/C d	ADT	LOS	V/C	Volumes	V/C	Sig?	Extension? f	ADT	LOS	V/C	ADT	LOS	V/C	Volumes	V/C	Sig?	Extension? f
										F	rincess	Joann Road										
Cuyamaca St to Magnolia Ave	Santee	8,000	530	A	0.066	3,160	В	0.395	2,630	0.329	No	No	685	A	0.086	3,315	В	0.414	2,630	0.328	No	No
										V	Voodgle	n Vista Drive										
Cuyamaca St to Magnolia Ave	Santee	8,000	1,700	Α	0.213	3,010	В	0.376	1,310	0.163	No	No	1,759	А	0.220	3,069	В	0.384	1,310	0.164	No	No
			•								El	Nopal										
Cuyamaca St to Magnolia Ave	Santee	8,000	3,780	С	0.473	5,090	D	0.636	1,310	0.163	No	No	3,886	С	0.486	5,196	D	0.650	1,310	0.164	No	No
			•	•	•	•		•		•	Mast	Boulevard	•	•	•				•	•	•	
12. Cuyamaca St to Magnolia Ave	Santee	40,000	18,490	В	0.462	19,280	В	0.482	790	0.020	No	No	19,616	В	0.490	20,406	В	0.510	790	0.020	No	No
-							I				Cuyan	naca Street	1						l		ı	
41. Project Site to Magnolia Ave ^g	Santee	DNE/ 15,000	_	_	-	13,920	E ^h	0.928	13,920	_	No h	No ^h	_	_	_	13,920	E h	1.000	13,920	_	No ^h	No ^h
42. Magnolia Ave to Princess Joann Rd ⁹	Santee	DNE/15,000	_	_	_	13,920	E ^h	0.928	13,920	_	No h	No ^h	_	_	_	13,920	E ^h	1.000	13,920	_	No ^h	No ^h
43. Princess Joann Rd to Chaparral Dr ⁹	Santee	DNE/15,000	_	_	_	11,300	D	0.753	11,300	_	No	No	_	_	_	11,300	D	1.000	11,300	_	No	No
44. Chaparral Dr to Woodglen Vista Dr	Santee	15,000/ 40,000	670	Α	0.045	11,970	A i	0.299	11,300	0.254	No	No	683	A	0.fc/046	11,983	A i	0.300	11,300	0.283	No	No
45. Woodglen Vista Dr to El Nopal	Santee	15,000	4,360	Α	0.291	14,340	E	0.956	9,980	0.665	Yes	Yes ^j	4,472	Α	0.298	14,452	E	0.963	9,980	0.665	Yes	Yes ^j
46. El Nopal to Mast Blvd	Santee	15,000	8,860	С	0.591	17,530	F	1.169	8,670	0.578	Yes	Yes	9,173	С	0.612	17,843	F	1.190	8,670	0.578	Yes	Yes
										•	Magno	lia Avenue		•						•		
54. Cuyamaca St to Princess Joann Rd	Santee	DNE	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	-
55. Princess Joann Rd to Woodglen Vista Dr	Santee	40,000	2,020	A	0.051	4,650	А	0.116	2,630	0.065	No	No	2,204	А	0.055	4,834	А	0.121	2,630	0.066	No	No
56. Woodglen Vista Dr to El Nopal	Santee	40,000	9,030	Α	0.226	12,970	Α	0.324	3,940	0.098	No	No	9,415	Α	0.235	13,355	А	0.334	3,940	0.099	No	No
57. El Nopal to Mast Blvd	Santee	40,000	13,690	Α	0.342	16,320	В	0.408	2,630	0.066	No	No	14,291	Α	0.357	16,921	В	0.423	2,630	0.066	No	No

Source: Attachment 4.

Notes

^a Capacities based on City of Santee Roadway Classification & LOS table.

b Average Daily Traffic

^c Level of Service

d Volume to Capacity ratio

 $^{^{\}mathrm{e}}~\Delta$ denotes a Project-induced increase in the Volume to Capacity ratio



- f See Tables 8–2 and 10–2 in the EIR traffic study (EIR Appendix N) for the "with Magnolia Avenue Extension" analysis.
- ⁹ The 15,000 ADT capacity for the existing sections of Cuyamaca Street was continued along this future section providing access to the Project.
- h The intersection operations at both ends of the Cuyamaca Street road segment between the Project Site and Woodglen Vista Drive report LOS C or better operations and the peak hour arterial operations indicate LOS B or better operations with the mitigation proposed by the Project. Therefore, adequate operations are expected along this roadway. See Tables 3 and 4.
- As part of the Project Design Features for this Project, Cuyamaca Street from Chaparral Drive to Woodglen Vista Drive is proposed to be improved to four-lane Major Road standards. Therefore, an LOS E capacity of 40,000 ADT was used in the "Plus Project" analyses.
- ^j Without the connection of the Magnolia Avenue Extension, this segment impact would be a direct impact instead of a cumulative impact, as identified in the EIR traffic study. The mitigation recommended in the EIR of improving Cuyamaca Street between Woodglen Vista Drive and El Nopal to four lanes would still be recommended. Therefore, no new impacts would occur without the extension of Magnolia Avenue and the mitigation would be unchanged.

General Notes:

- ¹ Sig = Significant impact, yes or no.
- ² DNE, "—" = Does not exist.



Peak Hour Arterial Analysis

The Cuyamaca Street intersections with Princess Joann Road and Woodglen Vista Drive would be improved from stop controls to traffic signals as part of the project mitigation detailed in the EIR. Table 3 of the Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum (Attachment 4) shows the results of the mitigated intersection LOS results without the connection of the Magnolia Avenue extension. Based on the computed intersection analysis, the signalized intersections would operate at LOS B or better, and thus, the roadway would be expected to operate efficiently since LOS B is calculated at the intersections on either end of each segment with the proposed mitigation.

Table 4 of the Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum (Attachment 4) summarizes the Existing + Cumulative Projects + Project peak hour arterial operations of Cuyamaca Street without the Magnolia Avenue Extension, allowing full access movements to local streets. The section of Cuyamaca Street from the project site to Woodglen Vista Drive serves as an access route to a major roadway (Mast Boulevard) ultimately connecting to daily commuter routes. Thus, this segment is classified as a Class III Arterial, per the HCM. Table 4 shows travel speeds (mph) in both directions on Cuyamaca Street along this section operating at LOS B or better.

No Magnolia Avenue Extension Prohibiting Southbound Left-Turns on Cuyamaca Street

Existing + Project Peak Hour Intersections

As seen in Table 11, Intersection Operations (No Magnolia Avenue Extension – Prohibited Southbound Left-Turns from Cuyamaca Street), the following intersections are calculated to operate at LOS E or F with the addition of project traffic without the Magnolia Avenue Extension, and prohibiting southbound left-turning movements from Cuyamaca Street to local streets:

- Intersection No. 4. Woodglen Vista Drive/Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection No. 6. El Nopal/Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection No. 12. Beck Drive/Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection No. 25. Mast Boulevard/Cuyamaca Street LOS F/E (AM/PM peak hours)

Based on the established significance criteria, four significant direct impacts were calculated with the addition of project traffic at the study area locations above since the project-induced change in delay is greater than 2.0 seconds for LOS E or F operating intersections. These impacts are also calculated to occur under the project with Magnolia Avenue extension condition analyzed in the EIR. Thus, no new or more severe significant impacts would occur.



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Table 11. Intersection Operations (No Magnolia Avenue Extension – Prohibited Southbound Left-Turns from Cuyamaca Street)

		Control	Peak	Exis	•	Existing +		Δ°	0:.0	EIR Impact w/Magnolia Avenue	Cumu Proj	ing + lative ects	Existii Cumul Projec Proje	ative ets + ect	Δ ^c	0: 0	EIR Impact w/Magnolia Avenue
Intersection	Jur.	Туре	Hour AM	Delay ^a	LOS b	Delay 11.4	LOS B	Delay	Sig?	Extension? d	Delay 	LOS	Delay 11.4	LOS B	Delay	Sig?	Extension? d
Princess Joann Road/Cuyamaca Street (future intersection)	Santee	DNE/MSS C	PM			21.6	С	_	No	No		_	21.6	С	_	No	No
	_		AM	7.6	Α	8.5	A	0.9			7.7	Α	8.5	A	0.8		
2. Princess Joann Road/Magnolia Avenue	Santee	AWSC	PM	7.9	Α	10.1	В	2.2	No	No	7.9	Α	10.1	В	2.2	No	No
4. W. J.		414/00	AM	8.9	Α	>100.0	F	>2.0	.,	.,	8.9	Α	>100.0	F	>2.0	.,	.,
4. Woodglen Vista Drive/Cuyamaca Street	Santee	AWSC	PM	9.0	Α	>100.0	F	>2.0	Yes	Yes	9.1	Α	>100.0	F	>2.0	Yes	Yes
			AM	11.9	В	13.4	В	1.5			12.0	В	13.5	В	1.5		
5. Woodglen Vista Drive/Magnolia Avenue	Santee	Signal	PM	10.7	В	11.2	В	0.5	No	No	10.7	В	11.2	В	0.5	No	No
6 Fl Nanal/Cuyamaaa Straat	Santee	AWSC	AM	12.0	В	>100.0	F	>2.0	Yes	Yes	12.3	В	>100.0	F	>2.0	Yes	Yes
6. El Nopal/Cuyamaca Street	Santee	AVVSC	PM	11.8	В	>100.0	F	>2.0	res	163	12.1	В	>100.0	F	>2.0	165	
7. El Nopal/Magnolia Avenue			AM	23.9	С	25.8	С	1.9			24.3	С	26.3	С	2.0	No	
7. Li Nopai/Magnolla Avenue	Santee	Signal	PM	18.3	В	22.2	С	3.9	No	No	18.6	С	23.0	С	4.4		No
12. Beck Drive/Cuyamaca Street	Santee	AWSC	AM	22.4	С	>100.0	F	>2.0	Yes	Yes Yes	24.1	С	>100.0	F	>2.0	Yes	Yes
12. Book Brive, Odyaniada Otrock		71000	PM	13.3	В	>100.0	F	>2.0	103		13.7	В	>100.0	F	>2.0		
13. 2nd Street/Magnolia Avenue			AM	8.0	Α	8.8	А	0.8	-		8.2	Α	9.1	Α	0.9		
	Santee	Signal	PM	6.6	Α	8.6	A	2.0	No	No	6.7	Α	9.3	Α	2.6	No	No
14. Carefree Drive/Magnolia Avenue	Santee	Signal	AM	17.4	В	17.6	В	0.2	No	No	17.8	В	18.0	В	0.2	No	No
		3	PM	9.2	Α	9.4	Α	0.2	-	-	9.3	Α	9.6	Α	0.3	_	
25. Mast Boulevard/Cuyamaca Street	Santee	Signal	AM	36.9	D	98.3	F	61.4	Yes	Yes	38.0	D	>100.0	F	>2.0	Yes	Yes
		3 -	PM	33.3	С	62.9	E	29.6			33.7	D	64.3	Е	30.6	100	
26. Mast Boulevard/Park Center Drive			AM	7.1	Α	7.7	Α	0.6			7.1	Α	7.8	Α	0.7		
	Santee	Signal	PM	8.7	Α	9.1	Α	0.4	No	No	8.9	Α	9.4	Α	0.5	No No	No
27. Mast Boulevard/Magnolia Avenue	Santee	Signal	AM	32.9	С	52.0	D	19.1	No	No	36.6	D	54.4	D	17.8	No	No
	3300	0.3	PM	26.8	С	31.3	С	4.5			28.1	D	33.9	С	5.8		

Source: Attachment 4.

Notes:

General Notes:

SIGNALIZED UNSIGNALIZED

DELAY/LOS THRESHOLDS DELAY/LOS THRESHOLDS

Delay 0.0 ≤ 10.	LOS 0 A		Delay 0.0 ≤ 10.0	LOS A	
10.1 to	20.0	В	10.1 to 1	15.0	В
20.1 to	35.0	С	15.1 to 2	25.0	С
35.1 to	55.0	D	25.1 to 3	35.0	D
55.1 to	80.0	Ε	35.1 to 5	50.0	Ε
	≥ 80.1	F	≥ 50.1	F	

^a Average delay expressed in seconds per vehicle.

b Level of Service

 $^{^{\}circ}~\Delta$ denotes the increase in delay due to Project.

^d See Tables 8–1 and 10–1 in the EIR traffic study (EIR Appendix N) for the "with Magnolia Avenue Extension" analysis.

¹ Sig = Significant impact, yes or no.

² Jur. = Jurisdiction



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Existing + Cumulative Projects + Project Peak Hour Intersections

As seen in Table 11, the following intersections are calculated to operate at LOS E or F with the addition of cumulative traffic and project traffic without the Magnolia Avenue extension, and prohibiting southbound left-turning movements from Cuyamaca Street to local streets:

- Intersection No. 4. Woodglen Vista Drive/Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection No. 6. El Nopal/Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection No. 12. Beck Drive/Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection No. 25. Mast Boulevard/Cuyamaca Street LOS F (AM/PM peak hours)

Based on the established significance criteria, four significant direct impacts were calculated with the addition of project traffic at the study area locations above since the project-induced change in delay is greater than 2.0 seconds for LOS E or F operating intersections. These impacts are also calculated to occur under the project with Magnolia Avenue extension analyzed in the EIR. Thus, no new or more severe significant impacts would occur.

Existing + Project Daily Segment Operations

As seen in Table 12, Segment Operations (No Magnolia Avenue Extension – Prohibited Southbound Left-Turns from Cuyamaca Street), the following street segments are calculated to operate at LOS E or F with the addition of project traffic without the Magnolia Avenue extension, and prohibiting southbound left-turning movements from Cuyamaca Street to local streets:

- Segment No. 41. Cuyamaca Street from Project Site to Magnolia Avenue LOS E
- Segment No. 42. Cuyamaca Street from Magnolia Avenue to Princess Joann Road LOS E
- Segment No. 45. Cuyamaca Street from Woodglen Vista Drive to El Nopal LOS F
- Segment No. 46. Cuyamaca Street from El Nopal to Mast Boulevard LOS F

Based on the established significance criteria, two significant direct impacts were calculated with the addition of project traffic at study area locations above since the project-induced change in V/C is greater than 0.02 for LOS E or F operating street segments. The significant impact on Segment No. 45 is also calculated to occur with the connection of Magnolia Avenue analyzed in the EIR under Year 2035 conditions. The significant impact on Segment No. 46 is also calculated to occur with the connection of Magnolia Avenue analyzed in the EIR under near-term conditions. Segments No. 41 and No. 42 are not deemed to be significant impacts as the intersection operations bookending each segment and the peak hour arterial analyses are calculated to operate at LOS B or better based on standards of practice in the industry and per methodologies for calculating LOS as described in the HCM.



Existing + Cumulative Projects + Project Daily Segment Operations

As seen in Table 12, the following street segments are calculated to operate at LOS E or F with the addition of project traffic without the Magnolia Avenue extension, and prohibiting southbound left-turning movements from Cuyamaca Street to local streets:

- Segment No. 41. Cuyamaca Street from Project Site to Magnolia Avenue LOS E
- Segment No. 42. Cuyamaca Street from Magnolia Avenue to Princess Joann Road LOS E
- Segment No. 45. Cuyamaca Street from Woodglen Vista Drive to El Nopal LOS F
- Segment No. 46. Cuyamaca Street from El Nopal to Mast Boulevard LOS F

Based on the established significance criteria, two significant direct impacts were calculated with the addition of project traffic at study area locations above since the project-induced change in V/C is greater than 0.02 for LOS E or F operating street segments. The significant impact on Segment No. 45 is also calculated to occur with the connection of Magnolia Avenue analyzed in the EIR under Year 2035 conditions. The significant impact on Segment No. 46 is also calculated to occur with the connection of Magnolia Avenue analyzed in the EIR under near-term conditions. Segments No. 41 and No. 42 are not deemed to be significant impacts as the intersection operations bookending each segment and the peak hour arterial analyses are calculated to operate at LOS B or better based on standards of practice in the industry and per methodologies for calculating LOS as described in the HCM.



Table 12. Segment Operations (No Magnolia Avenue Extension – Prohibited Southbound Left-Turns from Cuyamaca Street)

	Existing			Existing	•	•	sting + Pr					EIR Impact w/Magnolia		ng + Cum Projects	ulative	Existing +	Cumulative + Project					EIR Impact w/Magnolia
Street Segment	Jur.	Capacity (LOS E) a	ADT b	LOS °	V/C d	ADT	LOS	V/C	Project Volumes	Δe V/C	Sig?	Avenue Extension? f	ADT	LOS	V/C	ADT	LOS	V/C	Project Volumes	Δe V/C	Sig?	Avenue Extension? f
									Prir	cess Jo	ann Road											
Cuyamaca St to Magnolia Ave	Santee	8,000	530	Α	0.066	1,840	Α	0.230	1,310	0.164	No	No	685	Α	0.086	1,995	Α	0.249	1,310	0.163	No	No
									Wo	odglen V	ista Drive	•										
2. Cuyamaca St to Magnolia Ave	Santee	8,000	1,700	Α	0.213	2,360	Α	0.295	660	0.082	No	No	1,759	Α	0.220	2,419	Α	0.302	660	0.082	No	No
El Nopal																						
3. Cuyamaca St to Magnolia Ave	Santee	8,000	3,780	С	0.473	4,440	С	0.555	660	0.082	No	No	3,886	С	0.486	4,546	С	0.568	660	0.082	No	No
Mast Boulevard																						
13. Cuyamaca St to Magnolia Ave	Santee	40,000	18,490	В	0.462	21,910	С	0.548	3,420	0.086	No	No	19,616	В	0.490	23,036	С	0.576	3,420	0.086	No	No
									C	uyamaca	a Street											
41. Project Site to Magnolia Ave ⁹	Santee	DNE/ 15,000	_	_	_	13,920	E ^h	0.928	13,920	_	No ^h	No ^h	_	_	_	13,920	E ^h	1.000	13,920	_	No ^h	No ^h
42. Magnolia Ave to Princess Joann Rd ⁹	Santee	DNE/15,000	_	_	_	13,920	E h	0.928	13,920	_	No ^h	No ^h	_	_	_	13,920	E ^h	1.000	13,920	_	No h	No ^h
43. Princess Joann Rd to Chaparral Dr ⁹	Santee	DNE/15,000	_	_	_	12,610	D	0.841	12,610	_	No	No	_	_	_	12,610	D	1.000	12,610	_	No	No
44. Chaparral Dr to Woodglen Vista Dr i	Santee	15,000/ 40,000	670	A	0.045	13,280	A i	0.332	12,610	0.287	No	No	683	Α	0.046	13,293	A i	0.332	12,610	0.315	No	No
45. Woodglen Vista Dr to El Nopal	Santee	15,000	4,360	Α	0.291	16,310	F	1.087	11,950	0.796	Yes	Yes ^j	4,472	Α	0.298	16,422	F	1.095	11,950	0.797	Yes	Yes ^j
46. El Nopal to Mast Blvd	Santee	15,000	8,860	С	0.591	20,160	F	1.344	11,300	0.753	Yes	Yes	9,173	С	0.612	20,473	F	1.365	11,300	0.753	Yes	Yes
									N	agnolia <i>i</i>	Avenue											
54. Cuyamaca St to Princess Joann Rd	Santee	DNE	_	_	_	_	_	_	_		_	_	_	_	_	_	_	_	_	_	-	_
55. Princess Joann Rd to Woodglen Vista Dr	Santee	40,000	2,020	Α	0.051	3,330	Α	0.083	1,310	0.032	No	No	2,204	Α	0.055	3,514	Α	0.088	1,310	0.033	No	No
56. Woodglen Vista Dr to El Nopal	Santee	40,000	9,030	Α	0.226	11,000	Α	0.275	1,970	0.049	No	No	9,415	Α	0.235	11,385	Α	0.285	1,970	0.050	No	No
57. El Nopal to Mast Blvd	Santee	40,000	13,690	Α	0.342	16,320	В	0.408	2,630	0.066	No	No	14,291	Α	0.357	16,921	В	0.423	2,630	0.066	No	No

Source: Attachment 4.

Notes:

- ^a Capacities based on City of Santee Roadway Classification & LOS table.
- b Average Daily Traffic
- ^c Level of Service
- d Volume to Capacity ratio
- ^e Δ denotes a Project-induced increase in the Volume to Capacity ratio
- ^f See Table 8–2 in the EIR traffic study for the "with Magnolia Avenue Extension" analysis.
- ^g The 15,000 ADT capacity for the existing sections of Cuyamaca Street was continued along this future section providing access to the Project.
- h The intersection operations at both ends of the Cuyamaca Street road segment between the Project Site and Woodglen Vista Drive report LOS C or better operations and the peak hour arterial operations indicate LOS B or better operations. Therefore, adequate operations are expected along this roadway. See Tables 7 and 8.
- As part of the Project Design Features for this Project, Cuyamaca Street from Chaparral Drive to Woodglen Vista Drive is proposed to be improved to four-lane Major Road standards. Therefore, an LOS E capacity of 40,000 ADT was used in the "Plus Project" analyses.
- Ji Without the connection of the Magnolia Avenue Extension, this segment impact would be a direct impact instead of a cumulative impact, as identified in the EIR traffic study. The mitigation recommended in the EIR of improving Cuyamaca Street between Woodglen Vista Drive and El Nopal to four lanes would still be recommended. Therefore, no new impacts would occur without the extension of Magnolia Avenue and the mitigation would be unchanged.

General Notes:

- ¹ Sig = Significant impact, yes or no.
- ² DNE, "—" = Does not exist.



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Peak Hour Arterial Analysis

The Cuyamaca Street intersections with Princess Joann Road and Woodglen Vista Drive would be improved from stop controls to traffic signals as part of the project mitigation (TRA-2, TRA-4) detailed in the EIR. Table 9 of the Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum (Attachment 4) shows the results of the mitigated intersection LOS without Magnolia Avenue and with restricted southbound left-turn movements. Based on the computed intersection analysis, the signalized intersections would operate at LOS B or better, and thus, the roadway would be expected to operate efficiently since LOS B is calculated at the intersections on either end of each segment with the proposed mitigation.

Table 10 of the Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum (Attachment 4) summarizes the Existing + Cumulative Projects + Project peak hour arterial operations of Cuyamaca Street without the Magnolia Avenue extension, restricting southbound left-turns from Cuyamaca Street. The section of Cuyamaca Street from the project site to Woodglen Vista Drive serves as an access route to a major roadway (Mast Boulevard) ultimately connecting to daily commuter routes, which classifies as a Class III Arterial, per the HCM. Table 10 shows travel speeds (mph) in both directions on Cuyamaca Street along this section operating at LOS B or better.

VMT Impacts

The TIA (EIR Appendix N) analyzed the proposed project's VMT using data science under existing baseline conditions and using the San Diego Association of Governments travel demand model for Year 2035 conditions. For the Year 2035 VMT analysis, the San Diego Association of Governments model VMT results were reported. The north/south routes of Cuyamaca Street and Magnolia Avenue run parallel to each other for their existing entirety. Without the future extension of Magnolia Avenue coded into the model, any trip destined to/from Magnolia would travel virtually the same distance along Princess Joann Road, Woodglen Vista Drive, El Nopal, or Mast Boulevard (with restricted southbound lefts on Cuyamaca Street), thus also negligibly affecting the results of the VMT analysis.

The VMT conclusion would not change as a result of the deletion of the extension of Magnolia Avenue. For the reasons explained herein, the grid-like pattern of the north/south corridors of Cuyamaca Street and Magnolia Street intersecting with the east/west roadways of Princess Joann Road, Woodglen Vista Drive, El Nopal, and Mast Boulevard would result in a de minimis change in the distances traveled between the project site and destinations to the south under the full movement scenario when Magnolia Avenue is not extended. For the scenario with southbound left-turns on Cuyamaca Street prohibited, additional VMT would occur for drivers oriented to and from El Nopal to the east. Since 10 percent of the total trip generation is oriented to and from El Nopal and a small amount of additional trip length (approximately 1.25 miles for 1,313 project



ADT) would occur with this scenario, the overall project increase in VMT of 1,643 (0.67 percent) would be de minimis (Fanita Ranch Supplemental VMT Memorandum, LLG, September 2020 [included in Attachment 4]).

In addition, it should be noted that the VMT impact was found to be significant and unavoidable in the EIR, and no changes to those conclusions would occur without the connection of Magnolia Avenue under both scenarios.

Summary

Without the construction of the Magnolia Avenue extension, one roadway segment would experience a direct impact instead of a cumulative impact (Cuyamaca Street between Woodglen Vista Drive and El Nopal). Mitigation Measure TRA-25 in the EIR recommended that improving Cuyamaca Street between Woodglen Vista Drive and El Nopal to four lanes would fully mitigate this impact. No new impacts would occur by removing the extension of Magnolia Avenue. Implementation of the mitigation measures proposed in the TIA and EIR (TRA-1 through TRA-30, AIR-6) (EIR Appendix N) would fully mitigate the impacts associated with the deletion of the Magnolia Avenue extension.

Utilizing the methodology in the EIR, an analysis was conducted at each of the impacted locations with the deletion of the Magnolia Avenue extension to determine the number of units that could be built before a significant project impact would occur. As shown in Table 13, the equivalent dwelling units (EDU) triggers for mitigation measures would be changed for six mitigation measures as a result of the transfer of project traffic from Magnolia Avenue to Cuyamaca Street. The updated mitigation triggers identified in Table 13 are included in the MMRP for the proposed project using the more conservative EDU triggers identified for the Prohibited Southbound Left-Turns scenario.

Table 13. Mitigation Measure EDU Triggers without Magnolia Avenue Extension

Mitigation Measure	EDU Triggers – Identified in the EIR	EDU Triggers Full Access Scenario	EDU Triggers Prohibited Southbound Left-Turns
TRA-4	2,212	1,592	1,563
TRA-5	1,327	1,150	1,091
TRA-8	265	236	236
TRA-12	2,212	2,005	1,268
TRA-25	155	118	118
TRA-26	1,481	1,302	1,302

Source: Attachment 4.

1.3.2.7 Section 4.17: Utilities and Service Systems

The removal of the Magnolia Avenue extension as a project design feature would result in slight changes to utilities but would not cause additional impacts under the preferred land use plan with school and land



use plan without school compared to the analysis provided in the EIR. By not extending Magnolia Avenue certain utilities adjustments would need to be made, as described below. A Fanita Ranch – Magnolia Avenue Deletion/Utilities and Storm Drain Memorandum (Attachment 2) analyzes the impacts on new or expanded utilities and service systems from the deletion of the extension of Magnolia Avenue from the existing terminus to the proposed extension of Cuyamaca Street.

Water Infrastructure and Facilities

The Water Service Study (2020) (EIR Appendix O1) prepared by Michael Baker International identifies a 12-inch water line (880 zone) within the Magnolia Avenue extension. The study concludes that this water line is to be used to serve the new hydrants along this street and is not hydraulically necessary to serve the proposed project (see Section 4.17.5.1 of the EIR, Appendix O1, Item 4). Therefore, elimination of the Magnolia Avenue extension would not impact the ability to provide water service to the proposed project.

Wastewater Infrastructure and Facilities

The Sewer Service Study (2020) (EIR Appendix O2) prepared by Michael Baker International does not identify any sewer improvements in the Magnolia Avenue extension. Therefore, elimination of the Magnolia Avenue extension would not impact the ability to provide sewer service to the proposed project.

Stormwater Infrastructure and Facilities

Basin BF-1-10A is currently proposed approximately 1,000 feet east of Cuyamaca Street along the right-of-way for the Magnolia Avenue extension. This basin provides water quality, hydromodification, and critical course sediment mitigation for the reach of Cuyamaca Street north of the Magnolia Avenue and south of the water tank, and also for the easterly 1,000-foot reach of the Magnolia Avenue extension. With the deletion of the Magnolia Avenue extension, an interim basin would be installed adjacent to and directly east of Cuyamaca Street on property currently identified as APN 378-220-05. The interim basin would be built within the future right-of-way for Magnolia Avenue and would be constructed entirely within the grading footprint analyzed by the EIR with the Magnolia Avenue extension. The deletion of the Magnolia Avenue extension reduces the impervious area treated by the original basin by approximately 30 percent. The bottom area of the interim basin would be reduced in size accordingly. The interim basin would be removed at such time that Magnolia Avenue is extended, consistent with buildout of the General Plan, and a new basin would be required in a size and location similar to the basin that was eliminated with the deletion of the Magnolia Avenue extension.

Water Supply Availability, Wastewater Treatment Capacity, Solid Waste

The removal of the Magnolia Avenue extension as a project design feature would result in the same less than significant impacts on water supply availability, wastewater treatment capacity, and



solid waste as the analysis analyzed in the EIR. The removal of this roadway extension would not affect the ability of the water service provider, wastewater service provider, and solid waste haulers to serve the proposed project.

1.3.2.8 Section 4.18: Wildfire

The removal of the Magnolia Avenue extension as a project design feature would result in the same less than significant impacts on wildfire as the analysis provided in the EIR under the preferred land use plan with school and land use plan without school. A Fanita Ranch Fire Protection Plan and Evacuation Plan Analysis of No Magnolia Extension (Attachment 1) was prepared by Dudek (2020), which provides a summary of the results of the analysis of the project without the extension of Magnolia Avenue with regard to fire protection and evacuation.

A Fire Protection Plan (FPP) and a Wildland Fire Evacuation Plan were originally prepared for the project, both of which are included in the EIR as Appendices P1 and P2, respectively. The FPP analyzed the fire environment and required various fire safety features including application of the required fire codes along with code-exceeding features where found to be prudent. The Wildland Fire Evacuation Plan provides a resident-focused document to assist in preparedness and awareness, as well as background on how evacuations are managed and examples of law enforcement direction that may be provided to residents during an evacuation.

The Magnolia Avenue extension provided an intersection between Cuyamaca Street and Magnolia Avenue north of existing streets that currently connect these two roads. Magnolia Avenue is not a direct access point to the project site. With the Magnolia Avenue extension, there are two points of ingress/egress and without the Magnolia Avenue extension, there remain two points of ingress/egress. In no case in the FPP, the Wildland Fire Evacuation Plan, or the EIR, was the Magnolia Avenue extension considered a critical component to fire protection, fire response, or evacuation of the proposed project. The 2019 California Fire Code, Appendix D, and The City's local amendments to the California Fire Code require projects with greater than 200 dwelling units to include two separate access routes. Without the Magnolia Avenue extension, the project has two access points: Fanita Parkway and Cuyamaca Street. Thus, even absent the Magnolia Avenue extension, the project meets fire code requirements for secondary access.

The Magnolia Avenue extension was designed to provide an optional two-lane route (one lane in each direction) to Cuyamaca Street that was approximately 1,300 feet north of existing Princess Joann Road (see Attachment 1 of the Fanita Ranch Fire Protection Plan and Evacuation Plan Analysis of No Magnolia Extension, which is included as Attachment 1 to this Second Errata). The use of this alternative route to Cuyamaca Street during an evacuation would be highly dependent on the wildfire scenario and where emergency managers choose to direct evacuees. Without the Magnolia Avenue extension, emergency managers would retain the ability to route traffic to Magnolia Avenue via three existing two lane roadways (Princess Joann Road, Woodglen



Vista Drive, and El Nopal) and other more circuitous available options intersecting these east-west routes (see Attachment 2 of the Fanita Ranch Fire Protection Plan and Evacuation Plan Analysis of No Magnolia Extension, which is included as Attachment 1 to this Second Errata). While the Magnolia Avenue extension would potentially allow emergency managers to route a percentage of evacuating proposed project vehicles to Magnolia Avenue north of the existing neighborhoods, it would not necessarily result in more efficient evacuations. Without the Magnolia Avenue extension, the same primary roadways would be used to move vehicles out of the area. Existing residents and proposed project residents would be routed to Cuyamaca Street and Magnolia Avenue via existing and project-provided roadways, while existing residents may also be moved south via the neighborhood-internal Timberlane Way, an additional north—south connection to Mast Boulevard.

Evacuations are fluid events that rely on situational awareness to guide decision-making. San Diego County Sherriff's Department has vast experience managing large wildfire evacuations and relies on cutting edge technology, robust personnel resources, and real-time decision-making to move people and their vehicles during evacuations. Options are critical for successful evacuations. Proposed project evacuation options are available with or without the Magnolia Avenue extension. Without the extension, the existing portion of Magnolia Avenue is still potentially available, as it would be with the extension, if emergency managers determine it is needed.

The following information provides a summary of the Magnolia Avenue extension analysis in the FPP, Wildland Fire Evacuation Plan, and the EIR. The revisions to EIR Section 4.18.5.1, Threshold 1: Emergency Response Plan or Evacuation Plan, are also provided.

Appendix P1 – Fire Protection Plan

The FPP refers to Magnolia Avenue in several sections, including:

Section 3, where it indicates that internal roads would provide residents the option to evacuate from at least two routes that lead to three main arteries. The FPP states: "Depending on the nature of the emergency, residents can exit to the south on Fanita Parkway or Cuyamaca Street, which would also connect with the extension of Magnolia Avenue." Without the Magnolia Avenue extension, the first portion of this statement remains accurate, as vehicles could be routed via the existing east-west roads (Princess Joann Road, Woodglen Vista Drive, and El Nopal) to existing Magnolia Avenue. The potential for existing speed bumps along Princess Joann Road affecting an evacuation is minimal. Typical evacuation speeds are less than posted speed limits, particularly in large-scale evacuations.

Also in Section 3, the FPP indicates that the Magnolia Avenue extension would achieve roadway substantial completion prior to the issuance of certificate of occupancy for the 1,500th EDU for the project in accordance with the project phasing plan. Because the east-west connector roads between Cuyamaca Street and Magnolia Avenue already exist, the ability to route evacuating



vehicles to Magnolia Avenue would be available at the completion of the Cuyamaca Street extension, which would occur during Phase 1 of the project. As such, there would be no measureable impact associated with this project change.

Section 5.2 and Figures 11 and 12 provide results of an emergency response time analysis. The on-site fire station can reach all project units within the City's internal response times. As part of the analysis to determine if any existing fire stations could service the project within required response times, Station 4, which is southeast of the project site, was modeled. The modeling included an existing condition with Cuyamaca Street extended into the project site and a second model utilizing Magnolia Avenue with the Magnolia Avenue extension. The Magnolia extension was found to result in a 6 second faster response to the most remote structures. This result is immaterial in terms of its additional time but also for the fact that the on-site fire station is demonstrated to provide fast initial response to all structures. This analysis is consistent with the conclusion that the Magnolia Avenue extension is not critical for the project's fire safety.

Appendix P2 - Wildland Fire Evacuation Plan

The Wildland Fire Evacuation Plan refers to Magnolia Avenue in several sections, including:

Section 1, where it indicates Magnolia Avenue would be a potential evacuation route: "Evacuating traffic would potentially have the option of continuing south on Cuyamaca Street or Magnolia Avenue once south of the project's boundaries. Note that the Magnolia Avenue connection would be constructed by the 1500th certificate of occupancy. The available evacuation routes prior to the Magnolia Avenue connection (Fanita Parkway and Cuyamaca Street) would meet the 2019 California Fire Code, Appendix D, and the Santee Municipal Code and Ordinance 570 requirement for multiple access points, and therefore, are considered adequate for emergency purposes for the interim period until the 1500th certificate of occupancy." Because there would still be a minimum of three east—west connector roads between the extended Cuyamaca Street and the existing portion of Magnolia Avenue, there is no measureable impact related to the removal of the Magnolia Avenue extension.

Section 4 indicates the "probable" roadways that would be utilized in a wildfire evacuation. The plan states that "The primary roadways that would be used for evacuation from Fanita Ranch are Fanita Parkway, Cuyamaca Street and Magnolia Avenue." It further states that "These roads provide access to major traffic corridors including indirectly to SR-52 to the south, southwest and southeast, SR-67 to the east and northeast, I-125 to the south, and I-15 to the west." This statement remains valid without the Magnolia Avenue extension because the existing portion of Magnolia Avenue would still be available, if needed by emergency managers during an evacuation.

Also in Section 4, the plan indicates that Cuyamaca Street and/or Magnolia Avenue would be the primary routes for the majority of the evacuation traffic, with Fanita Parkway providing evacuation



for the western portion of the community. This statement remains valid without the Magnolia Avenue extension.

Section 6.1 repeats Section 1 statements regarding Cuyamaca Street and Magnolia Avenue as available evacuation routes for proposed project residents and guests. Because these routes would still be potentially available during evacuations (depending on the nature of the event and the evacuation strategy employed by emergency managers), the statement remains valid without the Magnolia Avenue extension.

Environmental Impact Report

The Magnolia Avenue extension is discussed in various EIR sections, describing its planned attributes, timing, grading, and benefits. The occurrence that represents the most substantive analysis is found in Chapter 4, Section 4.18, Wildfire, specifically Section 4.18.5.1, regarding potential impacts. Without the Magnolia Avenue extension, the ability to access Magnolia Avenue is retained through existing streets. With the Magnolia Avenue extension, potential evacuation traffic from the project site would be directed to utilize Cuyamaca Street or Magnolia Avenue by emergency managers, likely stationed at the Cuyamaca Street/Magnolia Avenue intersection, depending on the type of evacuation and traffic flow. Without the Magnolia Avenue extension, project evacuation traffic would still be directed to utilize Cuyamaca Street or the existing portion of Magnolia Avenue, but emergency managers may be positioned at any of the three existing eastwest connector streets to direct traffic. The same number of vehicles from the proposed project and the existing community would be evacuating in either scenario, with Cuyamaca Street and Magnolia Avenue representing the primary routes and Timberlane Way also potentially available to existing residents, resulting in a similar assessment and conclusion.

Summary

The EIR analysis, which incorporated the Magnolia Avenue extension, concluded that the project would not substantially impair an adopted emergency response plan or emergency evacuation plan. Accordingly, the EIR concluded that the project would have a less than significant impact under CEQA. Without the Magnolia Avenue extension, as indicated in the preceding analysis herein, several available options remain that can incorporate the existing portion of Magnolia Avenue into an evacuation plan, if needed. Because the original evacuation plan does not rely on Magnolia Avenue for evacuation success and the project meets the code requirements for access roads, the same significance conclusion would result (i.e., absent the Magnolia Avenue extension, the site would have a less than significant impact related to substantially impairing an adopted emergency response plan or emergency evacuation plan).



1.4 Chapter 6: Alternatives

Five alternatives to the proposed project were analyzed in the EIR: (1) No Project/No Build Alternative, (2) No Project/General Plan Consistency Alternative, (3) Modified Development Footprint Alternative, (4) No Fanita Commons Reduced Project Alternative, and (5) No Vineyard Village Reduced Project Alternative. The elimination of the Magnolia Avenue extension as a project design feature would mean that, while the proposed project satisfies Project Objective 9 to a great extent by installing and extending Fanita Parkway and Cuyamaca Avenue, it would not completely meet the objective. Similarly, any project alternative that does not propose to install the Magnolia extension would also not satisfy that component of Project Objective 9. The No Fanita Commons Reduced Project Alternative and the No Vineyard Village Reduced Project Alternative, which propose the Magnolia Avenue extension, would satisfy Project Objective 9 to a greater degree than the proposed project.

1.5 Conclusion

As illustrated in the discussion above, the removal of the off-site improvement and extension of Magnolia Avenue as a project design feature would not increase impacts or cause new impacts to occur as analyzed in the Draft Revised EIR. None of the clarifications as a result of the removal of the Magnolia Avenue extension as a project feature results in "significant new information" pursuant to CEQA Guidelines, Section 15088.5(a), which would require recirculation of the Draft Revised EIR. Information can include changes in the project or environmental setting, as well as additional data or other information. New information is not significant unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment on a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect. "Significant new information" could include the following:

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

As stated in CEQA Guidelines, Section 15088.5(b), recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR. While minor clarifications were incorporated into the Final Revised EIR, they do not trigger the need for recirculation because they do not constitute "significant new

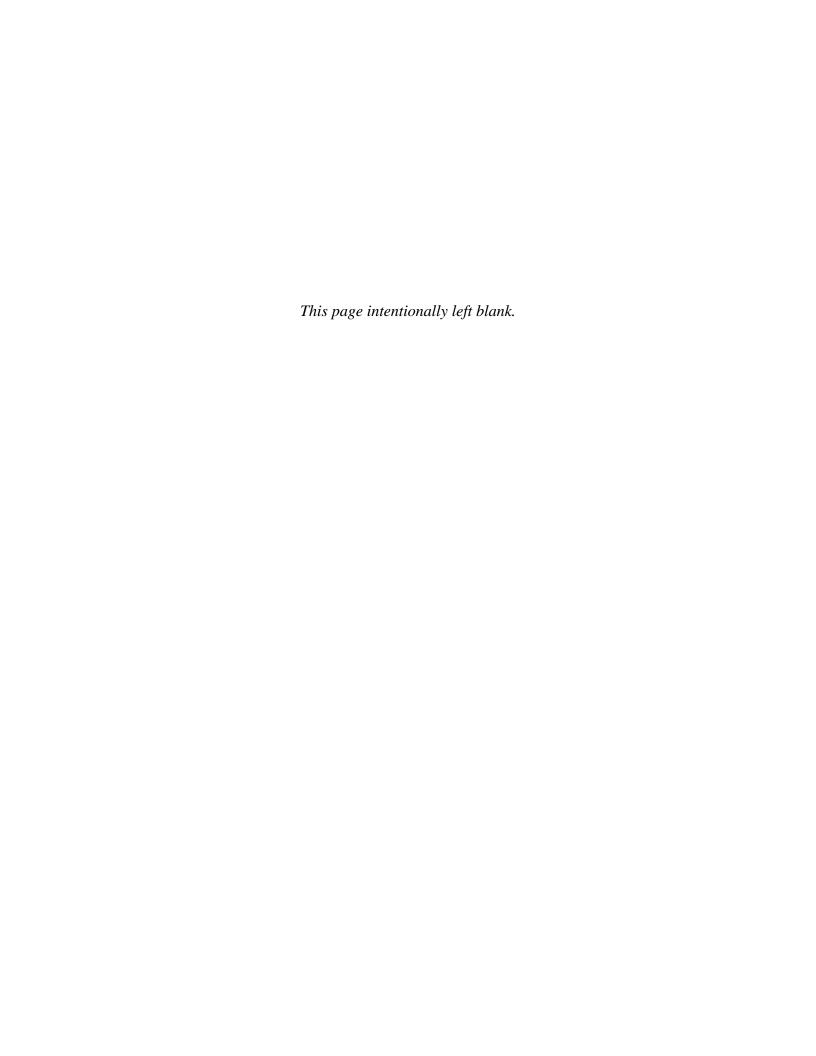


information" or "deprive the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement." Therefore, the City has determined that the elimination of the Magnolia Avenue extension does not trigger recirculation of the Draft Revised EIR.



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MEMORANDUM

To: Marnie Borg, Principal Environmental Planner, City of Santee

From: Dudek Fire Protection Planning Team; Michael Huff, Principal Fire Protection Planner

Subject: Fanita Ranch Fire Protection Plan and Evacuation Plan Analysis of No Magnolia Extension

Date: 8/31/2020

cc: Jeff O'Connor, HomeFed Corporation

Attachment(s): 1) Magnolia Extension, 2) No Magnolia Extension

This memorandum provides a summary of the results of Dudek's analysis of the Fanita Ranch "no Magnolia extension alternative" with regard to fire protection and evacuation. Dudek previously prepared a Fire Protection Plan and a Wildland Fire Evacuation Plan for the Fanita Ranch project, both of which are included in the project's EIR as Appendices P1 and P2, respectively. The Fire Protection Plan analyzed the fire environment and required various fire safety features including application of the required fire codes along with code-exceeding features where found to be prudent. The Wildland Fire Evacuation Plan provides a resident-focused document to assist in preparedness and awareness as well as providing background on how evacuations are managed and examples of law enforcement direction that may be provided to residents during an evacuation.

The Magnolia extension provided an intersection between Cuyamaca Street and Magnolia Avenue north of existing streets that currently connect these two roads. The Magnolia extension is located off-site, approximately 1,250 feet from the project entry. Magnolia Avenue is not a direct access point to Fanita Ranch. With the Magnolia Extension, there are two points of ingress/egress and without the Magnolia extension, there remain two points of ingress/egress. In no case in the Fire Protection Plan, the Wildland Fire Evacuation Plan, or the EIR, was the Magnolia extension considered a critical component to fire protection, fire response or evacuation of the Fanita Ranch Project. The 2019 California Fire Code, Appendix D and Santee's local amendments to the CFC require projects with greater than 200 dwelling units to include 2 separate access routes.

Without the Magnolia extension, the project has two access points at Fanita Parkway and Cuyamaca Street. Thus, even absent the Magnolia extension, the project meets fire code requirements for secondary access.

The Magnolia extension would provide an optional two lane (one lane each direction) route to Magnolia Avenue that was located approximately 1,300 feet to the north of existing Princess Joann Road (Attachment 1). The use of this alternative to Cuyamaca Street during an evacuation would be highly dependent on the wildfire scenario and where emergency managers chose to direct evacuees. Without the Magnolia extension, emergency managers would retain the ability to route traffic to Magnolia Avenue via three existing two lane roadways (Princess Joann Road, Woodglen Vista Drive, and El Nopal) and other more circuitous available options intersecting these east-west routes (Attachment 2). While the Magnolia extension would potentially allow emergency managers to route a percentage of evacuating Fanita Ranch vehicles to Magnolia Avenue north of the existing neighborhoods, it would not necessarily result in more efficient evacuations. Without the Magnolia extension, the same primary roadways would be used to move vehicles out of the area. Existing residents and Fanita Ranch residents would be routed to Cuyamaca Street and Magnolia Avenue via existing and project-provided roadways, while existing residents may



also be moved south via the neighborhood-internal Timberlane Way, an additional north-south connection to Mast Boulevard.

Evacuations are fluid events that rely on situational awareness to guide decision making. San Diego County Sherriff's Department has vast experience managing large wildfire evacuations and relies on cutting edge technology, robust personnel resources, and real-time decision making to move people and their vehicles during evacuations. Options are critical for successful evacuations. Fanita Ranch evacuation options are available with or without the Magnolia extension. Without the extension, Magnolia Avenue is still potentially available, as it would be with the extension, if emergency managers determine it is needed.

The following information provides a summary of the EIR's and its appendices' Magnolia extension analysis. The revisions that would be appropriate for CEQA impact Threshold 1 are also provided.

Appendix P1 - Fire Protection Plan

The Fanita Ranch Fire Protection Plan refers to Magnolia road in several sections, including:

Section 3, where it indicates that internal roads would provide residents the option to evacuate from at least 2 routes that lead to 3 main arteries. The FPP states: "Depending on the nature of the emergency, residents can exit to the south on Fanita Parkway or Cuyamaca Street, which would also connect with the extension of Magnolia Avenue". Without the Magnolia extension, this statement remains accurate, as vehicles could be routed via the existing east-west roads (Princess Joann, Woodglen Vista Drive, and El Nopal) to existing Magnolia Road. The potential for existing speed bumps along Princess Joann affecting an evacuation is minimal. Typical evacuation speeds are less than posted speed limits, particularly in large-scale evacuations.

Also in Section 3, the FPP indicates that the Magnolia extension would achieve Roadway Substantial Completion prior to the issuance of certificate of occupancy for the 1,500th equivalent dwelling units (EDU) for the Project in accordance with the Project Phasing Plan. Because the east-west connector roads between Cuyamaca Street and Magnolia Avenue already exist, the ability to route evacuating vehicles to Magnolia will be available at the completion of the Cuyamaca Street extension, which would be during Phase 1 of the project. As such, there would be no measureable impact associated with this project change.

Section 5.2 and Figures 11 and 12 provide results of an emergency response time analysis. The on-site fire station can reach all project units within Santee's internal response times. As part of the analysis to determine if any existing Fire Stations could service the project within required response times, Station 4, which is located southeast of Fanita Ranch, was modeled. The modeling included an existing condition with Cuyamaca Street extended into Fanita Ranch and a second model utilizing Magnolia Avenue with the Magnolia extension. The Magnolia extension was found to result in a 6 second faster response to the most remote structures. This result is immaterial in terms of its additional time, but also for the fact that the on-site fire station is demonstrated to provide fast initial response to all structures. This analysis is consistent with the conclusion that the Magnolia extension is not critical for the project's fire safety.

Appendix P2- Wildland Fire Evacuation Plan

The Wildland Fire Evacuation Plan refers to Magnolia Road in several sections, including:



Section 1, where it indicates Magnolia Avenue would be a potential evacuation route: Evacuating traffic would potentially have the option of continuing south on Cuyamaca or Magnolia once south of the Project's boundaries. Note that the Magnolia Avenue connection will be constructed by the 1500th certificate of occupancy. The available evacuation routes prior to the Magnolia connection (Fanita Parkway and Cuyamaca Street) would meet the 2019 California Fire Code, Appendix D and Santee's local amendments to the CFC requirement for multiple access points, and therefore, are considered adequate for emergency purposes for the interim period until the 1500th certificate of occupancy. Because there would still be a minimum of three east-west connector roads between the extended Cuyamaca Street and Magnolia Avenue, there is no measureable impact related to the removal of the Magnolia extension.

Section 4 indicates the "probable" roadways that would be utilized in a wildfire evacuation. The plan states that "The primary roadways that would be used for evacuation from Fanita Ranch are Fanita Parkway, Cuyamaca Street and Magnolia Avenue". It further states that "These roads provide access to major traffic corridors including indirectly to SR 52 to the south, southwest and southeast, SR 67 to the east and northeast, I-125 to the south, and I-15 to the west". This statement remains valid without the Magnolia extension as Magnolia Avenue would still be available, if considered needed by emergency managers, during an evacuation.

Also in Section 4, the plan indicates that Cuyamaca Street and/or Magnolia would be the primary routes for the majority of the evacuation traffic, with Fanita Parkway providing evacuation for the western portion of the community. This statement remains valid without the Magnolia extension.

Section 6.1 repeats Section 1 statements regarding Cuyamaca Street and Magnolia Avenue as available evacuation routes for Fanita Ranch residents and guests. Because these routes would still be potentially available during evacuations (depending on the nature of the event and the evacuation strategy employed by emergency managers), the statement remains valid without the Magnolia extension.

Environmental Impact Report

The Magnolia Avenue extension is discussed in various EIR sections, describing its planned attributes, timing, grading, and benefits. The occurrence that represents the most substantive analysis is found in Chapter 4 (4.18.5.1), regarding potential impacts. Without the Magnolia extension, the ability to access Magnolia Avenue is retained through existing streets. With the Magnolia extension, potential evacuation traffic from Fanita Ranch would be directed to utilize Cuyamaca Street or Magnolia Avenue by emergency managers, likely stationed at the Cuyamaca/Magnolia intersection, depending on the type of evacuation and traffic flow. Without the Magnolia extension, Fanita Ranch evacuation traffic would still be directed to utilize Cuyamaca Street or Magnolia, but emergency managers may be positioned at any of the three existing east-west connector streets to direct traffic. The same number of vehicles from Fanita Ranch and the existing community would be evacuating in either scenario, with Cuyamaca and Magnolia representing the primary routes and Timberlane Way also potentially available to existing residents, resulting in a similar assessment and conclusion. The following edits would be provided to the impact discussion for Threshold 1:

Threshold 1: Emergency Response Plan or Evacuation Plan: The primary streets that would be used for evacuation from the project site are Fanita Parkway, Cuyamaca Street, and Magnolia Avenue. These streets would provide access to major traffic corridors including directly or indirectly to State Route (SR-) 52 to the south, SR-67 to the east, Interstate (I-) 8 to the south, I-125 to the south, and I-15 to the west (Appendix P2). During an emergency

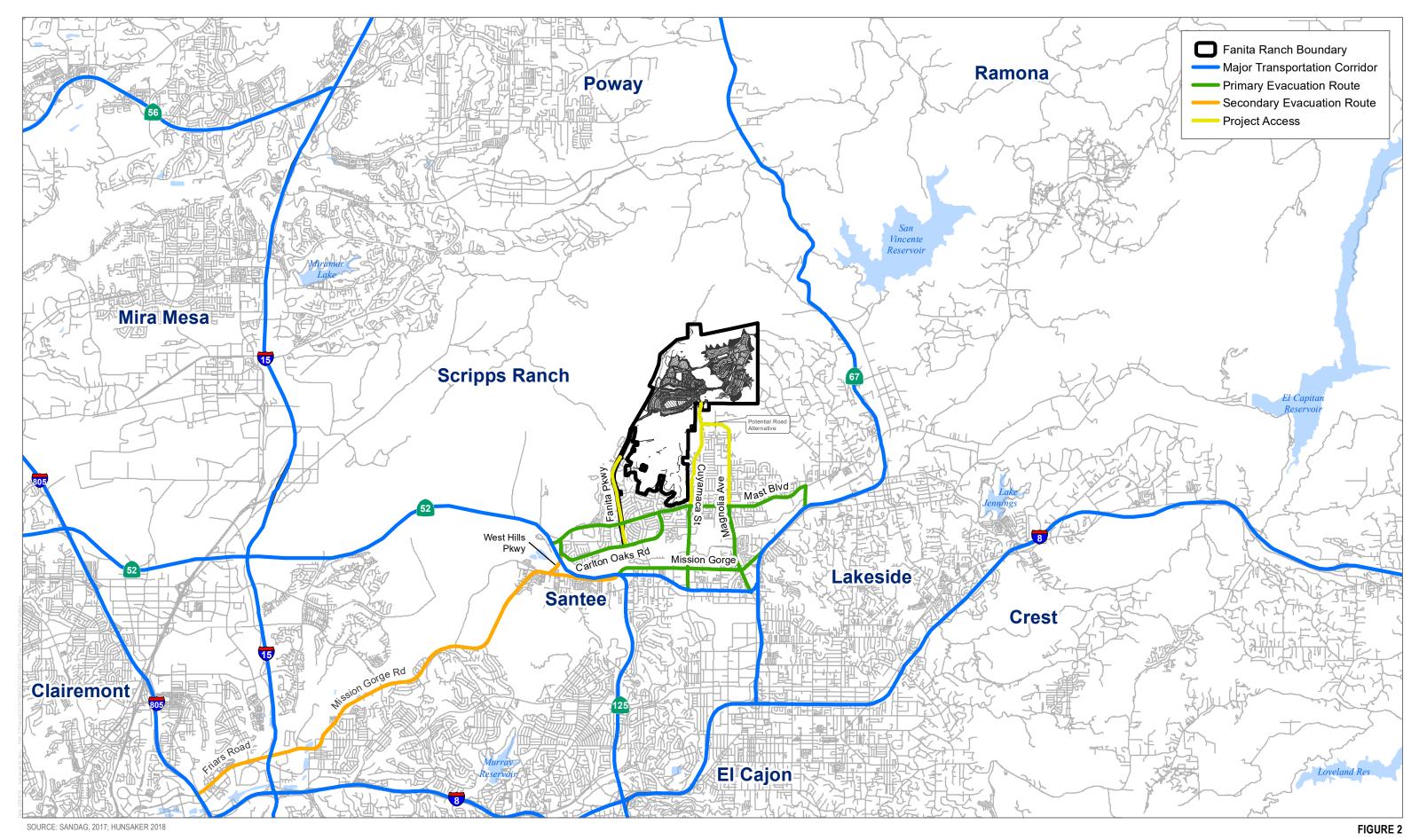
evacuation from the project site, the primary and secondary roadways would be capable of providing resident egress while responding emergency vehicles are traveling inbound. In addition, bicycle lanes would be provided in both directions that can act as emergency lanes for first responders and evacuation lanes for project occupants. Because the roadways are designed to meet or exceed the 2019 California Fire Code requirements and Santee's local amendments to the CFC, including unobstructed travel lanes consistent with the Fanita Ranch Specific Plan standards, adequate parking, 28-foot inside radius, grade maximums, signals at intersections, and extremely wide roadside fuel modification zones, potential conflicts that could reduce roadway efficiency would be minimized, allowing for smooth evacuations. Additionally, the streets would provide residents the option to evacuate from at least two routes that lead to three main arteries. Depending on the nature of the emergency, residents can exit south on Fanita Parkway or Cuyamaca Street, which also connects with Magnolia Avenue (Appendix P2) via existing streets (Princess Joann, Woodglen Vista Drive, and El Nopal). Note that the Magnolia Avenue extension would be constructed by the certificate of occupancy of the 1,500th equivalent dwelling unit. The available evacuation routes prior to the Magnolia Avenue connection (Fanita Parkway and Cuyamaca Street) would meet the 2019 California Fire Code, Appendix D, and the Santee Municipal Code and Ordinance 570 requirement for multiple access points. Therefore, the evacuation routes are considered adequate for emergency purposes through all phases of the project. Refer to Figure 4.8-1, Emergency Evacuation Plan, in Section 4.8 for a depiction of the evacuation plan for the project site. (EIR p. 4.18-8 – 4.18-9.)

Impact Conclusion

The EIR analysis, which incorporated the Magnolia extension, concluded that the project would not substantially impair an adopted emergency response plan or emergency evacuation plan. Accordingly, the EIR concluded that the project would have a less than significant impact under CEQA. Without the Magnolia extension, as indicated in the preceding analysis herein, there remain several available options that can incorporate Magnolia Avenue into an evacuation, if needed. Because the original evacuation plan does not rely on Magnolia Avenue for evacuation success and the project meets the code requirements for access roads, the same significance conclusion results, i.e., absent the Magnolia extension, the site would have a less than significant impact related to substantially impairing an adopted emergency response plan or emergency evacuation plan.

Attachment 1

Magnolia Extension Evacuation Route Map

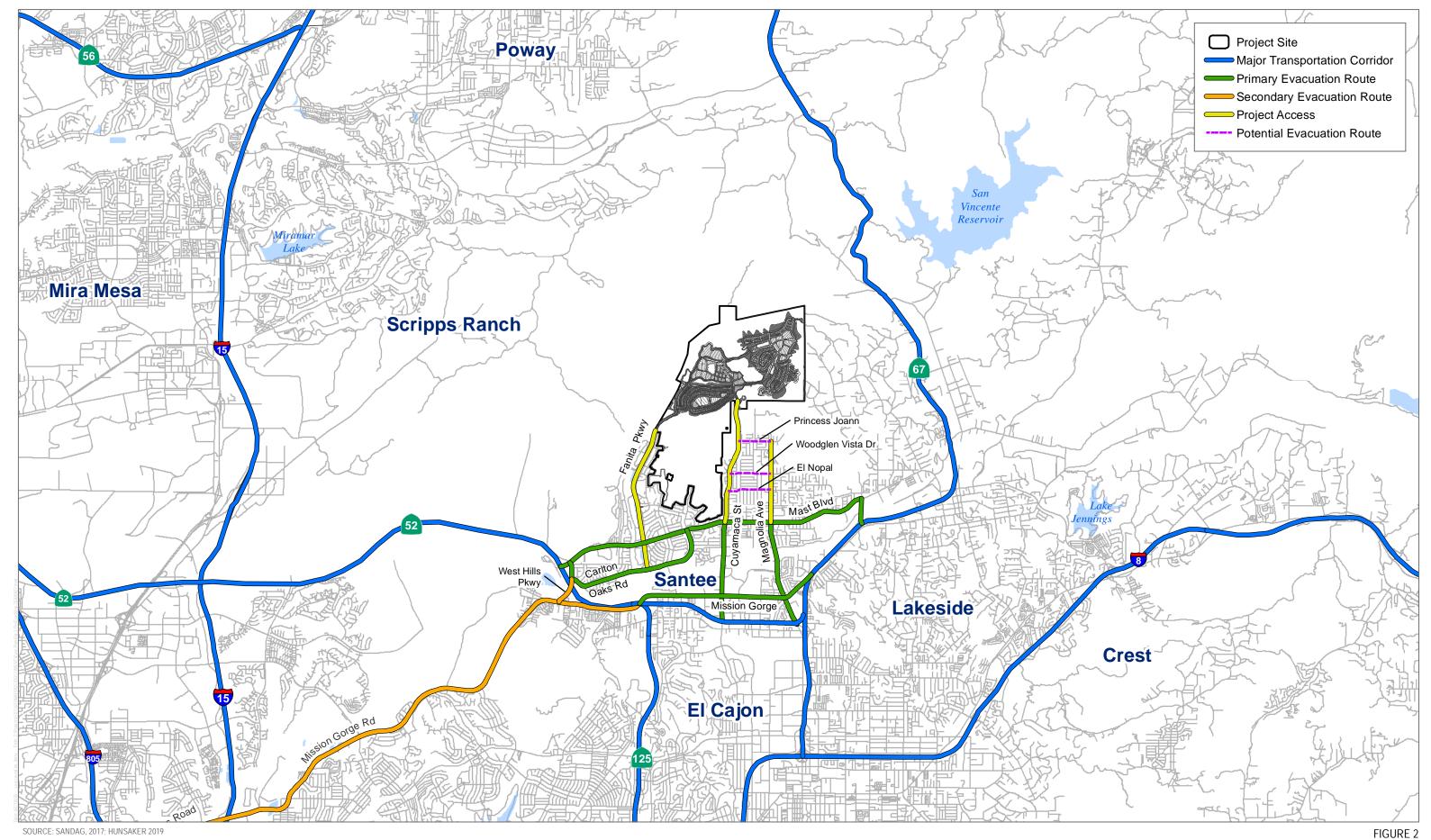


DUDEK 6 0 4,125 8,250 Feet

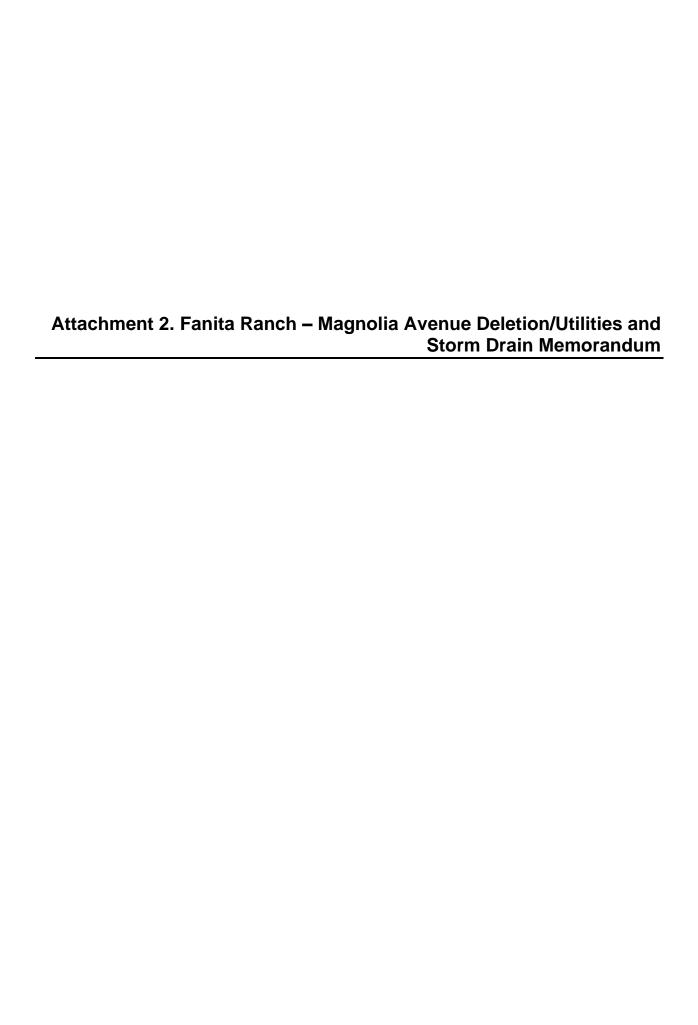
Fire Evacuation Plan

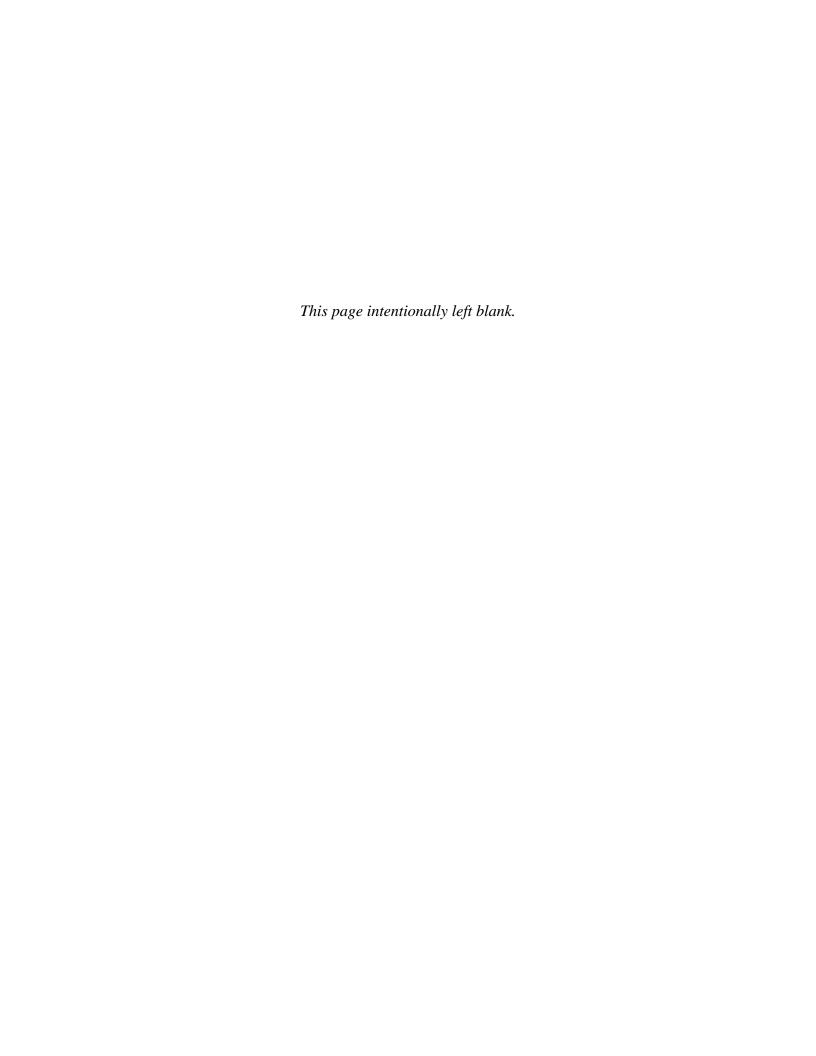
Attachment 2

No Magnolia Extension Evacuation Route Map



DUDEK 6 0 3,500 7,000 Feet







PLANNING ENGINEERING

SURVEYING September 14, 2020

IRVINE SAN DIEGO

RIVERSIDE Mr. Tom Blessent PALM DESERT HomeFed Corporation LOS ANGELES 1903 Wright Place #220 Carlsbad, CA 92008

Dear Tom:

Re: Fanita Ranch- Magnolia Avenue Deletion/Utilities and Storm Drain

We have reviewed a Fanita Ranch Vesting Tentative Map with the deletion of the extension of Magnolia Avenue from the existing terminus to the proposed extension of Cuyamaca Street for any issues related to wet utilities and storm drain. The following is a summary of our findings:

Sewer

The Fanita Ranch Development Sewer Service Study (February 4, 2020) prepared by Michael Baker International does not identify any sewer improvements in the Magnolia Avenue extension. Therefore, elimination of the Magnolia Avenue extension from the VTM will not impact the ability to provide sewer service to the Fanita Ranch project.

Water

The Fanita Ranch Water Service Study (February 4, 2020) prepared by Michael Baker International identifies a 12" water line (880 zone) within the Magnolia Avenue extension. The report concludes that this line is to be used to serve the new hydrants along this street and is not hydraulically necessary to serve the Fanita Ranch project (see report Page 5-1, Item 4). Therefore, elimination of the Magnolia Avenue extension from the VTM will not impact the ability to provide water service to the Fanita Ranch project.

Storm Drain & Water Quality

Basin BF-1-10A is currently proposed on the VTM approximately 1000' east of Cuyamaca Street along the right-of-way for the Magnolia Avenue extension. This DAVE HAMMAR basin provides Water Quality, Hydromodification and CCS mitigation for the RAY MARTIN reach of Cuyamaca Street north of the Magnolia Avenue and south of the water tank, and also for the easterly 1000' reach of the Magnolia Avenue extension. CHUCK CATER

ALISA VIALPANDO DOUG STROUP

9707 Waples Street San Diego, CA 92121 (858) 558-4500 PH (858) 558-1414 FX www.HunsakerSD.com Info@HunsakerSD.com



HomeFed Corporation Fanita Ranch- Magnolia Avenue Deletion/Utilities and Storm Drain September 14, 2020 Page 2

With the deletion of the Magnolia Avenue extension from the VTM, an interim basin will be installed adjacent to and directly east of Cuyamaca Street on property currently identified as APN 378-220-05. The interim basin will be built within the future right-of-way for Magnolia Avenue and will be constructed entirely within the grading footprint analyzed by the Draft Revised Environmental Impact Report for Fanita Ranch. The deletion of the Magnolia Avenue extension reduces the impervious area treated by the original basin by approximately 30%. The bottom area of the interim basin will be reduced accordingly. The interim basin will be removed at such time that Magnolia Avenue is extended, and a new basin will be required in a size and location similar to the basin that was removed from the VTM with the deletion of the Magnolia Avenue extension.

If you have any questions or concerns, please call me to discuss.

Thank you,

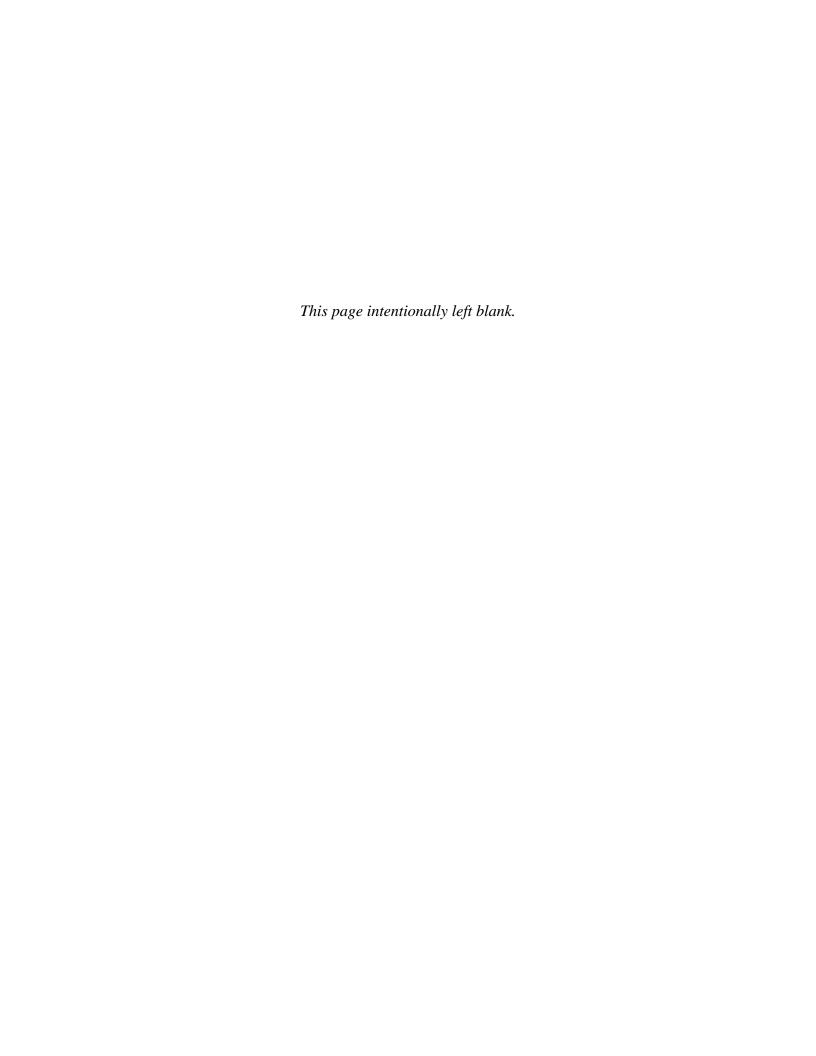
Hunsaker & Associates

San Diego, Inc.

Alisa S. Vialpando, PE

Vice President

Attachment 3. Memorandum to the Air Quality Analysis Report – Removal of Magnolia Extension, Memorandum to the Energy Analysis Report – Removal of Magnolia Extension, Memorandum to the Greenhouse Gas Analysis Report – Removal of Magnolia Extension, and Supplemental Analysis of Emissions and Fuel Use without the Extension of Magnolia Avenue



MEMORANDUM TO THE AIR QUALITY ANALYSIS REPORT-REMOVAL OF MAGNOLIA EXTENSION

FANITA RANCH PROJECT CITY OF SANTEE SAN DIEGO COUNTY, CALIFORNIA

Prepared for:

City of Santee 10601 Magnolia Avenue Santee, California 92071

Prepared by:

LSA Associates, Inc. 1500 Iowa Avenue, Suite 200 Riverside, California 92507 (951) 781-9310

Project No. HRS1601



MEMORANDUM

At the applicant's request, the extension of Magnolia Avenue has been removed as a project feature. The following analysis revises sections of the Air Quality Analysis to reflect this project change. Where no change to the Air Quality Analysis is required, no analysis is included in this memorandum. The following analysis is based on the revised traffic analysis prepared by Linscott Law & Greenspan (2020) to address the removal of Magnolia Avenue extension as a project feature. Removal of the extension as a project feature results in the shift of traffic from Magnolia Avenue to Cuyamaca Street in the near-term. The extension of Magnolia Avenue is a Mobility Element road identified in the City of Santee General Plan. The long-term (Year 2035) scenario assumes buildout of the City's General Plan, including Mobility Element roadways. Therefore, the removal of the Magnolia Avenue extension as a project feature does not result in any changes to the long-term (Year 2035) analyses.

This memorandum to the Air Quality Analysis Report for the Fanita Ranch Project lists the revisions or clarifications required to reflect removal of the Magnolia Avenue extension as a project feature. The only revision necessary was to update the carbon monoxide hotspots analysis due to the change in trip distribution. The other analyses related to criteria pollutant emissions, toxic air contaminants, and odors are not affected by the elimination of the Magnolia extension. The elimination of the Magnolia Avenue extension does not result in any change in proposed land uses and therefore does not result in any change in operation or trip generation. Required construction would be reduced compared to the previous analysis, but elimination of the Magnolia Avenue extension does not affect required construction in the remainder of the project area. The revised traffic analysis notes that the change in trip distribution as a result of elimination of the Magnolia Avenue extension results in a nominal change in project vehicle miles travelled (LLG 2020). Therefore, because land uses generating the same emissions compared to the EIR would occur for both the preferred land use plan with school and land use plan without school, and construction would be slightly reduced, no revision to the Air Quality Analysis is required for these issues. It should be noted that the revisions and clarifications listed in this document related to carbon monoxide hotspots do not change any conclusions provided in the EIR.

REVISIONS TO ANALYSIS

Impacts to Sensitive Receptors

Carbon Monoxide Hot Spots

The Fanita Ranch Project was evaluated based upon the assumption that Fanita Parkway, Cuyamaca Street, and Magnolia Avenue would all provide access to the Fanita Ranch Project site. The interim period scenario (2020 through 2034) has been revised to reflect removal of the Magnolia Avenue extension as a project feature. The revised analysis is based on the updated traffic impact analysis (LLG September 2020) conducted to determine the changes to the Level of Service results without the connection of Magnolia Avenue to Cuyamaca Street. Without the connection of Magnolia Avenue extended to Cuyamaca Street, it is expected that Project trips would instead utilize streets such as Princess Joann Road, Woodglen Vista Drive, El Nopal and Mast Boulevard. The traffic impact analysis also analyzed a proposed condition that would prohibit southbound left turns from

Cuyamaca Street onto Princess Joann Road, Woodglen Vista Drive, and El Nopal. These changes would result in slightly different traffic flows through the study intersections, which in turn, may change localized concentrations of carbon monoxide in the immediate vicinity of these intersections. To assess this interim condition, a revised carbon dioxide hot spot analysis was completed to determine if these changes would result in any air quality impacts. The results on this analysis are provided in Table 1.

Table 1: Estimated Carbon Monoxide Concentrations

		1-Hou	r CO Concentrat	ion (ppm) ¹	<u>8-Hour</u>	CO Concentra	tion (ppm) ¹	
<u>Intersection</u>	<u>Peak</u> Hour	Interim Period Without Project	Interim Period With Project, With School (Left Turns Allowed)	Interim Period With Project, With School (Restricted Left Turns)	Interim Period Without Project	Interim Period With Project, With School (Left Turns Allowed)	Interim Period With Project With School (Restricted Left Turns)	<u>Impact?</u>
Princess Joann Road and	<u>AM</u>	<u>1.7</u>	<u>1.9</u>	<u>1.9</u>	<u>1.2</u>	<u>1.3</u>	<u>1.2</u>	<u>No</u>
<u>Cuyamaca Street</u>	<u>PM</u>	<u>1.7</u>	<u>1.9</u>	<u>1.9</u>	<u>1.2</u>	<u>1.3</u>	<u>1.3</u>	<u>No</u>
Ganley Road and Fanita	<u>AM</u>	<u>1.7</u>	<u>1.8</u>	<u>1.8</u>	<u>1.2</u>	<u>1.3</u>	<u>1.3</u>	<u>No</u>
<u>Parkway</u>	<u>PM</u>	<u>1.7</u>	<u>1.9</u>	<u>1.8</u>	<u>1.2</u>	<u>1.4</u>	<u>1.4</u>	<u>No</u>
Woodglen Vista Drive and	<u>AM</u>	<u>1.7</u>	2.0	2.0	<u>1.2</u>	<u>1.4</u>	<u>1.4</u>	<u>No</u>
<u>Cuyamaca Street</u>	<u>PM</u>	<u>1.8</u>	2.0	2.0	<u>1.3</u>	<u>1.4</u>	<u>1.4</u>	<u>No</u>
El Nopal and Cuyamaca	<u>AM</u>	<u>1.9</u>	2.0	2.1	<u>1.4</u>	<u>1.5</u>	1.4	<u>No</u>
<u>Street</u>	<u>PM</u>	<u>1.9</u>	2.1	<u>2.1</u>	<u>1.4</u>	<u>1.5</u>	<u>1.5</u>	<u>No</u>
El Nopal and Magnolia	<u>AM</u>	<u>1.9</u>	2.0	2.0	<u>1.4</u>	<u>1.5</u>	1.4	<u>No</u>
<u>Avenue</u>	<u>PM</u>	<u>1.9</u>	<u>2.0</u>	<u>2.0</u>	<u>1.4</u>	<u>1.5</u>	<u>1.5</u>	<u>No</u>
El Nopal and Los	<u>AM</u>	<u>1.8</u>	<u>1.8</u>	<u>1.8</u>	<u>1.3</u>	<u>1.3</u>	<u>1.3</u>	<u>No</u>
Ranchitos Road	<u>PM</u>	<u>1.8</u>	<u>1.8</u>	<u>1.8</u>	<u>1.3</u>	<u>1.3</u>	<u>1.3</u>	<u>No</u>
Lake Canyon Road and	<u>AM</u>	<u>1.7</u>	<u>1.9</u>	<u>1.9</u>	<u>1.2</u>	<u>1.4</u>	<u>1.3</u>	<u>No</u>
<u>Fanita Parkway</u>	<u>PM</u>	<u>1.8</u>	<u>1.9</u>	<u>1.9</u>	<u>1.3</u>	<u>1.4</u>	<u>1.4</u>	<u>No</u>
Beck Drive and Cuyamaca	<u>AM</u>	<u>1.9</u>	2.1	<u>2.1</u>	<u>1.4</u>	<u>1.5</u>	<u>1.5</u>	<u>No</u>
<u>Street</u>	<u>PM</u>	<u>1.9</u>	2.0	<u>2.0</u>	<u>1.4</u>	<u>1.5</u>	<u>1.5</u>	<u>No</u>
Mast Boulevard and SR-52	<u>AM</u>	<u>2.6</u>	<u>2.7</u>	<u>2.7</u>	<u>1.9</u>	<u>1.9</u>	<u>1.9</u>	<u>No</u>
WB Ramps	<u>PM</u>	<u>2.1</u>	<u>2.2</u>	2.2	<u>1.5</u>	<u>1.6</u>	<u>1.6</u>	<u>No</u>
Mast Boulevard and West	<u>AM</u>	<u>2.2</u>	2.3	2.2	<u>1.6</u>	<u>1.7</u>	<u>1.6</u>	<u>No</u>
<u>Hills Parkway</u>	<u>PM</u>	<u>2.3</u>	<u>2.4</u>	2.4	<u>1.7</u>	<u>1.7</u>	<u>1.7</u>	<u>No</u>
Mast Boulevard and	<u>AM</u>	<u>2.1</u>	2.3	2.2	<u>1.5</u>	<u>1.7</u>	<u>1.6</u>	<u>No</u>
<u>Fanita Parkway</u>	<u>PM</u>	2.0	<u>2.1</u>	<u>2.1</u>	<u>1.5</u>	<u>1.5</u>	<u>1.6</u>	<u>No</u>
Mast Boulevard and	<u>AM</u>	2.0	<u>2.1</u>	2.2	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>No</u>
<u>Cuvamaca Street</u>	<u>PM</u>	<u>2.2</u>	<u>2.2</u>	2.3	<u>1.6</u>	<u>1.6</u>	<u>1.7</u>	<u>No</u>
Riverford Road and SR-67	<u>AM</u>	<u>2.1</u>	<u>2.1</u>	2.1	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>No</u>
SB Ramps	<u>PM</u>	<u>2.1</u>	<u>2.1</u>	<u>2.1</u>	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>No</u>

Table 1: Estimated Carbon Monoxide Concentrations

	1-Hour CO Concentration (ppm) ¹ 8-Hour CO Concentration (ppm) ¹												
		1-Houi	CO Concentrat	ion (ppm)±	<u>8-Hour</u>	I	tion (ppm)+						
		Intorim	Interim Period With	Interim Period With	Intorim	Interim Period With Project, With	Interim Period With						
		<u>Interim</u> Period	<u>Project,</u> With School	<u>Project,</u> With School	<u>Interim</u> Period	School	<u>Project</u> With School						
	Peak	Without	(Left Turns	(Restricted	Without	(Left Turns	(Restricted						
Intersection	Hour	Project	Allowed)	Left Turns)	Project	Allowed)	<u>Left Turns)</u>	Impact?					
Riverford Road and	<u>AM</u>	<u>2.1</u>	<u>2.1</u>	<u>2.1</u>	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>No</u>					
Woodside Avenue	<u>PM</u>	<u>2.0</u>	<u>2.1</u>	<u>2.1</u>	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>No</u>					
Mission Gorge Road and	<u>AM</u>	<u>2.3</u>	<u>2.4</u>	<u>2.3</u>	<u>1.7</u>	<u>1.7</u>	<u>1.7</u>	<u>No</u>					
West Hills Parkway	<u>PM</u>	2.0	<u>2.0</u>	<u>2.0</u>	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>No</u>					
Mission Gorge Road and	<u>AM</u>	<u>2.3</u>	<u>2.5</u>	<u>2.5</u>	<u>1.7</u>	<u>1.8</u>	<u>1.8</u>	<u>No</u>					
<u>Carlton Hills Boulevard</u>	<u>PM</u>	<u>2.2</u>	<u>2.3</u>	<u>2.3</u>	<u>1.6</u>	<u>1.7</u>	<u>1.7</u>	<u>No</u>					
Mission Gorge Road and	<u>AM</u>	<u>1.9</u>	<u>1.9</u>	<u>1.9</u>	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>	<u>No</u>					
<u>Town Center Parkway</u>	<u>PM</u>	<u>2.1</u>	<u>2.2</u>	<u>2.2</u>	<u>1.5</u>	<u>1.6</u>	<u>1.6</u>	<u>No</u>					
Mission Gorge Road and	<u>AM</u>	<u>2.1</u>	<u>2.1</u>	<u>2.1</u>	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>No</u>					
<u>Cuyamaca Street</u>	<u>PM</u>	<u>2.3</u>	<u>2.4</u>	<u>2.4</u>	<u>1.7</u>	<u>1.7</u>	<u>1.7</u>	<u>No</u>					
Mission Gorge Road and	<u>AM</u>	<u>1.8</u>	<u>1.8</u>	<u>1.8</u>	<u>1.3</u>	<u>1.3</u>	<u>1.3</u>	<u>No</u>					
Cottonwood Avenue	<u>PM</u>	<u>2.0</u>	<u>2.0</u>	2.0	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>No</u>					
Mission Gorge Road and	<u>AM</u>	<u>2.3</u>	<u>2.3</u>	2.3	<u>1.7</u>	<u>1.7</u>	<u>1.7</u>	<u>No</u>					
Magnolia Avenue	<u>PM</u>	<u>2.4</u>	<u>2.4</u>	<u>2.4</u>	<u>1.7</u>	<u>1.7</u>	<u>1.7</u>	<u>No</u>					
Woodside Avenue N and	<u>AM</u>	<u>1.9</u>	<u>1.9</u>	<u>1.9</u>	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>	<u>No</u>					
SR-67 SB Off-Ramp	<u>PM</u>	<u>2.1</u>	<u>2.1</u>	2.1	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>No</u>					
Fanita Drive and SR-52	<u>AM</u>	<u>1.8</u>	<u>1.8</u>	<u>1.8</u>	<u>1.3</u>	<u>1.3</u>	<u>1.3</u>	<u>No</u>					
WB Off-Ramp	<u>PM</u>	<u>1.8</u>	<u>1.8</u>	<u>1.8</u>	<u>1.3</u>	<u>1.3</u>	<u>1.3</u>	<u>No</u>					
Buena Vista Avenue and	<u>AM</u>	<u>2.0</u>	<u>2.0</u>	<u>2.0</u>	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>No</u>					
<u>Cuyamaca Street</u>	<u>PM</u>	<u>2.2</u>	<u>2.2</u>	<u>2.3</u>	<u>1.6</u>	<u>1.6</u>	<u>1.7</u>	<u>No</u>					
Prospect Avenue and	<u>AM</u>	<u>1.9</u>	<u>1.9</u>	<u>1.9</u>	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>	<u>No</u>					
<u>Fanita Drive</u>	<u>PM</u>	<u>1.8</u>	<u>1.8</u>	<u>1.8</u>	<u>1.3</u>	1.3	1.3	<u>No</u>					

 $Source: \ CALINE 4 \ using \ EMFAC 2017 \ emission \ factors. \ See \ the \ Appendix \ D \ for \ model \ output \ sheets.$

Note: ¹ Modeling assumptions: 1-hour CO concentrations were calculated using the worst-case wind angle scenario in the CALINE4 model. CO emission factors were generated using the EMFAC2017 model, using the CO emission factor associated with Year 2035 for the total vehicle mix during conditions in January at a temperature of 40 degrees Fahrenheit. An ambient 1-hour CO concentration of 1.5 ppm and an ambient 8-hour CO concentration of 1.1 ppm were used to reflect ambient conditions. The 8-hour CO concentration is based on a persistence factor of 0.7 for urban uses (Caltrans 1997).

SR-67 = State Route 67 WB = westbound
SR-52 = State Route 52 ppm = parts per million
SB = southbound CO = carbon monoxide

As shown in Table 1, the removal of the Magnolia Avenue extension in the interim condition would result in less than significant impacts related to carbon monoxide concentrations. Appendix 1 provides additional details on the carbon monoxide hot spot analysis. Note that the Fanita Ranch

Project Land Use Plan Without School would increase traffic volumes by approximately 0.6 percent¹. This nominal level of change will not increase carbon monoxide concentrations at the intersections evaluated above. Therefore, the Fanita Ranch Project Land Use Plan Without School would also result in less than significant impacts related to carbon monoxide concentrations.

The above changes to the interim condition (2020 to 2034) do not result in changes to the air quality analysis related to construction because no additional construction is proposed, or long-term operational emissions at buildout in 2035 because the Magnolia Avenue extension is assumed to be completed as part of General Plan buildout in the long term. Therefore, no additional analysis is needed.

References

Linscott Law and Greenspan, Engineers. 2020. Fanita Ranch – No Magnolia Avenue Extension Analysis, Santee, California. September 4.

C:\Users\MHe ndrix\Do cu ments\Fanita\RTC d ocs\Revised Memoran dum Air Quality Analysis_September2020_comments_MH2.do ox (09/15/20)

¹ LLG September 2020. Fanita Ranch No Magnolia Avenue Extension.



APPENDIX 1

CONNECTION AND RESTRICTED LEFT TURNS

LSA Associates, Inc.	CALII	NET MIU	dening	Data - 1	-X1VI - VV	Ith I I O		Ten Sen	501 <i>)</i> ; **	i i i i i i i i i i i i i i i i i i i	Viagnon	a Avc.
STREETS			VPH	MPH	%RT	EF			VPH	MPH	%RT	EF
Princess Joann Rd	NID	Approach	362	12.4	40	1.69	ap.	Approach	700	10.6	40	1.90
& Cuyamaca St	NB	Depart	362	25.6	N/A	1.69	SB	Depart	700	21	N/A	1.90
		Left Turn	0					Left Turn	163	5.1	80	2.27
	EB	Approach Depart	0	21.5	 N/A	1.77	WB	Approach Depart	0	7.4	70	2.12
	LD	Left Turn	0				""	Left Turn	84	1.7	80	2.28
		Approach	362	28	N/A	0.69	apri	Approach	863	28	N/A	0.69
	NBX	Depart	446	28	N/A	0.69	SBX	Depart	700	28	N/A	0.69
	EBX	Approach	0				WBX	Approach	84	28	N/A	0.69
	LDA	Depart	163	28	N/A	0.69	WDA	Depart	0			
Ganley Rd & Fanita		Approach	455	11.6	40	1.77		Approach	762	7.2	40	2.14
Pkwy	NB	Depart	402	24.8	N/A	0.78	SB	Depart	890	17.8	N/A	1.84
		Left Turn	0					Left Turn	5	5.1	80	2.27
	EB	Approach Depart	0 63	21.5	N/A	1.77	WB	Approach Depart	5 0	7.4	70	2.12
	LD	Left Turn	0				""	Left Turn	128	5.1	80	2.27
		Approach	455	28	N/A	0.69		Approach	767	28	N/A	0.69
	NBX	Depart	402	28	N/A	0.69	SBX	Depart	890	28	N/A	0.69
	EDV	Approach	0	-		-	WDV	Approach	133	28	N/A	0.69
	EBX	Depart	63	28	N/A	0.69	WBX	Depart	0			
Woodglen Vista Dr		Approach	397	9	55	2.02		Approach	335	3	55	2.28
& Cuyamaca St	NB	Depart	372	23.6	N/A	1.14	SB	Depart	456	6.5	N/A	2.18
		Left Turn	3	5.1	80	2.27		Left Turn	46	5.1	80	2.27
	PP.	Approach	20	11.1	55	1.83	WE	Approach	97	11.1	55	1.83
	EB	Depart Left Turn	85	24.4	N/A	0.90	WB	Depart Left Turn	5	24.4	N/A	0.90
		Left Turn	0 415		 N/Δ	0.60		Left Turn	111 380	1.7	80 N/A	2.28
	NBX	Approach Depart	415 345	28 28	N/A N/A	0.69	SBX	Approach Depart	380 836	28 28	N/A N/A	0.69 0.69
	_	Approach	20	28	N/A N/A	0.69		Approach	208	28	N/A N/A	0.69
	EBX	Depart	85	28	N/A	0.69	WBX	Depart	7	28	N/A	0.69
El Nopa; &		Approach	406	9	55	2.02		Approach	415	3	55	2.28
Cuyamaca St.	NB	Depart	358	23.6	N/A	1.14	SB	Depart	415	6.5	N/A	2.18
-		Left Turn	5	5.1	80	2.27		Left Turn	45	5.1	80	2.27
		Approach	8	11.1	55	1.83		Approach	95	11.1	55	1.83
	EB	Depart	1	24.4	N/A	0.90	WB	Depart	8	24.4	N/A	0.90
		Left Turn	0					Left Turn	102	1.7	80	2.28
	NBX	Approach	411	28	N/A	0.69	SBX	Approach	460	28	N/A	0.69
		Depart	445	28	N/A	0.69		Depart	524	28	N/A	0.69
	EBX	Approach Depart	8 94	28 28	N/A N/A	0.69	WBX	Approach Depart	197 13	28 28	N/A N/A	0.69 0.69
El Nopal &		Approach	421	9	55	2.02		Approach	393	1	55	2.28
Magnolia Ave	NB	Depart	356	23	N/A	1.32	SB	Depart	384	6.5	N/A	2.18
· ·		Left Turn	51	5.1	80	2.27	-	Left Turn	100	5.1	80	2.27
		Approach	241	11.8	55	1.75		Approach	346	11.8	55	1.75
	EB	Depart	145	27.6	N/A	0.69	WB	Depart	193	27.6	N/A	0.69
		Left Turn	46	5.1	80	2.27		Left Turn	146	1.7	80	2.28
	NBX	Approach	472	28	N/A	0.69	SBX	Approach	493	28	N/A	0.69
		Depart	555	28	N/A	0.69		Depart	628	28	N/A	0.69
	EBX	Approach	287	31	N/A	0.65	WBX	Approach	492	31	N/A	0.65
El Nopal & Los		Depart Approach	301 250	31 6.4	N/A 70	0.65		Depart Approach	146 0	31	N/A	0.65
Ranchitos Rd	NB	Depart	0			2.19	SB	Depart	210	20	N/A	2.21
ranemos ra	1.2	Left Turn	15	5.1	80	2.27	52	Left Turn	0			
		Approach	429	11.6	40	1.77		Approach	315	12.4	40	1.68
	EB	Depart	659	23	N/A	1.32	WB	Depart	330	25.2	N/A	0.72
		Left Turn	0					Left Turn	190	5.1	80	2.27
	NBX	Approach	265	28	N/A	0.69	SBX	Approach	0		-	1
	NDA	Depart	0				SDA	Depart	210	28	N/A	0.69
	EBX	Approach	429	28	N/A	0.69	WBX	Approach	505	28	N/A	0.69
T. I. C		Depart	659	28	N/A	0.69		Depart	330	28	N/A	0.69
Lake Canyon Rd &	MD	Approach	500	11.6	40	1.77	CD	Approach	825	4.8	40	2.28
Fanita Pkwy	NB	Depart Left Turn	463	24.8	N/A 	0.78	SB	Depart Left Turn	915	13.2	N/A	1.58
		Left Turn Approach	0					Left Turn Approach	59 38	5.1 7.4	80 70	2.27 2.12
	EB	Depart	134	21.5	N/A	1.77	WB	Depart	0			Z. 1Z
	LD	Left Turn	0				2	Left Turn	90	5.1	80	2.27
	NID.	Approach	500	28	N/A	0.69	CDT	Approach	884	28	N/A	0.69
	NBX	Depart	463	28	N/A	0.69	SBX	Depart	915	28	N/A	0.69
	EBX	Approach	0			-	WBX	Approach	128	28	N/A	0.69
	EDA	Depart	134	28	N/A	0.69	WDA	Depart	0			
Beck Dr &		Approach	452	9	55	2.02		Approach	1,066	1	55	2.28
Cuyamaca St	NB	Depart	420	23	N/A	1.32	SB	Depart	1,066	6.5	N/A	2.18
		Left Turn	1	5.1	80	2.27		Left Turn	3	5.1	80	2.27
	PP.	Approach	11	11.8	55	1.75	WE	Approach	4	11.8	55	1.75
	EB	Depart Left Turn	0				WB	Depart Left Turn	2	27.6	N/A	0.69
		Left Turn	0 453	 28	N/A	0.69		Left Turn	57 1.066	5.3	80 N/Δ	2.26 0.69
	NBX	Approach Depart	453	28 28	N/A N/A	0.69	SBX	Approach Depart	1,066 1,165	28 28	N/A N/A	0.69
		Approach	11	31	N/A N/A	0.69		Approach	61	31	N/A	0.65
,	EBX	Depart	0			0.03	WBX	Depart	3	31	N/A	0.65
Mast Blvd & SR-		Approach	75	7.7	70	2.10		Approach	0			
52 WB Ramps	NB	Depart	2,932	0.9	N/A	2.28	SB	Depart	0			
-		-					•	-			*	

INTERSECTING STREETS			VPH	MPH	%RT	EF			VPH	MPH	%RT	EF
		Left Turn	10	5.3	80	2.26		Left Turn	0			
		Approach	578	13.9	40	1.50		Approach	3,202	2.7	40	2.28
	EB	Depart	653	28.6	N/A	0.68	WB	Depart	300	29.1	N/A	0.67
		Left Turn	20	5.3	80	2.26		Left Turn	0			
	NBX	Approach Depart	85 2,932	31 31	N/A N/A	0.65 0.65	SBX	Approach Depart	0			
		Approach	598	31	N/A	0.65		Approach	3,202	31	N/A	0.65
	EBX	Depart	653	31	N/A	0.65	WBX	Depart	300	31	N/A	0.65
Mast Blvd & West		Approach	475	1.7	70	2.28		Approach	110	7.7	70	2.10
Hills Pkwy	NB	Depart	155	23.9	N/A	1.05	SB	Depart	323	18	N/A	1.88
		Left Turn	1,200	0.1	80	2.28		Left Turn	10	5.3	80	2.26
		Approach	533	13.9	40	1.50		Approach	1,922	2.7	40	2.28
	EB	Depart	893	28.1	N/A	0.68	WB	Depart	3,202	14.1	N/A	1.48
		Left Turn	120	5.3	80	2.26		Left Turn	203	5.3	80	2.26
	NBX	Approach Depart	1,675 155	31 31	N/A N/A	0.65 0.65	SBX	Approach Depart	120 323	31 31	N/A N/A	0.65 0.65
		Approach	653	31	N/A	0.65		Approach	2,125	31	N/A	0.65
	EBX	Depart	893	31	N/A	0.65	WBX	Depart	3,202	31	N/A	0.65
Mast Blvd &		Approach	196	7.7	70	2.10		Approach	843	0.1	70	2.28
Fanita Pkwy	NB	Depart	546	5.1	N/A	2.27	SB	Depart	573	5.1	N/A	2.27
		Left Turn	70	5.3	80	2.26		Left Turn	76	5.3	80	2.26
		Approach	755	12.4	40	1.68		Approach	1,612	4.8	40	2.28
	EB	Depart	701	25.2	N/A	0.72	WB	Depart	2,163	13.2	N/A	1.58
		Left Turn	311	0.5	80	2.28		Left Turn	120	5.1	80	2.27
	NBX	Approach	266	31	N/A	0.65	SBX	Approach	919 573	31	N/A	0.65
		Depart Approach	546 1,066	31 28	N/A N/A	0.65 0.69		Depart Approach	573 1,732	31 28	N/A N/A	0.65 0.69
	EBX	Depart	701	28	N/A N/A	0.69	WBX	Depart	2,163	28	N/A N/A	0.69
Mast Blvd &		Approach	673	11	55	1.84		Approach	557	10.3	55	1.92
Cuyamaca St	NB	Depart	282	27.1	N/A	0.70	SB	Depart	382	20.4	N/A	2.09
,		Left Turn	258	5.3	80	2.26		Left Turn	39	0.1	80	2.28
		Approach	558	10.3	55	1.92		Approach	385	9.3	55	2.00
	EB	Depart	339	24.1	N/A	0.99	WB	Depart	317	24.1	N/A	0.99
		Left Turn	157	5.3	80	2.26		Left Turn	318	5.3	80	2.26
	NBX	Approach	883	31	N/A	0.65	SBX	Approach	661	31	N/A	0.65
		Depart	507	31	N/A	0.65		Depart	919	31	N/A	0.65
	EBX	Approach Depart	715 568	31 31	N/A N/A	0.65 0.65	WBX	Approach Depart	703 1,034	31 31	N/A N/A	0.65 0.65
Riverford Rd & SR-		Approach	634	9.2	40	2.01		Approach	1,034	2.7	40	2.28
67 SB Ramps	NB	Depart	842	17.8	N/A	1.84	SB	Depart	439	24.8	N/A	0.78
		Left Turn	460	0.2	80	2.28		Left Turn	0			
		Approach	0					Approach	208	6.6	70	2.18
	EB	Depart	0	-			WB	Depart	1,130	0.9	N/A	2.28
		Left Turn	0					Left Turn	20	5.3	80	2.26
	NBX	Approach	1,094	28	N/A	0.69	SBX	Approach	1,089	28	N/A	0.69
		Depart	842	28	N/A	0.69		Depart	439	28	N/A	0.69
	EBX	Approach Depart	0				WBX	Approach	228 1,130	31 31	N/A N/A	0.65 0.65
Riverford Rd &		Approach	0					Depart Approach	50	7.4	70	2.12
Woodside Ave	NB	Depart	1,094	0.9	N/A	2.28	SB	Depart	0			
		Left Turn	0					Left Turn	339	0.5	80	2.28
		Approach	350	12.4	40	1.68		Approach	704	7.2	40	2.14
	EB	Depart	689	23	N/A	1.32	WB	Depart	180	25.9	N/A	0.71
		Left Turn	520	0.1	80	2.28		Left Turn	0			
	NBX	Approach	0				SBX	Approach	389	28	N/A	0.69
		Depart	1,094	28	N/A	0.69		Depart	704		 NI/A	
	EBX	Approach Depart	870 689	28 28	N/A N/A	0.69 0.69	WBX	Approach Depart	704 180	28 28	N/A N/A	0.69 0.69
Mission Gorge Rd		Approach	140	7.7	70	2.10		Approach	549	0.7	70	2.28
& West Hills Pkwy	NB	Depart	1,653	0.9	N/A	2.10	SB	Depart	220	22.3	N/A	1.53
		Left Turn	40	5.3	80	2.26	1	Left Turn	175	5.3	80	2.26
		Approach	490	13.9	40	1.50		Approach	2,325	2.7	40	2.28
	EB	Depart	665	28.6	N/A	0.68	WB	Depart	1,619	19.5	N/A	2.13
		Left Turn	358	5.3	80	2.26		Left Turn	80	5.3	80	2.26
	NBX	Approach	180	31	N/A	0.65	SBX	Approach	724	31	N/A	0.65
		Depart	1,653	31	N/A	0.65		Depart	220	31	N/A	0.65
	EBX	Approach Depart	848 665	31 31	N/A N/A	0.65 0.65	WBX	Approach Depart	2,405 1,619	31 31	N/A N/A	0.65 0.65
Mission Gorge Rd		Approach	50	7.7	70	2.10		Approach	1,208	0.1	70	2.28
	NB	Depart	1,279	0.9	N/A	2.28	SB	Depart	195	23.9	N/A	1.05
& Carlton Hills		Left Turn	40	5.3	80	2.26	1	Left Turn	441	1.7	80	2.28
& Carlton Hills Blvd		Approach	908	13.1	40	1.59		Approach	1,833	9.6	40	1.98
			1,269	28.1	N/A	0.68	WB	Depart	2,567	19.5	N/A	2.13
	EB	Depart			80	2.28		Left Turn	25	5.3	80	2.26
	EB	Left Turn	805	0.2	-		1	Approach				0.05
	EB NBX	Left Turn Approach	805 90	31	N/A	0.65	SBX		1,649	31	N/A	0.65
		Left Turn Approach Depart	805 90 1,279	31 31	N/A N/A	0.65	SBX	Depart	195	31	N/A	0.65
		Left Turn Approach Depart Approach	805 90 1,279 1,713	31 31 31	N/A N/A N/A	0.65 0.65	SBX	Depart Approach	195 1,858	31 31	N/A N/A	0.65 0.65
Blvd	NBX	Left Turn Approach Depart Approach Depart	805 90 1,279 1,713 1,269	31 31 31 31	N/A N/A N/A N/A	0.65 0.65 0.65		Depart Approach Depart	195 1,858 2,567	31 31 31	N/A N/A N/A	0.65 0.65 0.65
Blvd Mission Gorge Rd	NBX EBX	Left Turn Approach Depart Approach Depart Approach	805 90 1,279 1,713 1,269 185	31 31 31 31 7.7	N/A N/A N/A N/A 70	0.65 0.65 0.65 2.10	WBX	Depart Approach Depart Approach	195 1,858 2,567 410	31 31 31 1.7	N/A N/A N/A 70	0.65 0.65 0.65 2.28
Blvd	NBX	Left Turn Approach Depart Approach Depart	805 90 1,279 1,713 1,269	31 31 31 31	N/A N/A N/A N/A	0.65 0.65 0.65		Depart Approach Depart	195 1,858 2,567	31 31 31	N/A N/A N/A	0.65 0.65 0.65

INTERSECTING			VPH	MPH	%RT	EF			VPH	MPH	%RT	EF
STREETS	EB	Depart	818	25.6	N/A	0.72	WB	Depart	1,429	24.8	N/A	0.78
	LD	Left Turn	300	5.1	80	2.27	","	Left Turn	100	5.1	80	2.27
	NBX	Approach	395	31	N/A	0.65	SBX	Approach	520	31	N/A	0.65
		Depart	560	31	N/A	0.65		Depart	420	31	N/A	0.65
	EBX	Approach Depart	1,163 818	28 28	N/A N/A	0.69 0.69	WBX	Approach Depart	1,149 1,429	28 28	N/A N/A	0.69 0.69
Mission Gorge Rd		Approach	753	4.2	70	2.28		Approach	821	6.6	70	2.18
& Cuyamaca St	NB	Depart	963	10.1	N/A	1.95	SB	Depart	1,144	18	N/A	1.88
		Left Turn	700	0.5	80	2.28		Left Turn	153	5.3	80	2.26
	ED	Approach	768	13.9	40	1.50	WD	Approach	748	13.9	40	1.50
	EB	Depart Left Turn	755 200	29.1 5.3	N/A 80	0.67 2.26	WB	Depart Left Turn	1,479 198	28.1 5.3	N/A 80	0.68 2.26
		Approach	1,453	31	N/A	0.65	anti	Approach	974	31	N/A	0.65
	NBX	Depart	963	31	N/A	0.65	SBX	Depart	1,144	31	N/A	0.65
	EBX	Approach	968	31	N/A	0.65	WBX	Approach	946	31	N/A	0.65
Mississ Cassa D.I		Depart	755	31	N/A	0.65		Depart	1,479	31	N/A	0.65
Mission Gorge Rd & Cottonwood Ave	NB	Approach Depart	190 155	7.7 23.9	70 N/A	2.10 1.05	SB	Approach Depart	45 270	7.7 22.3	70 N/A	2.10 1.53
co cononwood iive	1,2	Left Turn	120	5.3	80	2.26	5.5	Left Turn	50	5.3	80	2.26
		Approach	597	13.7	40	1.52		Approach	1,034	12.4	40	1.68
	EB	Depart	647	25.6	N/A	0.72	WB	Depart	1,129	25.2	N/A	0.72
		Left Turn	35	5.1	80 N/A	2.27		Left Turn	130	5.1	80 N/A	2.27
	NBX	Approach Depart	310 155	31 31	N/A N/A	0.65 0.65	SBX	Approach Depart	95 270	31 31	N/A N/A	0.65 0.65
	EDM	Approach	632	28	N/A	0.69	MDM	Approach	1,164	28	N/A	0.69
	EBX	Depart	647	28	N/A	0.69	WBX	Depart	1,129	28	N/A	0.69
Mission Gorge Rd		Approach	1,261	5.5	55	2.25		Approach	1,571	3.1	55	2.28
& Magnolia Ave	NB	Depart	1,312	20.4	N/A	2.09	SB	Depart	1,857	6.5	N/A	2.18
		Left Turn Approach	270 400	5.3 11.8	80 55	2.26 1.75		Left Turn Approach	343 934	5.3 9.3	80 55	2.26
	EB	Depart	993	25.6	N/A	0.72	WB	Depart	1,224	20.4	N/A	2.09
		Left Turn	177	5.3	80	2.26		Left Turn	430	1.7	80	2.28
	NBX	Approach	1,531	31	N/A	0.65	SBX	Approach	1,914	31	N/A	0.65
		Depart	1,312	31	N/A	0.65		Depart	1,857	31	N/A	0.65
	EBX	Approach Depart	577 993	31 31	N/A N/A	0.65 0.65	WBX	Approach Depart	1,364 1,224	31 31	N/A N/A	0.65 0.65
Woodside Ave N &		Approach	458	11.6	40	1.77		Approach	634	12.4	40	1.68
SR-67 SB Off-	NB	Depart	0				SB	Depart	1,104	24.1	N/A	0.99
Ramp		Left Turn	320	0.5	80	2.28		Left Turn	10	5.1	80	2.27
	ED	Approach	160	7.7	70	2.10	WD	Approach	10	7.7	70	2.10
	EB	Depart Left Turn	478 0	10.1	N/A 	1.95	WB	Depart Left Turn	370 360	18 0.5	N/A 80	1.88 2.28
		Approach	778	28	N/A	0.69		Approach	644	28	N/A	0.69
	NBX	Depart	0				SBX	Depart	1,104	28	N/A	0.69
	EBX	Approach	160	31	N/A	0.65	WBX	Approach	370	31	N/A	0.65
T : D : OD 50		Depart	478	31	N/A	0.65		Depart	370	31	N/A	0.65
Fanita Dr & SR-52 WB Off-Ramp	NB	Approach Depart	644 1,233	13.1 26	40 N/A	1.59 0.71	SB	Approach Depart	804 914	12.3 28.1	40 N/A	1.69 0.68
WB Off Rump	I V.D	Left Turn	0				SB	Left Turn	0			
		Approach	0					Approach	589	0.7	70	2.28
	EB	Depart	0				WB	Depart	0			
		Left Turn	0					Left Turn	110	5.3	80	2.26
	NBX	Approach Depart	644 1,233	31 31	N/A N/A	0.65 0.65	SBX	Approach Depart	804 914	31 31	N/A N/A	0.65 0.65
		Approach	0					Approach	699	31	N/A	0.65
	EBX	Depart	0				WBX	Depart	0			
Buena Vista Ave &		Approach	1,575	10.6	40	1.89		Approach	1,213	11.6	40	1.77
Cuyamaca St	NB	Depart	1,475	24.8	N/A	0.78	SB	Depart	1,408	24.8	N/A	0.78
		Left Turn	55 25	5.1 7.7	80 70	2.27 2.10		Left Turn Approach	70 75	5.1 7.7	80 70	2.27
	EB	Approach Depart	260	22.3	N/A	1.53	WB	Depart	90	23.9	N/A	1.05
		Left Turn	10	5.3	80	2.26		Left Turn	210	1.7	80	2.28
	NBX	Approach	1,630	28	N/A	0.69	SBX	Approach	1,283	28	N/A	0.69
	1,0/1	Depart	1,475	28	N/A	0.69	SDA	Depart	1,408	28	N/A	0.69
	EBX	Approach	35	31	N/A	0.65	WBX	Approach Depart	285	31	N/A	0.65
Prospect Ave &		Depart Approach	260 409	31 11.6	N/A 40	0.65 1.77		Approach	90 278	31 13.7	N/A 40	0.65 1.52
Fanita Dr	NB	Depart	969	13.2	N/A	1.58	SB	Depart	328	25.9	N/A	0.71
		Left Turn	75	5.1	80	2.27		Left Turn	220	1.7	80	2.28
		Approach	210	6.6	70	2.18		Approach	590	0.7	70	2.28
	EB	Depart	445	10.1	N/A	1.95	WB	Depart	355	18	N/A	1.88
		Left Turn Approach	215 484	1.7 28	80 N/A	2.28 0.69		Left Turn Approach	100 498	5.3 28	80 N/A	2.26 0.69
	NBX	Depart	969	28	N/A	0.69	SBX	Depart	328	28	N/A	0.69
	EBX	Approach	425	31	N/A	0.65	WDV	Approach	690	31	N/A	0.65
		Depart	445	31	N/A	0.65	WBX	Depart	355	31	N/A	0.65

INTERSECTING	CITEI	T T T T T T T T T T T T T T T T T T T	VPH	MPH	%RT	EF	Jeer (11	ith Sth	VPH	мен	%RT	a Ave.
STREETS		A 1-						A				
Princess Joann Rd & Cuyamaca St	NB	Approach Depart	718 718	7.2 24.1	40 N/A	2.14 0.99	SB	Approach Depart	361 361	13.1 25.2	40 N/A	1.59 0.72
Cuyamaca Si	ND	Left Turn	0	24.1		0.99	55	Left Turn	84	5.1	80	2.27
		Approach	0					Approach	167	7.4	70	2.12
	EB	Depart	0				WB	Depart	0			
		Left Turn	0					Left Turn	0			
	NBX	Approach	718	28	N/A	0.69	SBX	Approach	445	28	N/A	0.69
		Depart Approach	802 0	28	N/A 	0.69		Depart Approach	361 167	28 28	N/A N/A	0.69 0.69
	EBX	Depart	0				WBX	Depart	0			
Ganley Rd & Fanita		Approach	883	4.8	40	2.28		Approach	394	12.4	40	1.68
Pkwy	NB	Depart	785	21	N/A	1.92	SB	Depart	457	24.8	N/A	0.78
		Left Turn	0					Left Turn	5	5.1	80	2.27
	EB	Approach Depart	0 108	21.5	N/A	1.77	WB	Approach Depart	5 0	7.4	70	2.12
	LD	Left Turn	0				","	Left Turn	63	5.1	80	2.27
	NBX	Approach	883	28	N/A	0.69	SBX	Approach	399	28	N/A	0.69
	NDA	Depart	785	28	N/A	0.69	SDA	Depart	457	28	N/A	0.69
	EBX	Approach	0				WBX	Approach	68	28	N/A	0.69
W 11 W D		Depart	108	28	N/A	0.69		Depart	0			4.07
Woodglen Vista Dr & Cuyamaca St	NB	Approach Depart	907 669	1 14	55 N/A	2.28 1.49	SB	Approach Depart	335 333	9.8 23	55 N/A	1.97 1.32
cc Cuyumaca St	I ND	Left Turn	7	5.1	80	2.27	· SB	Left Turn	45	5.1	80	2.27
		Approach	13	11.1	55	1.83		Approach	97	11.1	55	1.83
	EB	Depart	12	24	N/A	1.02	WB	Depart	2	24.4	N/A	0.90
		Left Turn	0					Left Turn	111	5.1	80	2.27
	NBX	Approach	914	28	N/A	0.69	SBX	Approach	380	28	N/A	0.69
		Depart Approach	764 13	28 28	N/A N/A	0.69 0.69		Depart Approach	451 208	28 28	N/A N/A	0.69 0.69
	EBX	Depart	295	28	N/A	0.69	WBX	Depart	7	28	N/A	0.69
El Nopa; &		Approach	943	1	55	2.28		Approach	415	9	55	2.02
Cuyamaca St.	NB	Depart	834	6.5	N/A	2.18	SB	Depart	415	21.7	N/A	1.71
		Left Turn	13	5.1	80	2.27		Left Turn	45	5.1	80	2.27
	EB	Approach Depart	6 1	11.8 27.6	55 N/A	1.75 0.69	WB	Approach Depart	95 8	11.8 27.6	55 N/A	1.75 0.69
	LD	Left Turn	5	5.3	80	2.26	", ",	Left Turn	102	5.3	80	2.26
	NDV	Approach	956	28	N/A	0.69	CDV	Approach	460	28	N/A	0.69
	NBX	Depart	922	28	N/A	0.69	SBX	Depart	522	28	N/A	0.69
	EBX	Approach	7	31	N/A	0.65	WBX	Approach	197	31	N/A	0.65
F1N: 10		Depart	<u>185</u>	31	N/A	0.65		Depart	<u>110</u>	31	N/A	0.65
El Nopal & Magnolia Ave	NB	Approach Depart	790 586	1 6.5	55 N/A	2.28 2.18	SB	Approach Depart	393 384	9 21.7	55 N/A	2.02 1.71
wagnona rive	I ND	Left Turn	95	5.1	80	2.10	SB	Left Turn	100	5.1	80	2.27
		Approach	241	11.8	55	1.75		Approach	346	11.8	55	1.75
	EB	Depart	145	27.6	N/A	0.69	WB	Depart	193	27.6	N/A	0.69
		Left Turn	6	5.3	80	2.26		Left Turn	146	5.3	80	2.26
	NBX	Approach Depart	885 745	28 28	N/A N/A	0.69	SBX	Approach Depart	493	28 28	N/A N/A	0.69
		Approach	287	31	N/A	0.65		Approach	593 492	31	N/A	0.69 0.65
	EBX	Depart	449	31	N/A	0.65	WBX	Depart	299	31	N/A	0.65
El Nopal & Los		Approach	220	6.4	70	2.19		Approach	0			
Ranchitos Rd	NB	Depart	0				SB	Depart	185	21.5	N/A	1.77
		Left Turn	10	5.1	80	2.27		Left Turn	0			
	EB	Approach Depart	350 555	12.4 24.1	40 N/A	1.68 0.99	WB	Approach Depart	461 471	11.6 24.8	40 N/A	1.77 0.78
	LD	Left Turn	0			0.99	""	Left Turn	170	5.1	80	2.27
	NDV	Approach	230	28	N/A	0.69	CDV	Approach	0			
	NBX	Depart	0			-	SBX	Depart	185	28	N/A	0.69
	EBX	Approach	350	28	N/A	0.69	WBX	Approach	631	28	N/A	0.69
T. 1. C. D. 1.0		Depart	555	28	N/A	0.69		Depart	471	28	N/A	0.69
Lake Canyon Rd & Fanita Pkwy	NB	Approach Depart	963 946	2.7 13.2	40 N/A	2.28 1.58	SB	Approach Depart	457 510	11.6 24.1	40 N/A	1.77 0.99
rainta i kwy	ND	Left Turn	0			1.50	35	Left Turn	36	5.1	80	2.27
		Approach	0			-		Approach	76	7.4	70	2.12
	EB	Depart	129	21.5	N/A	1.77	WB	Depart	0			
		Left Turn	0			-		Left Turn	53	5.1	80	2.27
	NBX	Approach	963	28	N/A	0.69	SBX	Approach	493	28	N/A	0.69
		Depart Approach	946 0	28	N/A 	0.69		Depart Approach	510 129	28 28	N/A N/A	0.69
	EBX	Depart	129	28	N/A	0.69	WBX	Depart	0			
Beck Dr &		Approach	1,033	1	55	2.28		Approach	504	7.6	55	2.11
Cuyamaca St	NB	Depart	968	6.5	N/A	2.18	SB	Depart	501	18.8	N/A	2.01
		Left Turn	65	5.1	80	2.27		Left Turn	2	5.1	80	2.27
	ED	Approach	6	11.8	55	1.75	W.D	Approach	4	11.8	55	1.75
	EB	Depart Left Turn	0				WB	Depart Left Turn	2 57	27.6 5.3	N/A 80	0.69
	-	Approach	1,042	28	N/A	0.69		Approach	506	28	N/A	2.26 0.69
	NBX	Depart	970	28	N/A	0.69	SBX	Depart	564	28	N/A	0.69
	EBX	Approach	6	31	N/A	0.65	WBX	Approach	67	31	N/A	0.65
	EDA	Depart	67	31	N/A	0.65	WBA	Depart	14	31	N/A	0.65
Mast Blvd & SR-52	NID	Approach	645	0.4	70	2.28	GD.	Approach	0			
WB Ramps	NB	Depart	771	1.6	N/A	2.28	SB	Depart	0			

LSA Associates, Inc.	CALI	NE4 Mo	Ŭ			1	jeer (v	itii Stii		l	Т	
STREETS		1 -0 T	VPH	MPH	%RT	EF		I - A T	VPH	MPH	%RT	EF
		Left Turn Approach	0 1,743	4.9	40	2.28		Left Turn Approach	1,096	2.7	40	2.28
	EB	Depart	2,383	14.1	N/A	1.48	WB	Depart	355	28.6	N/A	0.68
		Left Turn	25	5.3	80	2.26		Left Turn	0		-	
	NBX	Approach	645	31	N/A	0.65	SBX	Approach	0			
	11021	Depart	771	31	N/A	0.65	SBA	Depart	0			
	EBX	Approach	1,768	31	N/A N/A	0.65	WBX	Approach Depart	1,096	31	N/A	0.65
Mast Blvd & West		Depart Approach	2,383 554	31 0.7	70	0.65 2.28		Approach	355 120	31 7.7	N/A 70	0.65 2.10
Hills Pkwy	NB	Depart	275	22.3	N/A	1.53	SB	Depart	748	1.6	N/A	2.28
·		Left Turn	280	5.3	80	2.26		Left Turn	75	5.3	80	2.26
		Approach	2,233	2.7	40	2.28		Approach	786	13.1	40	1.59
	EB	Depart	2,297	14.1	N/A	1.48	WB	Depart	1,096	27.2	N/A	0.70
		Left Turn	150 834	5.3 31	80 N/A	2.26		Left Turn	218	5.3	80	2.26
	NBX	Approach Depart	275	31	N/A	0.65 0.65	SBX	Approach Depart	195 748	31 31	N/A N/A	0.65 0.65
	EDV	Approach	2,383	31	N/A	0.65	III/DA/	Approach	1,004	31	N/A	0.65
	EBX	Depart	2,297	31	N/A	0.65	WBX	Depart	1,096	31	N/A	0.65
Mast Blvd & Fanita		Approach	319	4.2	70	2.28		Approach	471	1.7	70	2.28
Pkwy	NB	Depart	1,013	0.9	N/A	2.28	SB	Depart	265	22.3	N/A	1.53
		Left Turn	80	5.3	80	2.26		Left Turn	97	5.3	80	2.26
	EB	Approach Depart	1,189 1,266	10.6 23	40 N/A	1.89 1.32	WB	Approach Depart	621 904	12.4 24.8	40 N/A	1.68 0.78
	ED	Left Turn	631	0.1	80	2.28	WD	Left Turn	40	5.1	80	2.27
	N.D.	Approach	399	31	N/A	0.65	anti	Approach	568	31	N/A	0.65
	NBX	Depart	1,013	31	N/A	0.65	SBX	Depart	265	31	N/A	0.65
	EBX	Approach	1,820	28	N/A	0.69	WBX	Approach	661	28	N/A	0.69
	EDA	Depart	1,266	28	N/A	0.69	WDA	Depart	904	28	N/A	0.69
Mast Blvd &		Approach	1,094	7.9	55	2.09		Approach	572	10.3	55	1.92
Cuyamaca St	NB	Depart	656	20.4	N/A	2.09	SB	Depart	382	24.1	N/A	0.99
		Left Turn	275	5.3	80	2.26		Left Turn	39	5.3	80	2.26
	EB	Approach Depart	958 685	5.5 14.8	55 N/A	2.25 1.40	WB	Approach Depart	365 317	11 25.6	55 N/A	1.84 0.72
	LD	Left Turn	334	0.1	80	2.28	""	Left Turn	318	5.3	80	2.26
	MDM	Approach	1,352	31	N/A	0.65	CDV	Approach	611	31	N/A	0.65
	NBX	Depart	1,058	31	N/A	0.65	SBX	Depart	1,001	31	N/A	0.65
	EBX	Approach	1,292	31	N/A	0.65	WBX	Approach	703	31	N/A	0.65
	LDA	Depart	1,162	31	N/A	0.65	11 11 11	Depart	765	31	N/A	0.65
Riverford Rd & SR-	N.ID	Approach	866	4.8	40	2.28	an.	Approach	1,102	2.7	40	2.28
67 SB Ramps	NB	Depart	1,010	13.2	N/A	1.58	SB	Depart	322	25.2	N/A	0.72
		Left Turn Approach	300	1.7	80	2.28		Left Turn Approach	0 144	7.7	70	2.10
	EB	Depart	0			-	WB	Depart	1,100	0.9	N/A	2.28
		Left Turn	0					Left Turn	20	5.3	80	2.26
	NBX	Approach	1,166	28	N/A	0.69	SBX	Approach	1,102	28	N/A	0.69
	NDA	Depart	1,010	28	N/A	0.69	SDA	Depart	322	28	N/A	0.69
	EBX	Approach	0				WBX	Approach	164	31	N/A	0.65
n: 0 1010		Depart	0					Depart	1,100	31	N/A	0.65
Riverford Rd & Woodside Ave	NB	Approach	0		 NI/A		SB	Approach Depart	40 0	7.4	70	2.12
woodside Ave	ND	Depart Left Turn	1,106 0	0.9	N/A 	2.28	30	Left Turn	237	1.7	80	2.28
		Approach	740	7.2	40	2.14		Approach	486	11.6	40	1.77
	EB	Depart	977	13.2	N/A	1.58	WB	Depart	150	25.9	N/A	0.71
		Left Turn	730	0	80	2.28		Left Turn	0			
	NBX	Approach	0				SBX	Approach	277	28	N/A	0.69
	TIDA.	Depart	1,106	28	N/A	0.69	SDA	Depart	0			
	EBX	Approach Depart	1,470	28	N/A	0.69	WBX	Approach	486	28	N/A	0.69
Mission Gorge Rd &		Approach	977 100	28 7.7	N/A 70	0.69 2.10		Depart Approach	150 465	28 1.7	N/A 70	0.69 2.28
West Hills Pkwy	NB	Depart	951	0.9	N/A	2.10	SB	Depart	230	22.3	N/A	1.53
		Left Turn	30	5.3	80	2.26		Left Turn	260	5.3	80	2.26
		Approach	965	12.3	40	1.69		Approach	765	13.1	40	1.59
	EB	Depart	1,200	27.2	N/A	0.70	WB	Depart	920	28.1	N/A	0.68
		Left Turn	631	0.5	80	2.28		Left Turn	85	5.3	80	2.26
	NBX	Approach	130	31	N/A	0.65	SBX	Approach	725	31	N/A	0.65
		Depart	951	31	N/A	0.65		Depart	230	31	N/A	0.65
	EBX	Approach Depart	1,596 1,200	31 31	N/A N/A	0.65 0.65	WBX	Approach Depart	850 920	31 31	N/A N/A	0.65 0.65
Mission Gorge Rd &		Approach	1,200	7.7	70	2.10		Approach	792	0.2	70	2.28
Carlton Hills Blvd	NB	Depart	1,659	0.9	N/A	2.10	SB	Depart	440	10.1	N/A	1.95
		Left Turn	60	5.3	80	2.26		Left Turn	442	1.7	80	2.28
		Approach	1,510	11.1	40	1.83		Approach	1,666	11.1	40	1.83
	EB	Depart	1,827	26	N/A	0.71	WB	Depart	1,741	27.2	N/A	0.70
		Left Turn	932	0.2	80	2.28		Left Turn	150	5.3	80	2.26
	NBX	Approach	175	31	N/A	0.65	SBX	Approach	1,234	31	N/A	0.65
		Depart	1,659	31	N/A	0.65		Depart	440	31	N/A	0.65
	EBX	Approach Depart	2,442 1,827	31 31	N/A N/A	0.65 0.65	WBX	Approach Depart	1,816 1,741	31 31	N/A N/A	0.65 0.65
Mission Gorge Rd &		Approach	490	1.7	70	2.28		Approach	730	0.2	70	2.28
Town Center Pkwy	NB	Depart	1,285	0.9	N/A	2.28	SB	Depart	605	3.2	N/A	2.28
ĺ		Left Turn	390	5.3	80	2.26		Left Turn	340	5.3	80	2.26
		Approach	1,391	11.6	40	1.77		Approach	1,090	12.4	40	1.68
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LSA Associates, Inc. CALINE4 Modeling Data - PM - With Project (With School) Without Magnolia Ave. (

INTERSECTING STREETS			VPH	MPH	%RT	EF			VPH	МРН	%RT	EF
SIREETS	EB	Depart	1,711	24.1	N/A	0.99	WB	Depart	1,645	24.1	N/A	0.99
		Left Turn	620	0.5	80	2.28		Left Turn	195	5.1	80	2.27
	NBX	Approach	880	31	N/A	0.65	SBX	Approach	1,070	31	N/A	0.65
		Depart	1,285	31	N/A	0.65		Depart	605	31	N/A	0.65
	EBX	Approach	2,011	28	N/A	0.69	WBX	Approach	1,285	28	N/A	0.69
Mission Gorge Rd &		Depart Approach	1,711 1,436	28 0.2	N/A 70	0.69 2.28		Depart Approach	1,645 1,140	28 4.2	N/A 70	0.69 2.28
Cuyamaca St	NB	Depart	1,714	1.2	N/A	2.28	SB	Depart	1,544	5.1	N/A	2.27
Cuyamaca St	NB	Left Turn	735	0.5	80	2.28	SB	Left Turn	348	5.3	80	2.26
		Approach	1,083	13.1	40	1.59		Approach	761	13.9	40	1.50
	EB	Depart	1,437	28.1	N/A	0.68	WB	Depart	1,514	27.2	N/A	0.70
		Left Turn	413	1.7	80	2.28		Left Turn	293	5.3	80	2.26
	NBX	Approach	2,171	31	N/A	0.65	SBX	Approach	1,488	31	N/A	0.65
		Depart	1,714	31	N/A	0.65	55.1	Depart	1,544	31	N/A	0.65
	EBX	Approach	1,496	31	N/A	0.65	WBX	Approach	1,054	31	N/A	0.65
Mississ Cassa D.I. 6		Depart	1,437	31	N/A	0.65		Depart	1,514	31	N/A	0.65
Mission Gorge Rd & Cottonwood Ave	NB	Approach Depart	290 260	6.6 22.3	70 N/A	2.18 1.53	SB	Approach Depart	50 350	7.7 18	70 N/A	2.10 1.88
Cottonwood Ave	ND	Left Turn	155	5.3	80	2.26	30	Left Turn	20	5.3	80	2.26
		Approach	1,451	11.6	40	1.77		Approach	987	12.4	40	1.68
	EB	Depart	1,496	24.8	N/A	0.78	WB	Depart	1,087	25.2	N/A	0.72
		Left Turn	85	5.1	80	2.27		Left Turn	155	5.1	80	2.27
	NBX	Approach	445	31	N/A	0.65	SBX	Approach	70	31	N/A	0.65
	NDA	Depart	260	31	N/A	0.65	SDA	Depart	350	31	N/A	0.65
	EBX	Approach	1,536	28	N/A	0.69	WBX	Approach	1,142	28	N/A	0.69
		Depart	1,496	28	N/A	0.69		Depart	1,087	28	N/A	0.69
Mission Gorge Rd &	NB	Approach	1,642	1.6	55	2.28	CD	Approach	903	9.3	55	2.00
Magnolia Ave	NB	Depart Left Turn	1,913 310	6.5 5.3	N/A 80	2.18	SB	Depart Left Turn	1,701 288	9.3 5.3	N/A 80	2.00 2.26
		Approach	1,135	7.9	55	2.26		Approach	980	9.3	55	2.20
	EB	Depart	1,483	14.8	N/A	1.40	WB	Depart	1,177	24.1	N/A	0.99
		Left Turn	421	1.7	80	2.28		Left Turn	595	1.7	80	2.28
	NBX	Approach	1,952	31	N/A	0.65	SBX	Approach	1,191	31	N/A	0.65
	NDA	Depart	1,913	31	N/A	0.65	SDA	Depart	1,701	31	N/A	0.65
	EBX	Approach	1,556	31	N/A	0.65	WBX	Approach	1,575	31	N/A	0.65
	LDA	Depart	1,483	31	N/A	0.65	11 11 11	Depart	1,177	31	N/A	0.65
Woodside Ave N &	ND	Approach	963	2.7	40	2.28	CD	Approach	565	13.1	40	1.59
SR-67 SB Off-Ramp	NB	Depart	0				SB	Depart	1,045	24.1	N/A	0.99
		Left Turn Approach	190 295	5.1	80 70	2.27		Left Turn Approach	10 5	5.1 7.7	80 70	2.27 2.10
	EB	Depart	1,008	6.6 0.9	N/A	2.18 2.28	WB	Depart	205	22.3	N/A	1.53
	LD	Left Turn	0				""	Left Turn	230	1.7	80	2.28
		Approach	1,153	28	N/A	0.69	anti	Approach	575	28	N/A	0.69
	NBX	Depart	0			-	SBX	Depart	1,045	28	N/A	0.69
	EBX	Approach	295	31	N/A	0.65	WBX	Approach	235	31	N/A	0.65
	LDA	Depart	1,008	31	N/A	0.65	WDA	Depart	205	31	N/A	0.65
Fanita Dr & SR-52		Approach	366	14.6	40	1.42		Approach	820	12.3	40	1.69
WB Off-Ramp	NB	Depart	788	28.6	N/A	0.68	SB	Depart	990	28.1	N/A	0.68
		Left Turn	0			-		Left Turn	0	4.7		
	EB	Approach Depart	0				WB	Approach Depart	422 0	1.7	70	2.28
	LD	Left Turn	0				WD	Left Turn	170	5.3	80	2.26
		Approach	366	31	N/A	0.65		Approach	820	31	N/A	0.65
	NBX	Depart	788	31	N/A	0.65	SBX	Depart	990	31	N/A	0.65
	EDV	Approach	0			-	WDV	Approach	592	31	N/A	0.65
	EBX	Depart	0				WBX	Depart	0	-		
Buena Vista Ave &		Approach	2,099	9.2	40	2.01		Approach	1,708	10.6	40	1.89
Cuyamaca St	NB	Depart	1,979	23	N/A	1.32	SB	Depart	2,088	23	N/A	1.32
		Left Turn	30	5.1	80	2.27		Left Turn	80	5.1	80	2.27
	ED	Approach	70	7.7	70	2.10	WD	Approach	105	7.7	70	2.10
	EB	Depart Left Turn	350	18	N/A	1.88	WB	Depart Left Turn	55 350	23.9	N/A	1.05
}		Left Turn Approach	30 2,129	5.3 28	80 N/A	2.26 0.69		Left Turn Approach	1,788	0.5 28	80 N/A	2.28 0.69
	NBX	Depart	1,979	28	N/A	0.69	SBX	Depart	2,088	28	N/A	0.69
	EDY	Approach	100	31	N/A	0.65	******	Approach	455	31	N/A	0.65
	EBX	Depart	350	31	N/A	0.65	WBX	Depart	55	31	N/A	0.65
Prospect Ave &		Approach	316	12.4	40	1.68		Approach	393	13.7	40	1.52
Fanita Dr	NB	Depart	506	24.1	N/A	0.99	SB	Depart	413	25.6	N/A	0.72
		Left Turn	60	5.1	80	2.27		Left Turn	220	1.7	80	2.28
	_	Approach	160	7.7	70	2.10	_	Approach	260	6.6	70	2.18
	EB	Depart	430	10.1	N/A	1.95	WB	Depart	300	22.3	N/A	1.53
		Left Turn	130	5.3	80	2.26		Left Turn	110	5.3	80	2.26
	NBX	Approach	376	28	N/A	0.69	SBX	Approach	613	28	N/A	0.69
		Depart	506 290	28	N/A	0.69		Depart	413 370	28	N/A	0.69
	EBX	Approach Depart	430	31 31	N/A N/A	0.65 0.65	WBX	Approach	300	31 31	N/A N/A	0.65 0.65
			400	. JI	IN/A	0.00	1	Depart	300	J I	IN/A	0.00

LSA Associates, Inc. CALINE4 Modeling Data - AM - With Project, WO Magnollia Ave. Con. No Left Tur

INTERSECTING STREETS			VPH	MPH	%RT	EF			VPH	MPH	%RT	EF
Princess Joann Rd		Approach	362	13.1	40	1.59		Approach	863	11.6	40	1.77
& Cuyamaca St	NB	Depart	362	25.6	N/A	0.72	SB	Depart	863	23	N/A	1.32
		Left Turn	0					Left Turn	0			
	EB	Approach	0				WB	Approach Depart	84	7.4	70	2.12
	EB	Depart Left Turn	0				WD	Left Turn	0			
		Approach	362	28	N/A	0.69		Approach	863	28	N/A	0.69
	NBX	Depart	446	28	N/A	0.69	SBX	Depart	863	28	N/A	0.69
	EBX	Approach	0				WBX	Approach	84	28	N/A	0.69
	EBA	Depart	0				WBA	Depart	0		-	-
Ganley Rd &		Approach	343	12.4	40	1.68		Approach	657	9.2	40	2.01
Fanita Pkwy	NB	Depart	290	25.6	N/A	0.72	SB	Depart	785	21	N/A	1.92
		Left Turn	0					Left Turn	5	5.1	80	2.27
	EB	Approach	0		 N//A		WB	Approach	5	7.4	70	2.12
	EB	Depart Left Turn	63 0	21.5	N/A	1.77	WD	Depart Left Turn	0 128	5.1	80	2.27
		Approach	343	28	N/A	0.69		Approach	662	28	N/A	0.69
	NBX	Depart	290	28	N/A	0.69	SBX	Depart	785	28	N/A	0.69
	EDV	Approach	0				WDW	Approach	133	28	N/A	0.69
	EBX	Depart	63	28	N/A	0.69	WBX	Depart	0		-	
Woodglen Vista Dr		Approach	394	9.8	55	1.97		Approach	891	5.4	55	2.25
& Cuyamaca St	NB	Depart	326	24	N/A	1.02	SB	Depart	891	6.5	N/A	2.18
		Left Turn	3	5.1	80	2.27		Left Turn	0			
	E.P.	Approach	13	11.1	55	1.83	11770	Approach	46	11.1	55	1.83
	EB	Depart Left Turn	1	24.4	N/A	0.90	WB	Depart Left Turn	0		-	
		Left Turn	0 397	28	N/A	0.69		Left Turn Approach	0 891	28	N/A	0.69
	NBX	Approach Depart	397	28	N/A N/A	0.69	SBX	Approach Depart	1,136	28	N/A N/A	0.69
		Approach	13	28	N/A	0.69		Approach	279	28	N/A	0.69
	EBX	Depart	69	28	N/A	0.69	WBX	Depart	3	28	N/A	0.69
El Nopa; &		Approach	409	9.8	55	1.97		Approach	1,149	1.6	55	2.28
Cuyamaca St.	NB	Depart	358	23.6	N/A	1.14	SB	Depart	1,148	6.5	N/A	2.18
		Left Turn	5	5.1	80	2.27		Left Turn	0			-
		Approach	8	11.8	55	1.75		Approach	49	11.8	55	1.75
	EB	Depart	1	27.6	N/A	0.69	WB	Depart	4	27.6	N/A	0.69
		Left Turn	0					Left Turn	264	1.7	80	2.28
	NBX	Approach	414	28	N/A	0.69	SBX	Approach	1,149	28	N/A	0.69
		Depart Approach	403 8	28 31	N/A N/A	0.69 0.65		Depart Approach	1,419 313	28 31	N/A N/A	0.69 0.65
	EBX	Depart	49	31	N/A	0.65	WBX	Depart	10	31	N/A	0.65
El Nopal &		Approach	574	9.8	55	1.97		Approach	590	1.6	55	2.28
Magnolia Ave	NB	Depart	356	23.6	N/A	1.14	SB	Depart	472	6.5	N/A	2.18
		Left Turn	51	5.1	80	2.27		Left Turn	118	5.1	80	2.27
		Approach	160	11.8	55	1.75		Approach	309	11.8	55	1.75
	EB	Depart	64	28	N/A	0.69	WB	Depart	164	27.6	N/A	0.69
		Left Turn	46	27.6	N/A	0.69		Left Turn	140	1.7	80	2.28
	NBX	Approach	625	28	N/A	0.69	SBX	Approach	675	28	N/A	0.69
		Depart Approach	547 206	28 31	N/A N/A	0.69 0.65		Depart Approach	708 449	28 31	N/A N/A	0.69 0.65
	EBX	Depart	470	31	N/A	0.65	WBX	Depart	300	31	N/A	0.65
El Nopal & Los		Approach	250	6.4	70	2.19		Approach	0			
Ranchitos Rd	NB	Depart	0				SB	Depart	210	20	N/A	2.21
		Left Turn	25	5.1	80	2.27		Left Turn	0			
		Approach	407	11.6	40	1.77		Approach	285	13.1	40	1.59
	EB	Depart	637	23	N/A	1.32	WB	Depart	310	25.2	N/A	0.72
		Left Turn	0					Left Turn	190	5.1	80	2.27
	NBX	Approach Depart	275 0	28	N/A 	0.69	SBX	Approach Depart	210	28	N/A	0.69
		Approach	407	28	N/A	0.69		Approach	475	28	N/A	0.69
	EBX	Depart	637	28	N/A	0.69	WBX	Depart	310	28	N/A	0.69
Lake Canyon Rd &		Approach	373	12.4	40	1.68		Approach	728	7.2	40	2.14
Fanita Pkwy	NB	Depart	324	25.2	N/A	0.72	SB	Depart	818	17.8	N/A	1.84
		Left Turn	0					Left Turn	51	5.1	80	2.27
		Approach	0					Approach	26	7.4	70	2.12
	EB	Depart	126	21.5	N/A	1.77	WB	Depart	0			
		Left Turn	0					Left Turn	90	5.1	80	2.27
	NBX	Approach	373	28	N/A	0.69	SBX	Approach	779	28	N/A	0.69
		Depart	324	28	N/A 	0.69		Depart	818	28	N/A	0.69
	EBX	Approach Depart	0 126	28	N/A	0.69	WBX	Approach Depart	116 0	28	N/A 	0.69
Beck Dr &		Approach	452	9.8	55	1.97		Approach	1,066	1	55	2.28
Cuyamaca St	NB	Depart	420	23.6	N/A	1.14	SB	Depart	1,066	6.5	N/A	2.18
-		Left Turn	1	5.1	80	2.27		Left Turn	3	5.1	80	2.27
		Approach	11	11.8	55	1.75		Approach	2	11.8	55	1.75
	EB	Depart	11	27.6	N/A	0.69	WB	Depart	1	27.6	N/A	0.69
		Left Turn	0					Left Turn	93	5.3	80	2.26
	NBX	Approach	453	28	N/A	0.69	SBX	Approach	1,069	28	N/A	0.69
		Depart	422	28	N/A	0.69		Depart	1,170	28	N/A	0.69
			4.4	31	N/A	0.65	l	Approach	95	31	N/A	0.65
	EBX	Approach	11				WBX					
Mast Blvd & SR-	EBX	Approach Depart Approach	964 75	31 7.7	N/A 70	0.65 2.10	WBX	Depart Approach	2	31	N/A	0.65

LSA Associates, Inc. CALINE4 Modeling Data - AM - With Project, WO Magnollia Ave. Con. No Left Tur

INTERSECTING STREETS			VPH	MPH	%RT	EF			VPH	MPH	%RT	EF
		Left Turn	10	5.3	80	2.26		Left Turn	0			
		Approach	504	13.9	40	1.50		Approach	3,146	2.7	40	2.28
	EB	Depart	579	29.1	N/A	0.67	WB	Depart	300	29.1	N/A	0.67
		Left Turn	20	5.3	80	2.26		Left Turn	0			
	NBX	Approach Depart	85 2,876	31 31	N/A N/A	0.65 0.65	SBX	Approach Depart	0			
		Approach	524	31	N/A	0.65		Approach	3,146	31	N/A	0.65
	EBX	Depart	579	31	N/A	0.65	WBX	Depart	300	31	N/A	0.65
Mast Blvd & West		Approach	451	1.7	70	2.28		Approach	110	7.7	70	2.10
Hills Pkwy	NB	Depart	155	23.9	N/A	1.05	SB	Depart	305	18	N/A	1.88
		Left Turn	1,200	0.1	80	2.28		Left Turn	10	5.3	80	2.26
		Approach	459	13.9	40	1.50		Approach	1,866	2.7	40	2.28
	EB	Depart	795	28.6	N/A	0.68	WB	Depart	3,146	14.1	N/A	1.48
		Left Turn	120	5.3	80	2.26		Left Turn	185	5.3	80	2.26
	NBX	Approach Depart	1,651 155	31 31	N/A N/A	0.65 0.65	SBX	Approach Depart	120 305	31 31	N/A N/A	0.65 0.65
		Approach	579	31	N/A	0.65		Approach	2,051	31	N/A	0.65
	EBX	Depart	795	31	N/A	0.65	WBX	Depart	3,146	31	N/A	0.65
Mast Blvd &		Approach	158	7.7	70	2.10		Approach	751	0.2	70	2.28
Fanita Pkwy	NB	Depart	419	10.1	N/A	1.95	SB	Depart	543	5.1	N/A	2.27
		Left Turn	70	5.3	80	2.26		Left Turn	71	5.3	80	2.26
		Approach	731	12.4	40	1.68		Approach	1,588	7.2	40	2.14
	EB	Depart	672	25.2	N/A	0.72	WB	Depart	2,083	13.2	N/A	1.58
		Left Turn	228	1.7	80	2.28		Left Turn	120	5.1	80	2.27
	NBX	Approach	228	31	N/A	0.65	SBX	Approach	822	31	N/A	0.65
		Depart	419	31	N/A	0.65		Depart	543	31	N/A N/A	0.65
	EBX	Approach Depart	959 672	28 28	N/A N/A	0.69	WBX	Approach Depart	1,708 2,083	28 28	N/A N/A	0.69 0.69
Mast Blvd &		Approach	472	11	55	1.84		Approach	1,124	7.9	55	2.09
Cuyamaca St	NB	Depart	282	27.1	N/A	0.70	SB	Depart	617	20.4	N/A	2.09
,		Left Turn	210	5.3	80	2.26		Left Turn	384	5.3	80	2.26
		Approach	558	10.3	55	1.92		Approach	725	9.3	55	2.00
	EB	Depart	339	26.7	N/A	0.70	WB	Depart	694	14.8	N/A	1.40
		Left Turn	157	5.3	80	2.26		Left Turn	346	5.3	80	2.26
	NBX	Approach	682	31	N/A	0.65	SBX	Approach	1,512	31	N/A	0.65
		Depart	470	31	N/A	0.65		Depart	1,226	31	N/A	0.65
	EBX	Approach	715	31	N/A	0.65	WBX	Approach	1,071	31	N/A	0.65
Riverford Rd & SR-		Depart	913	9.2	N/A 40	0.65 2.01		Depart	1,411	31 2.7	N/A 40	0.65 2.28
67 SB Ramps	NB	Approach Depart	631 827	17.8	N/A	1.84	SB	Approach Depart	1,078 428	24.8	N/A	0.78
o, sp rumps	112	Left Turn	460	0.2	80	2.28	55	Left Turn	0			
		Approach	0					Approach	196	7.7	70	2.10
	EB	Depart	0				WB	Depart	1,130	0.9	N/A	2.28
		Left Turn	0					Left Turn	20	5.3	80	2.26
	NBX	Approach	1,091	28	N/A	0.69	SBX	Approach	1,078	28	N/A	0.69
		Depart	827	28	N/A	0.69		Depart	428	28	N/A	0.69
	EBX	Approach	0				WBX	Approach	216	31	N/A	0.65
D:f1 D 1 %		Depart Approach	0					Depart Approach	1,130	31	N/A	0.65
Riverford Rd & Woodside Ave	NB	Depart	1,091	0.9	N/A	2.28	SB	Depart	50 0	7.4	70	2.12
Troouside Tro		Left Turn	0					Left Turn	328	0.5	80	2.28
		Approach	350	12.4	40	1.68		Approach	701	7.2	40	2.14
	EB	Depart	678	23	N/A	1.32	WB	Depart	180	25.9	N/A	0.71
		Left Turn	520	0.1	80	2.28		Left Turn	0	-		
	NBX	Approach	0				SBX	Approach	378	28	N/A	0.69
		Depart	1,091	28	N/A	0.69		Depart	0			
	EBX	Approach	870	28	N/A	0.69	WBX	Approach Depart	701	28	N/A	0.69
Mission Gorge Rd		Depart Approach	678 140	28 7.7	N/A 70	0.69 2.10		Approach	180 526	28 0.7	N/A 70	0.69 2.28
& West Hills Pkwy	NB	Depart	1,624	0.9	N/A	2.10	SB	Depart	220	22.3	N/A	1.53
a est 11s 1y		Left Turn	40	5.3	80	2.26		Left Turn	175	5.3	80	2.26
		Approach	490	13.9	40	1.50		Approach	2,325	2.7	40	2.28
	EB	Depart	665	28.6	N/A	0.68	WB	Depart	1,596	23.5	N/A	1.17
		Left Turn	329	5.3	80	2.26		Left Turn	80	5.3	80	2.26
	NBX	Approach	180	31	N/A	0.65	SBX	Approach	701	31	N/A	0.65
	ПЪЛ	Depart	1,624	31	N/A	0.65	SDA	Depart	220	31	N/A	0.65
	EBX	Approach	819	31	N/A	0.65	WBX	Approach	2,405	31	N/A	0.65
Mission C P.1		Depart	665	31	N/A	0.65		Depart	1,596	31	N/A	0.65
Mission Gorge Rd & Carlton Hills	NB	Approach Depart	50 1,228	7.7 0.9	70 N/A	2.10 2.28	SB	Approach Depart	1,175 195	0.1 23.9	70 N/A	2.28 1.05
& Cariton Hills Blvd	מיי	Left Turn	40	5.3	80	2.26	OD.	Left Turn	436	1.7	80	2.28
·-		Approach	879	13.9	40	1.50		Approach	1,805	9.6	40	1.98
	EB	Depart	1,235	28.1	N/A	0.68	WB	Depart	2,512	19.5	N/A	2.13
		Left Turn	760	0.5	80	2.28		Left Turn	25	5.3	80	2.26
	NBX	Approach	90	31	N/A	0.65	SBX	Approach	1,611	31	N/A	0.65
	NDA	Depart	1,228	31	N/A	0.65	SDA	Depart	195	31	N/A	0.65
	EBX	Approach	1,639	31	N/A	0.65	WBX	Approach	1,830	31	N/A	0.65
		Depart	1,235	31	N/A	0.65	., DA	Depart	2,512	31	N/A	0.65
		-										
Mission Gorge Rd) IF	Approach	185	7.7	70	2.10	O.E.	Approach	410	1.7	70	2.28
& Town Center	NB	Approach Depart	560	5.1	N/A	2.27	SB	Depart	420	10.1	N/A	1.95
	NB	Approach					SB					

LSA Associates, Inc. CALINE4 Modeling Data - AM - With Project, WO Magnollia Ave. Con. No Left Tur

INTERSECTING STREETS			VPH	MPH	%RT	EF			VPH	MPH	%RT	EF
OTTLE TO	EB	Depart	789	25.6	N/A	0.72	WB	Depart	1,407	24.8	N/A	0.78
		Left Turn	300	5.1	80	2.27		Left Turn	100	5.1	80	2.27
	NBX	Approach	395	31	N/A	0.65	SBX	Approach	520	31	N/A	0.65
		Depart	560	31	N/A	0.65		Depart	420	31	N/A	0.65
	EBX	Approach Depart	1,134 789	28 28	N/A N/A	0.69	WBX	Approach Depart	1,127 1,407	28 28	N/A N/A	0.69 0.69
Mission Gorge Rd		Approach	723	4.2	70	2.28		Approach	786	6.6	70	2.18
& Cuyamaca St	NB	Depart	912	10.1	N/A	1.95	SB	Depart	1,122	18	N/A	1.88
		Left Turn	700	0.5	80	2.28		Left Turn	151	5.3	80	2.26
	ED	Approach	759	13.9	40	1.50	WD	Approach	738	13.9	40	1.50
	EB	Depart Left Turn	741 179	29.1 5.3	N/A 80	0.67 2.26	WB	Depart Left Turn	1,457 196	28.1 5.3	N/A 80	0.68 2.26
		Approach	1,423	31	N/A	0.65		Approach	937	31	N/A	0.65
	NBX	Depart	912	31	N/A	0.65	SBX	Depart	1,122	31	N/A	0.65
	EBX	Approach	938	31	N/A	0.65	WBX	Approach	934	31	N/A	0.65
	LDA	Depart	741	31	N/A	0.65	WDA	Depart	1,457	31	N/A	0.65
Mission Gorge Rd	NID	Approach	190	7.7	70	2.10	CD.	Approach	65	7.7	70	2.10
& Cottonwood Ave	NB	Depart Left Turn	155	23.9	N/A	1.05	SB	Depart Left Turn	270 30	22.3	N/A	1.53
Ave		Approach	120 582	5.3 13.7	80 40	2.26 1.52		Approach	1,023	5.3 12.4	80 40	2.26 1.68
	EB	Depart	612	25.6	N/A	0.72	WB	Depart	1,138	25.2	N/A	0.72
	1	Left Turn	35	5.1	80	2.27	1 -	Left Turn	130	5.1	80	2.27
	NBX	Approach	310	31	N/A	0.65	SBX	Approach	95	31	N/A	0.65
	NDA	Depart	155	31	N/A	0.65	SBA	Depart	270	31	N/A	0.65
	EBX	Approach	617	28	N/A	0.69	WBX	Approach	1,153	28	N/A	0.69
		Depart	612	28	N/A	0.69	., 2.1	Depart	1,138	28	N/A	0.69
Mission Gorge Rd	NID	Approach	1,243	5.5	55	2.25	CD	Approach	1,547	3.1	55	2.28
& Magnolia Ave	NB	Depart	1,276	20.4	N/A	2.09	SB	Depart	1,844	6.5	N/A	2.18
		Left Turn Approach	270 400	5.3 11.8	80 55	2.26 1.75		Left Turn Approach	341 931	5.3 9.3	80 55	2.26
	EB	Depart	991	25.6	N/A	0.72	WB	Depart	1,213	20.4	N/A	2.09
		Left Turn	162	5.3	80	2.26	1	Left Turn	430	1.7	80	2.28
	NBX	Approach	1,513	31	N/A	0.65	SBX	Approach	1,888	31	N/A	0.65
	NDA	Depart	1,276	31	N/A	0.65	SDA	Depart	1,844	31	N/A	0.65
	EBX	Approach	562	31	N/A	0.65	WBX	Approach	1,361	31	N/A	0.65
*** 1:1 : 3:		Depart	991	31	N/A	0.65		Depart	1,213	31	N/A	0.65
Woodside Ave N & SR-67 SB Off-	NB	Approach Depart	456 0	11.6	40	1.77	SB	Approach Depart	631	12.4	40	1.68
Ramp	ND	Left Turn	320	0.5	80	2.28	30	Left Turn	1,101 10	24.1 5.1	N/A 80	0.99 2.27
-tump		Approach	160	7.7	70	2.10		Approach	10	7.7	70	2.10
	EB	Depart	476	10.1	N/A	1.95	WB	Depart	370	18	N/A	1.88
		Left Turn	0					Left Turn	360	0.5	80	2.28
	NBX	Approach	776	28	N/A	0.69	SBX	Approach	641	28	N/A	0.69
	1,511	Depart	0				55.1	Depart	1,101	28	N/A	0.69
	EBX	Approach	160	31	N/A	0.65	WBX	Approach	370	31	N/A	0.65
Fanita Dr & SR-52		Depart Approach	476 641	31 13.1	N/A 40	0.65 1.59		Depart Approach	370 797	31 13.1	N/A 40	0.65 1.59
WB Off-Ramp	NB	Depart	1,224	26	N/A	0.71	SB	Depart	907	28.1	N/A	0.68
B on rump	112	Left Turn	0				- 55	Left Turn	0			
		Approach	0					Approach	583	0.7	70	2.28
	EB	Depart	0				WB	Depart	0			
		Left Turn	0					Left Turn	110	5.3	80	2.26
	NBX	Approach	641	31	N/A	0.65	SBX	Approach	797	31	N/A	0.65
		Depart	1,224	31	N/A	0.65		Depart	907	31	N/A	0.65
	EBX	Approach Depart	0				WBX	Approach Depart	693 0	31	N/A 	0.65
Buena Vista Ave &		Approach	1,551	10.6	40	1.89		Approach	1,195	12.4	40	1.68
Cuyamaca St	NB	Depart	1,451	24.8	N/A	0.78	SB	Depart	1,390	24.8	N/A	0.78
,		Left Turn	55	5.1	80	2.27	1	Left Turn	70	5.1	80	2.27
		Approach	25	7.7	70	2.10		Approach	75	7.7	70	2.10
	EB	Depart	260	22.3	N/A	1.53	WB	Depart	90	23.9	N/A	1.05
		Left Turn	10	5.3	80	2.26		Left Turn	210	1.7	80	2.28
	NBX	Approach	1,606	28	N/A	0.69	SBX	Approach	1,265	28	N/A	0.69
		Depart Approach	1,451 35	28 31	N/A N/A	0.69 0.65		Depart Approach	1,390 285	28	N/A N/A	0.69 0.65
	EBX	Depart	260	31	N/A N/A	0.65	WBX	Depart	90	31 31	N/A N/A	0.65
Prospect Ave &		Approach	426	11.6	40	1.77		Approach	276	13.7	40	1.52
Fanita Dr	NB	Depart	966	13.2	N/A	1.58	SB	Depart	326	25.9	N/A	0.71
	<u></u>	Left Turn	75	5.1	80	2.27		Left Turn	220	1.7	80	2.28
	· ·	Approach	210	6.6	70	2.18	_	Approach	590	0.7	70	2.28
			465	10.1	N/A	1.95	WB	Depart	355	18	N/A	1.88
	EB	Depart				0 00	1					
	EB	Left Turn	215	1.7	80 N/A	2.28		Left Turn	100	5.3	80	2.26
	EB NBX	Left Turn Approach	215 501	1.7 28	N/A	0.69	SBX	Approach	496	28	N/A	0.69
		Left Turn	215	1.7			SBX					

LSA Associates, In CALINE4 Modeling Data - PM - With Project, WO Magnollia Ave. Con. No Left Turi

INTERSECTIN G STREETS			VPH	MPH	%RT	EF			VPH	MPH	%RT	EF
Princess Joann Rd		Approach	718	7.2	40	2.14		Approach	445	13.1	40	1.59
& Cuyamaca St	NB	Depart	718	24.1	N/A	0.99	SB	Depart	445	25.2	N/A	0.72
		Left Turn Approach	0			-		Left Turn Approach	0 167	7.4	70	2.12
	EB	Depart	0				WB	Depart	0			
		Left Turn	0					Left Turn	0			
	NBX	Approach	718	28	N/A	0.69	SBX	Approach	445	28	N/A	0.69
	.,,,,,,,	Depart	718	28	N/A	0.69	5511	Depart	445	28	N/A	0.69
	EBX	Approach	0				WBX	Approach	167	28	N/A 	0.69
Ganley Rd &		Depart Approach	908	2.7	40	2.28		Depart Approach	388	12.4	40	1.68
Fanita Pkwy	NB	Depart	810	17.8	N/A	1.84	SB	Depart	451	24.8	N/A	0.78
•		Left Turn	0					Left Turn	5	5.1	80	2.27
		Approach	0					Approach	5	7.4	70	2.12
	EB	Depart	108	21.5	N/A	1.77	WB	Depart	0			
		Left Turn Approach	908	28	N/A	0.69		Left Turn Approach	63 393	5.1 28	80 N/A	2.27 0.69
	NBX	Depart	810	28	N/A	0.69	SBX	Depart	451	28	N/A	0.69
	EBX	Approach	0				WBX	Approach	68	28	N/A	0.69
	EDA	Depart	108	28	N/A	0.69	WDA	Depart	0			
Woodglen Vista	N.ID	Approach	900	1	55	2.28	GD.	Approach	461	9.8	55	1.97
Dr & Cuyamaca St	NB	Depart Left Turn	668 7	14	N/A	1.49	SB	Depart Left Turn	459	23	N/A	1.32
31		Approach	8	5.1 11.1	80 55	2.27 1.83		Approach	97	11.1	 55	1.83
	EB	Depart	7	24	N/A	1.02	WB	Depart	2	24.4	N/A	0.90
		Left Turn	0					Left Turn	108	5.1	80	2.27
	NBX	Approach	907	28	N/A	0.69	SBX	Approach	461	28	N/A	0.69
		Depart	763	28	N/A	0.69		Depart	574	28	N/A	0.69
	EBX	Approach Depart	239	28 28	N/A N/A	0.69	WBX	Approach Depart	205 11	28 28	N/A N/A	0.69
El Nopa; &		Approach	933	1	55	2.28		Approach	579	9	55	2.02
Cuyamaca St.	NB	Depart	827	6.5	N/A	2.18	SB	Depart	579	21.7	N/A	1.71
		Left Turn	13	5.1	80	2.27		Left Turn	0			
	ED	Approach	6	11.8	55	1.75	TV/D	Approach	95	11.8	55	1.75
	EB	Depart Left Turn	1	27.6	N/A	0.69	WB	Depart Left Turn	8	27.6	N/A	0.69
		Left Turn Approach	946	5.3 28	80 N/A	2.26 0.69		Left Turn Approach	99 579	5.3 28	80 N/A	2.26 0.69
	NBX	Depart	915	28	N/A	0.69	SBX	Depart	683	28	N/A	0.69
	EBX	Approach	7	31	N/A	0.65	WBX	Approach	194	31	N/A	0.65
	EDA	Depart	109	31	N/A	0.65	WBA	Depart	21	31	N/A	0.65
El Nopal &	NID	Approach	858	1	55	2.28	CD	Approach	296	9	55	2.02
Magnolia Ave	NB	Depart Left Turn	570 92	6.5 5.1	N/A 80	2.18	SB	Depart Left Turn	287 54	21.7 5.1	N/A 80	1.71 2.27
		Approach	129	11.8	55	1.75		Approach	340	11.8	55	1.75
	EB	Depart	69	27.6	N/A	0.69	WB	Depart	190	27.6	N/A	0.69
		Left Turn	60	5.3	80	2.26		Left Turn	142	5.3	80	2.26
	NBX	Approach	945	28	N/A	0.69	SBX	Approach	350	28	N/A	0.69
		Depart	726	28	N/A	0.69		Depart	489	28	N/A	0.69
	EBX	Approach Depart	135 406	31 31	N/A N/A	0.65 0.65	WBX	Approach Depart	482 291	31 31	N/A N/A	0.65 0.65
El Nopal & Los		Approach	220	6.4	70	2.19		Approach	0			
Ranchitos Rd	NB	Depart	0				SB	Depart	195	21.5	N/A	1.77
		Left Turn	10	5.1	80	2.27		Left Turn	0			
		Approach	358	12.4	40	1.68		Approach	466	11.6	40	1.77
	EB	Depart	553	24.1	N/A	0.99	WB	Depart	476	24.8	N/A	0.78
		Left Turn Approach	230	28	N/A	0.69		Left Turn Approach	170 0	5.1	80	2.27
	NBX	Depart	0				SBX	Depart	195	28	N/A	0.69
	EBX	Approach	358	28	N/A	0.69	WBX	Approach	636	28	N/A	0.69
	EDA	Depart	553	28	N/A	0.69	WBA	Depart	476	28	N/A	0.69
Lake Canyon Rd	N.ID	Approach	985	2.7	40	2.28	GD.	Approach	452	11.6	40	1.77
& Fanita Pkwy	NB	Depart	971	13.2	N/A	1.58	SB	Depart	505 35	24.1 5.1	N/A	0.99 2.27
		Left Turn Approach	0					Left Turn Approach	79	7.4	80 70	2.12
	EB	Depart	128	21.5	N/A	1.77	WB	Depart	0			
		Left Turn	0					Left Turn	53	5.1	80	2.27
	NBX	Approach	985	28	N/A	0.69	SBX	Approach	487	28	N/A	0.69
		Depart	971	28	N/A	0.69		Depart	505	28	N/A	0.69
	EBX	Approach Depart	0 128	 28	 N/A	0.69	WBX	Approach Depart	132 0	28	N/A 	0.69
Beck Dr &		Approach	1,021	1	55	2.28		Approach	497	7.6	55	2.11
Cuyamaca St	NB	Depart	958	6.5	N/A	2.18	SB	Depart	497	18.8	N/A	2.01
		Left Turn	9	5.1	80	2.27		Left Turn	2	5.1	80	2.27
		Approach	6	11.8	55	1.75		Approach	4	11.8	55	1.75
	EB	Depart	0				WB	Depart	2	27.6	N/A	0.69
		Left Turn Approach	1,030	28	N/A	0.69		Left Turn	54 499	5.3 28	80 N/A	2.26 0.69
	NBX	Approach Depart	960	28	N/A N/A	0.69	SBX	Approach Depart	499 557	28	N/A N/A	0.69
	EDT	Approach	6	31	N/A	0.65	WD77	Approach	58	31	N/A	0.65
	EBX	Depart	0				WBX	Depart	14	31	N/A	0.65
Mast Blvd & SR- 52 WB Ramps	NB	Approach Depart	645 768	0.4 1.6	70 N/A	2.28 2.28	SB	Approach Depart	0			

LSA Associates, In CALINE4 Modeling Data - PM - With Project, WO Magnollia Ave. Con. No Left Turi

INTERSECTIN G STREETS			VPH	МРН	%RT	EF			VPH	MPH	%RT	EF
		Left Turn	0					Left Turn	0	-	-	
	F.P.	Approach	1,756	4.9	40	2.28		Approach	1,093	2.7	40	2.28
	EB	Depart Left Turn	2,396	14.1	N/A	1.48	WB	Depart Left Turn	355	28.6	N/A	0.68
		Approach	25 645	5.3 31	80 N/A	2.26 0.65		Approach	0		-	
	NBX	Depart	768	31	N/A	0.65	SBX	Depart	0	-	-	
	EBX	Approach	1,781	31	N/A	0.65	WBX	Approach	1,093	31	N/A	0.65
Mast Blvd & West		Depart	2,396 558	31 0.7	N/A 70	0.65 2.28		Depart Approach	355 120	31 7.7	N/A 70	0.65 2.10
Hills Pkwy	NB	Approach Depart	275	22.3	N/A	1.53	SB	Depart	746	1.6	N/A	2.10
,		Left Turn	280	5.3	80	2.26		Left Turn	75	5.3	80	2.26
	ED	Approach	2,246	2.7	40	2.28	WD	Approach	783	13.1	40	1.59
	EB	Depart Left Turn	2,314 150	14.1 5.3	N/A 80	1.48 2.26	WB	Depart Left Turn	1,093 216	27.2 5.3	N/A 80	0.70 2.26
	N.D.V.	Approach	838	31	N/A	0.65	anu	Approach	195	31	N/A	0.65
	NBX	Depart	275	31	N/A	0.65	SBX	Depart	746	31	N/A	0.65
	EBX	Approach	2,396	31	N/A	0.65	WBX	Approach	999	31	N/A	0.65
Mast Blvd &		Depart	2,314 326	31 4.2	N/A 70	0.65 2.28		Depart Approach	1,093 466	31 1.7	N/A 70	0.65 2.28
Fanita Pkwy	NB	Approach Depart	1,035	0.9	N/A	2.28	SB	Depart	263	22.3	N/A	1.53
		Left Turn	80	5.3	80	2.26		Left Turn	97	5.3	80	2.26
		Approach	1,193	10.6	40	1.89		Approach	619	12.4	40	1.68
	EB	Depart	1,270	23	N/A	1.32	WB	Depart	899	24.8	N/A	0.78
		Left Turn Approach	646 406	0.1 31	80 N/A	2.28 0.65		Left Turn Approach	40 563	5.1 31	80 N/A	2.27 0.65
	NBX	Depart	1,035	31	N/A	0.65	SBX	Depart	263	31	N/A N/A	0.65
	EBX	Approach	1,839	28	N/A	0.69	WBX	Approach	659	28	N/A	0.69
	LDA	Depart	1,270	28	N/A	0.69	WBA	Depart	899	28	N/A	0.69
Mast Blvd &	ND	Approach	1,061	5.5	55	2.25	CD	Approach	557	10.3	55	1.92
Cuyamaca St	NB	Depart Left Turn	646 238	20.4 5.3	N/A 80	2.09	SB	Depart Left Turn	372 205	24.1 5.3	N/A 80	0.99 2.26
		Approach	887	5.5	55	2.25		Approach	348	11	55	1.84
	EB	Depart	633	14.8	N/A	1.40	WB	Depart	281	25.6	N/A	0.72
		Left Turn	329	0.1	80	2.28		Left Turn	302	5.3	80	2.26
	NBX	Approach Depart	1,299 1,042	31 31	N/A N/A	0.65 0.65	SBX	Approach Depart	762 928	31 31	N/A N/A	0.65 0.65
	EDW	Approach	1,216	31	N/A	0.65	WDW	Approach	650	31	N/A	0.65
	EBX	Depart	1,253	31	N/A	0.65	WBX	Depart	704	31	N/A	0.65
Riverford Rd &		Approach	867	4.8	40	2.28		Approach	1,107	2.7	40	2.28
SR-67 SB Ramps	NB	Depart Left Turn	1,013	13.2	N/A	1.58	SB	Depart Left Turn	327	25.2	N/A	0.72
		Left Turn Approach	300	1.7	80	2.28		Left Turn Approach	0 146	7.7	70	2.10
	EB	Depart	0				WB	Depart	1,100	0.9	N/A	2.28
		Left Turn	0					Left Turn	20	5.3	80	2.26
	NBX	Approach	1,167	28	N/A	0.69	SBX	Approach	1,107	28	N/A	0.69
		Depart Approach	1,013 0	28	N/A	0.69		Depart Approach	327 166	28 31	N/A N/A	0.69
	EBX	Depart	0				WBX	Depart	1,100	31	N/A	0.65
Riverford Rd &		Approach	0					Approach	40	7.4	70	2.12
Woodside Ave	NB	Depart	1,107	0.9	N/A	2.28	SB	Depart	0			
		Left Turn Approach	740	7.2	40	2.14		Left Turn Approach	237 487	1.7 11.6	80 40	2.28 1.77
	EB	Depart	977	13.2	N/A	1.58	WB	Depart	150	25.9	N/A	0.71
		Left Turn	730	0	80	2.28		Left Turn	0	-	-	
	NBX	Approach	0				SBX	Approach	277	28	N/A	0.69
		Depart Approach	1,107 1,470	28 28	N/A N/A	0.69		Depart Approach	0 487	28	 N/A	0.69
	EBX	Depart	977	28	N/A	0.69	WBX	Depart	150	28	N/A	0.69
Mission Gorge Rd		Approach	100	7.7	70	2.10		Approach	463	1.7	70	2.28
& West Hills	NB	Depart	956	0.9	N/A	2.28	SB	Depart	230	22.3	N/A	1.53
Pkwy		Left Turn Approach	30 965	5.3 12.3	80 40	2.26 1.69		Left Turn Approach	260 765	5.3 13.1	80 40	2.26 1.59
	EB	Depart	1,200	27.2	N/A	0.70	WB	Depart	918	28.1	N/A	0.68
		Left Turn	636	0.5	80	2.28		Left Turn	85	5.3	80	2.26
	NBX	Approach	130	31	N/A	0.65	SBX	Approach	723	31	N/A	0.65
	1,511	Depart	956	31	N/A	0.65	5511	Depart	230	31	N/A	0.65
	EBX	Approach Depart	1,601 1,200	31 31	N/A N/A	0.65 0.65	WBX	Approach Depart	850 918	31 31	N/A N/A	0.65 0.65
Mission Gorge Rd		Approach	115	7.7	70	2.10		Approach	790	0.2	70	2.28
& Carlton Hills	NB	Depart	1,698	0.9	N/A	2.28	SB	Depart	440	10.1	N/A	1.95
Blvd		Left Turn	60	5.3	80	2.26		Left Turn	442	1.7	80	2.28
	EB	Approach Depart	1,516 1,833	11.1 26	40 N/A	1.83 0.71	WB	Approach Depart	1,666 1,738	11.1 27.2	40 N/A	1.83 0.70
	EÐ	Left Turn	970	0.2	N/A 80	2.28	WB	Left Turn	1,738	5.3	N/A 80	2.26
	NBX	Approach	175	31	N/A	0.65	SBX	Approach	1,232	31	N/A	0.65
	NDA	Depart	1,698	31	N/A	0.65	SBA	Depart	440	31	N/A	0.65
	EBX	Approach	2,486	31	N/A	0.65	WBX	Approach	1,816	31	N/A	0.65
Mission Gorge Rd		Depart Approach	1,833 490	31 1.7	N/A 70	0.65 2.28		Depart Approach	1,738 840	31 0.1	N/A 70	0.65 2.28
mission dorge Ku	NB	Depart	1,285	0.9	N/A	2.28	SB	Depart	605	3.2	N/A	2.28
& Town Center	IND						1	1				
& Town Center Pkwy	ND	Left Turn	390	5.3	80	2.26		Left Turn	340	5.3	80	2.26

LSA Associates, In CALINE4 Modeling Data - PM - With Project, WO Magnollia Ave. Con. No Left Turi

INTERSECTIN G STREETS			VPH	MPH	%RT	EF			VPH	MPH	%RT	EF
GSIREEIS	EB	Depart	1,716	24.1	N/A	0.99	WB	Depart	1,753	24.1	N/A	0.99
		Left Turn	620	0.5	80	2.28		Left Turn	195	5.1	80	2.27
	NBX	Approach	880	31	N/A	0.65	SBX	Approach	1,180	31	N/A	0.65
		Depart	1,285	31	N/A	0.65		Depart	605	31	N/A	0.65
	EBX	Approach Depart	2,016 1,716	28 28	N/A N/A	0.69 0.69	WBX	Approach Depart	1,283 1,753	28 28	N/A N/A	0.69 0.69
Mission Gorge Rd		Approach	1,442	0.2	70	2.28		Approach	1,138	4.2	70	2.28
& Cuyamaca St	NB	Depart	1,723	1.2	N/A	2.28	SB	Depart	1,543	5.1	N/A	2.27
		Left Turn	735	0.5	80	2.28		Left Turn	348	5.3	80	2.26
	ED	Approach	1,085	13.1	40	1.59	WD	Approach	762	13.9	40	1.50
	EB	Depart Left Turn	1,440 416	28.1 1.7	N/A 80	0.68 2.28	WB	Depart Left Turn	1,513 293	27.2 5.3	N/A 80	0.70 2.26
		Approach	2,177	31	N/A	0.65		Approach	1,486	31	N/A	0.65
	NBX	Depart	1,723	31	N/A	0.65	SBX	Depart	1,543	31	N/A	0.65
	EBX	Approach	1,501	31	N/A	0.65	WBX	Approach	1,055	31	N/A	0.65
	LDA	Depart	1,440	31	N/A	0.65	11 11 11	Depart	1,513	31	N/A	0.65
Mission Gorge Rd	ND	Approach	290	6.6	70	2.18	CD	Approach	50	7.7	70	2.10
& Cottonwood Ave	NB	Depart Left Turn	260 155	22.3 5.3	N/A 80	1.53 2.26	SB	Depart Left Turn	350 20	18 5.3	N/A 80	1.88 2.26
		Approach	1,453	11.6	40	1.77		Approach	987	12.4	40	1.68
	EB	Depart	1,498	24.8	N/A	0.78	WB	Depart	1,087	25.2	N/A	0.72
		Left Turn	85	5.1	80	2.27		Left Turn	155	5.1	80	2.27
	NBX	Approach	445	31	N/A	0.65	SBX	Approach	70	31	N/A	0.65
		Depart Approach	260 1,538	31 28	N/A N/A	0.65 0.69		Depart Approach	350 1,142	31 28	N/A N/A	0.65 0.69
	EBX	Depart	1,498	28	N/A	0.69	WBX	Depart	1,087	28	N/A	0.69
Mission Gorge Rd		Approach	1,645	1.6	55	2.28		Approach	902	9.3	55	2.00
& Magnolia Ave	NB	Depart	1,920	6.5	N/A	2.18	SB	Depart	1,700	9.3	N/A	2.00
		Left Turn	310	5.3	80	2.26		Left Turn	288	5.3	80	2.26
	EB	Approach	1,135	7.9	55	2.09	WB	Approach	982	9.3	55	2.00
	EB	Depart Left Turn	1,483 423	14.8 1.7	N/A 80	1.40 2.28	WB	Depart Left Turn	1,177 595	24.1 1.7	N/A 80	0.99 2.28
	N. IDAY	Approach	1,955	31	N/A	0.65	anu	Approach	1,190	31	N/A	0.65
	NBX	Depart	1,920	31	N/A	0.65	SBX	Depart	1,700	31	N/A	0.65
	EBX	Approach	1,558	31	N/A	0.65	WBX	Approach	1,577	31	N/A	0.65
*** 1:1 : 3:		Depart	1,483	31	N/A	0.65	11211	Depart	1,177	31	N/A	0.65
Woodside Ave N & SR-67 SB Off-	NB Dep	Approach	963	2.7	40	2.28	SB	Approach	567	13.1 24.1	40	1.59
Ramp		Left Turn	0 190	5.1	80	2.27	30	Depart Left Turn	1,047 10	5.1	N/A 80	0.99 2.27
		Approach	295	6.6	70	2.18		Approach	5	7.7	70	2.10
	EB	Depart	1,008	0.9	N/A	2.28	WB	Depart	205	22.3	N/A	1.53
		Left Turn	0	-		-		Left Turn	230	1.7	80	2.28
	NBX	Approach	1,153	28	N/A	0.69	SBX	Approach	577	28	N/A	0.69
		Depart Approach	0 295	31	N/A	0.65		Depart Approach	1,047 235	28 31	N/A N/A	0.69 0.65
	EBX	Depart	1,008	31	N/A	0.65	WBX	Depart	205	31	N/A	0.65
Fanita Dr & SR-		Approach	367	14.6	40	1.42		Approach	820	12.3	40	1.69
52 WB Off-Ramp	NB	Depart	790	28.6	N/A	0.68	SB	Depart	990	28.1	N/A	0.68
		Left Turn	0	-		-		Left Turn	0			
	EB	Approach	0				WB	Approach	423	1.7	70	2.28
	EB	Depart Left Turn	0				WB	Depart Left Turn	0 170	5.3	80	2.26
	11011	Approach	367	31	N/A	0.65	anti	Approach	820	31	N/A	0.65
	NBX	Depart	790	31	N/A	0.65	SBX	Depart	990	31	N/A	0.65
	EBX	Approach	0	-		-	WBX	Approach	593	31	N/A	0.65
D 17' + 4		Depart	0					Depart	0			
Buena Vista Ave & Cuyamaca St	NB	Approach Depart	2,103 1,983	7.2	40 N/A	2.14 1.32	SB	Approach Depart	1,706 2,086	10.6 23	40 N/A	1.89 1.32
& Cuyamaca St	ND	Left Turn	30	5.1	80	2.27	55	Left Turn	80	5.1	80	2.27
		Approach	70	7.7	70	2.10		Approach	105	7.7	70	2.10
	EB	Depart	350	18	N/A	1.88	WB	Depart	55	23.9	N/A	1.05
		Left Turn	30	5.3	80	2.26		Left Turn	350	0.5	80	2.28
	NBX	Approach	2,133	28	N/A	0.69	SBX	Approach	1,786	28	N/A	0.69
•		Depart Approach	1,983 100	28 31	N/A N/A	0.69 0.65		Depart Approach	2,086 455	28 31	N/A N/A	0.69 0.65
	EBX	Depart	350	31	N/A N/A	0.65	WBX	Depart	455 55	31	N/A N/A	0.65
Prospect Ave &		Approach	317	12.4	40	1.68		Approach	393	13.7	40	1.52
Fanita Dr	NB	Depart	507	24.1	N/A	0.99	SB	Depart	413	25.6	N/A	0.72
		Left Turn	60	5.1	80	2.27		Left Turn	220	1.7	80	2.28
	ED	Approach	160	7.7	70	2.10	WD	Approach	260	6.6	70	2.18
	EB	Depart Left Turn	430	10.1	N/A	1.95	WB	Depart Left Turn	300	22.3	N/A	1.53
		Left Turn	130	5.3 28	80 N/A	2.26 0.69		Left Turn Approach	110 613	5.3 28	80 N/A	2.26 0.69
		Approach										0.09
	NBX	Approach Depart	377 507				SBX					
	NBX EBX	Approach Depart Approach	507 290	28 31	N/A N/A	0.69 0.65	SBX	Depart Approach	413 370	28	N/A N/A	0.69 0.65

MEMORANDUM TO THE ENERGY ANALYSIS REPORT- REMOVAL OF MAGNOLIA EXTENSION

FANITA RANCH PROJECT CITY OF SANTEE SAN DIEGO COUNTY, CALIFORNIA

Prepared for:

City of Santee 10601 Magnolia Avenue Santee, California 92071

Prepared by:

LSA Associates, Inc. 1500 Iowa Avenue, Suite 200 Riverside, California 92507 (951) 781-9310

Project No. HRS1601



MEMORANDUM

At the applicant's request, the extension of Magnolia Avenue has been removed as a project feature. The following analysis reviews the conclusions of the Energy Analysis Report considering this project change. The following analysis is based on the revised traffic analysis prepared by Linscott Law & Greenspan (2020) to address the removal of Magnolia Avenue extension as a project feature. Removal of the extension as a project feature results in the shift of traffic from Magnolia Avenue to Cuyamaca Street in the near-term. The extension of Magnolia Avenue is a Mobility Element road identified in the City of Santee General Plan. The long-term (Year 2035) scenario assumes buildout of the City's General Plan, including Mobility Element roadways. Therefore, the removal of the Magnolia Avenue extension as a project feature does not result in any changes to the long-term (Year 2035) analyses.

This memorandum to the Energy Analysis Report for the Fanita Ranch Project lists the clarifications required to reflect removal of the Magnolia Avenue extension as a project feature. It should be noted that the revisions and clarifications listed in this document do not change any conclusions provided in the EIR.

The Fanita Ranch Project was evaluated based upon the assumption that Fanita Parkway, Cuyamaca Street, and Magnolia Avenue would all provide access to the Fanita Ranch Project site. An updated traffic analysis (LLG September 2020) has been prepared to revise the interim period scenario (2020 through 2034) to reflect removal of the Magnolia Avenue extension connection between Cuyamaca Street and existing Magnolia Avenue. Without the connection of Magnolia Avenue extended to Cuyamaca Street, it is expected that Project trips would instead utilize streets such as Princess Joann Road, Woodglen Vista Drive, El Nopal and Mast Boulevard. This change would result in slightly different traffic flows through the study intersections. However, while there would be a small change in traffic flow, because of the grid pattern of alternate routes used to access the site vehicle miles traveled (VMT) would remain almost the same. Therefore, there would be no change in fossil fuel use from operation compared to the EIR. Additionally, the removal of the Magnolia Avenue extension does not result in any change to the proposed land uses or project operation. Energy demand during operation and implementation of energy-reducing project features would be the same as the previous analysis. No increase in energy demand during construction would occur because construction would be slightly reduced with elimination of construction of the extension.

Additionally, the City of Santee General Plan Mobility Element includes the Magnolia Avenue extension. The long-term (Year 2035) analysis assumes General Plan buildout. Therefore, it is assumed that by Year 2035, Magnolia Avenue would connect to Cuyamaca Street and long-term operational conditions would be the same as those analyzed in the Energy Analysis Report. Therefore, impacts related to energy and fuel use remain less than significant. No revisions to the Energy Analysis report are required.

MEMORANDUM TO THE GREENHOUSE GAS ANALYSIS REPORT - REMOVAL OF MAGNOLIA EXTENSION

FANITA RANCH PROJECT CITY OF SANTEE SAN DIEGO COUNTY, CALIFORNIA

Prepared for:

City of Santee 10601 Magnolia Avenue Santee, California 92071

Prepared by:

LSA Associates, Inc. 1500 Iowa Avenue, Suite 200 Riverside, California 92507 (951) 781-9310

Project No. HRS1601







MEMORANDUM

At the applicant's request, the extension of Magnolia Avenue has been removed as a project feature. The following analysis reviews the Greenhouse Gas Analysis, considering this project change. The following analysis is based on the revised traffic analysis prepared by Linscott Law & Greenspan (2020) to address the removal of Magnolia Avenue extension as a project feature. Removal of the extension as a project feature results in the shift of traffic from Magnolia Avenue to Cuyamaca Street in the near-term. The extension of Magnolia Avenue is a Mobility Element road identified in the City of Santee General Plan. The long-term (Year 2035) scenario assumes buildout of the City's General Plan, including Mobility Element roadways. Therefore, the removal of the Magnolia Avenue extension as a project feature does not result in any changes to the long-term (Year 2035) analyses.

This memorandum to the Greenhouse Gas Analysis Report for the Fanita Ranch Project lists the clarifications required to reflect removal of the Magnolia Avenue extension as a project feature. It should be noted that the revisions and clarifications listed in this document do not change any conclusions provided in the EIR.

The Fanita Ranch Project was evaluated based upon the assumption that Fanita Parkway, Cuyamaca Street, and Magnolia Avenue would all provide access to the Fanita Ranch Project site. An updated traffic analysis (LLG September 2020) has been prepared to revise the interim period scenario (2020 through 2034) to reflect removal of the Magnolia Avenue extension connection between Cuyamaca Street and existing Magnolia Avenue. Without the connection of Magnolia Avenue extended to Cuyamaca Street, it is expected that Project trips would instead utilize streets such as Princess Joann Road, Woodglen Vista Drive, El Nopal and Mast Boulevard. The traffic impact analysis also analyzed a proposed condition that would prohibit southbound left turns from Cuyamaca Street onto Princess Joann Road, Woodglen Vista Drive, and El Nopal. These changes would result in slightly different traffic flows through the study intersections due to vehicles no longer using Magnolia Avenue directly from Cuyamaca Street. However, while there would be a small change in traffic flow, because of the grid pattern of alternate routes used to access the site vehicle miles traveled (VMT) would be de minimis. This is because while some routes would be slightly longer, others would be slightly shorter and total VMT associated with the proposed project would be de minimis. Therefore, greenhouse gas (GHG) emissions from fuel use would be the same as the EIR. Additionally, there would be no change to the proposed land uses or operation of the project, including demand for energy, water, and solid waste disposal. Elimination of the Magnolia Avenue extension and the potential restriction on left turns described above would not affect implementation of GHGreducing features. No change in project GHG emissions would occur compared to the EIR.

Additionally, the City of Santee General Plan Mobility Element includes the Magnolia Avenue extension. The long-term (Year 2035) analysis assumes General Plan buildout. Therefore, it is assumed that by Year 2035, Magnolia Avenue would connect to the proposed project site and long-term operational conditions would be exactly the same as those analyzed in the Greenhouse Gas Analysis Report. Therefore, impacts related to GHG emissions and consistency with applicable plans



remain the same as identified in the Greenhouse Gas Analysis Report and additional analysis is not required.

References

Linscott Law and Greenspan, Engineers. 2020. Fanita Ranch – No Magnolia Avenue Extension Analysis, Santee, California. September 4.



CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: September 16, 2020

To: Diane Sandman

From: Michael Hendrix

Subject: Supplemental Analysis of Emissions and Fuel Use without the Extension of Magnolia

Avenue

The Fanita Ranch Project was evaluated based upon the assumption that Fanita Parkway, Cuyamaca Street, and Magnolia Avenue would all provide access to the Fanita Ranch Project site. An updated traffic analysis (LLG 2020A) has been prepared to revise the interim period scenario (2020 through 2034) to reflect removal of the Magnolia Avenue extension connection between Cuyamaca Street and existing Magnolia Avenue. Without the connection of Magnolia Avenue extended to Cuyamaca Street, it is expected that Project trips would instead utilize streets such as Princess Joann Road, Woodglen Vista Drive, El Nopal and Mast Boulevard. The traffic impact analysis also analyzed a proposed condition that would prohibit southbound left turns from Cuyamaca Street onto Princess Joann Road, Woodglen Vista Drive, and El Nopal. These changes would result in slightly different traffic flows through the study intersections. However, while there would be a small change in traffic flow and vehicle miles traveled (VMT), because of the grid pattern of alternate routes used to access, VMT would only increase by approximately 0.67 percent¹. This is because while some routes would be slightly longer, others would be slightly shorter and total VMT associated with the proposed project would increase slightly. Additionally, there would be no change to the proposed land uses or operation of the project, including demand for energy, water, and solid waste disposal. Elimination of the Magnolia Avenue extension and the potential restriction on left turns described above would not affect implementation of GHG-reducing project features or mitigation measures.

Additionally, the City of Santee General Plan Mobility Element includes the Magnolia Avenue extension. The long-term (Year 2035) analysis assumes General Plan buildout. Therefore, it is assumed that by Year 2035, Magnolia Avenue would connect to the proposed project site and long-term operational conditions would be exactly the same as those analyzed in the Greenhouse Gas Analysis Report, Air Quality Report, and Energy Analysis Report.

The following revisions in analyses focus on the slight change in VMT generated during the interim period.

¹ Lins cott Law and Greenspan, Engineers. LLG 2020B. Fanita Ranch – Supplemental VMT Analysis, Santee, California. September 16.

REVISIONS TO ANALYSES

Greenhouse Gas Emissions

To assess this interim condition, a revised GHG analysis was completed to determine if these changes would result in a change in the significance findings of the EIR. The changes in VMT are highest in the scenario that limits southbound left-turns from Cuyamaca Street onto Princess Joann Road, Woodglen Vista Drive, and El Nopal. The results of this analysis are provided in Table 1 for the Preferred Land Use Plan with school and Table 2 for the Land Use Plan without school. The numerical changes in both tables are shown in red.

Table 1: Mitigated Operational Greenhouse Gas Emissions – Preferred Land Use Plan With School, Interim Period (2020-2034) Without Magnolia Avenue Extension and Restricted Southbound Left-Turns

				Percent			
Category	Bio-CO ₂	NBio-CO ₂	Total CO ₂	CH ₄	N ₂ O	CO₂e	of Total
Area	_	25.05	25.05	0.02	_	25.5	0.1
Energy	_	1,253.21	1,253.21	0.07	0.03	1,263.56	6.2
Mobile	_	16,922.00	16,922.00	1.07	_	16,948.76	83. <mark>2</mark>
Waste	85.04	_	85.04	5.03	_	210.68	1.0
Water	132.06	99.48	231.55	13.58	0.32	667.44	3.3
Construction (Amortized 30 yrs	_	1,242.85	1,242.85	0.21	_	1,248.07	6.1
Total	217.10	19,542.59	19,759.70	19.98	0.35	20,364.01	100.0
			100 Electric V	ehicles(MN	л GHG-6)	-400	.00
				PV Gen	eration*	-6,714	1.00
				Net Sequ	estration	-530.70	
Net Emissions							9.31
Project's Service Population							24
	1.5	1					
	1.77						
	Will the P	roject Generate	Significant Level	s of GHG Er	nissions?	No)

Source: Compiled by LSA (September 2020).

 CH_4 = methane CO_2e = carbon dioxide equivalent

 $\label{eq:signal_signal} \mbox{Bio-CO}_2 = \mbox{biological carbon dioxide} \qquad \qquad \mbox{N}_2\mbox{O} = \mbox{nitrous oxide}$

 CO_2 = carbon dioxide NBio- CO_2 = non-biological carbon dioxide

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Fable 2: Mitigated Operational Greenhouse Gas Emissions – Land Use Plan Without School, Interim Period (2020-2034) Without Magnolia Avenue Extension and Restricted Southbound Left-Turns

				Percent				
Category	Bio-CO ₂	NBio-CO ₂	Total CO ₂	CH ₄	N ₂ O	CO₂e	of Total	
Area	_	25.54	25.54	0.02	_	26.00	0.12	
Energy Consumption	_	1,229.89	1,229.89	0.07	0.03	1,240.11	5.87	
Mobile	_	17,609.31	17,727.31	1.12	_	17,755.32	83.97	
Waste	82.73	_	82.73	4.89	_	204.97	0.98	
Water	132.43	99.21	231.64	13.61	0.32	668.72	3.16	
Construction (Amortized 30 yrs)	_	1,242.85	1,242.85	0.21	_	1,248.07	5.9 <mark>0</mark>	
Total	215.16	20,206.80	20,539.96	19.92	0.35	21,143.19	100.0	
			100 El	ectric Ve	hicles	-400.0	0	
			PV Sc	lar Gene	ration	-6,661.0	00	
			Net	Sequest	ration	-530.70		
				Net Emi	ssions	13,551.49		
	Project's Service Population							
	1.62							
	1.77							
Will	the Project	Generate Sig	nificant Levels of (GHG Emis	sions?	No		

Source: Compiled by LSA (September 2020).

 CH_4 = methane

Bio-CO₂ = biological carbon dioxide

 CO_2 = carbon dioxide

CO₂e = carbon dioxide equivalent

 N_2O = nitrous oxide

NBio-CO₂ = non-biological carbon dioxide

As shown in Tables 1 and 2, while the interim period (2020-2034) results in slightly higher on-road emissions, the numerical increase was small and did not exceed the thresholds. Therefore, impacts related to GHG emissions and consistency with applicable plans remain the same as identified in the Greenhouse Gas Analysis Report and EIR. Additional analysis is not required.

Long-Term Operational Air Quality

The elimination of the Magnolia Avenue extension does not result in any change in proposed land uses and therefore does not result in any change in operation or trip generation other than movements within intersections and a slight increase in VMT. An analysis of CO Hotspots was previously conducted and determined that the changes would not result in significant impacts. Criteria pollutant emissions from short-term construction would be reduced compared to the previous analysis, but elimination of the Magnolia Avenue extension does not affect required construction in the remainder of the project area. The revised traffic analysis notes that the change in trip distribution as a result of elimination of the Magnolia Avenue extension results in approximately a 0.67 percent increase in project VMT (LLG 2020).

To assess this interim condition, a revised long-term criteria pollutant emissions analysis was completed to determine if these changes would result in a change in the significance findings of the EIR. The changes in VMT are highest in the scenario that limits southbound left-turns from

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Cuyamaca Street onto Princess Joann Road, Woodglen Vista Drive, and El Nopal. The results of this analysis are provided in Table 3 for the Preferred Land Use Plan with school and Table 4 for the Land Use Plan without school. The numerical changes in both tables are shown in red.

Table 3: Mitigated Regional Operational Emissions – Preferred Land Use Plan With School, Interim Period (2020-2034) Without Magnolia Avenue Extension, Restricted Southbound Left-Turns

	Pollutant Emissions, lbs/day						
Source	VOC	NOx	со	SOx	PM ₁₀	PM _{2.5}	
Area ¹	120.49	2.23	184.34	<0.01	1.01	1.01	
Energy ²	0.48	4.36	3.66	0.03	0.33	0.33	
Mobile ³	15.36	58.82	235.76	1.11	135.97	36.73	
Total Daily Project Emissions	136.33	65.41	423.76	1.15	136.40	38.07	
Total Annual Project Emissions (tons)	24.38	11.92	57. <mark>17</mark>	0.20	24.10	6.60	
Daily County Thresholds	75	250	550	250	100	55	
Annual County Thresholds (tons)	13.7	40	100	40	15	10	
Significant?	Yes	No	No	No	Yes	No	

Source: Compiled by LSA (September 2020).

Note: Numbers in table may not appear to add up correctly due to rounding of all numbers.

CO = carbon monoxide PM_{10} = particulate matter less than or equal to 10 microns in size

lbs/day = pounds per day VOC = volatile organic compound NOx = nitrogen oxides County = County of San Diego

 $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in SOx = sulfur oxides

size

¹ Area source includes architectural coatings, consume products, and landscaping equipment.

² Energy source includes natural gas consumption.

³ Mobile source includes project-generated vehicle trips.

Table 4: Mitigated Regional Operational Emissions – Land Use Plan Without School Interim Period (2020-2035) Without Magnolia Avenue Extension, Restricted Southbound Left-Turns

	Pollutant Emissions, Ibs/day						
Source	VOC	NOx	со	SOx	PM ₁₀	PM _{2.5}	
Area ¹	121.08	2.27	187.97	<0.01	1.03	1.03	
Energy ²	0.47	4.24	3.56	0.03	0.32	0.32	
Mobile ³	15.92	60.59	244.37	1.16	141.16	38.13	
Total Project Emissions		67.0					
	137.47	1	435.90	1.19	142.51	39.48	
Annual Total Project Emissions (tons)	24.59	12.3 7	59.30	0.21	25.08	6.90	
Daily County Thresholds	75	250	550	250	100	55	
Annual County Thresholds (tons)	13.7	40	100	40	15	10	
Significant?	Yes	No	No	No	Yes	No	

Source: Compiled by LSA (September 2020).

Note: Numbers in table may not appear to add up correctly due to rounding of all numbers.

CO = carbon monoxide

lbs/day = pounds per day NOx = nitrogen oxides

PM_{2.5} = particulate matter less than or equal to 2.5 microns in size

 PM_{10} = particulate matter less than or equal to 10 microns in size

VOC = volatile organic compound County = County of San Diego

SOx = sulfur oxides

As shown in Tables 3 and 4, while the interim period (2020-2034) results in slightly higher on-road emissions, the numerical increase was small and did not change the significance findings in the tables. Therefore, impacts related to air quality and consistency with applicable plans remain the same as identified in the Air Quality Analysis Report and EIR. Additional analysis is not required.

Energy and Fuel Use

This change eliminating the extension of Magnolia Avenue to the proposed project site would result in slightly different traffic flows through the study intersections. However, while there would be a small change in traffic flow, because of the grid pattern of alternate routes used to access the site, VMT would increase by approximately 0.67 percent. An analysis focused on the resulting change in fossil fuel use from operation of the proposed project during the interim period was conducted and shown in Table 5. The numerical changes in the table are shown in red.

Table 5: Annual Petroleum Demand of the Proposed Project, Interim Period (2020-2034)
Without Magnolia Avenue Extension, Restricted Southbound Left-Turns

So	enario	With School	Without School
Interim Period Project	Gasoline (gallons) ¹	2,266,359	2,320,935
Buildout Without Mitigation	Diesel (gallons) ²	430,465	440,831
Measures	Energy (MMBtu)	332,210	340,210

¹ Area source includes architectural coatings, consume products, and landscaping equipment.

² Energy source includes natural gas consumption.

³ Mobile source includes project-generated vehicle trips.

	Percent of State 2018 Consumption	0.01	0.01
	Gasoline (gallons) ¹	1,683,366	1,763,883
	Diesel (gallons) ²	319,733	335,026
Interim Period Project	Energy (MMBtu)	246,778	258,556
Buildout With Mitigation Measures (MM AIR-5, AIR-6,	Percent of State 2018 Consumption	0.01	0.01
and AIR-7, AIR-10)	Energy Reduction from Buildout Without Mitigation Measures (MMBtu)	85,432	81,654

Source: EMFAC2017. Compiled by LSA (September 2020). Note: ¹ One gallon of gasoline is equivalent to 120,476 Btu.

MMBtu = million British Thermal Units

The proposed project is anticipated to generate a service population of approximately 8,424 people under the Preferred Land Use Plan with School, or 8,345 people under the Land Use Plan without School, which is equivalent to approximately 0.02 percent of the State's total population. Therefore, as shown in Table 5, the project's petroleum consumption per person during the interim period (2020-2034) would be less than the State per capita average, and would not result in significant environmental impact due to wasteful, inefficient energy use. Note that while the numeric values changed in Table 5, the significance findings for the interim period remains the same as those shown in the Energy Analysis Report and EIR. No additional analysis is required.

References

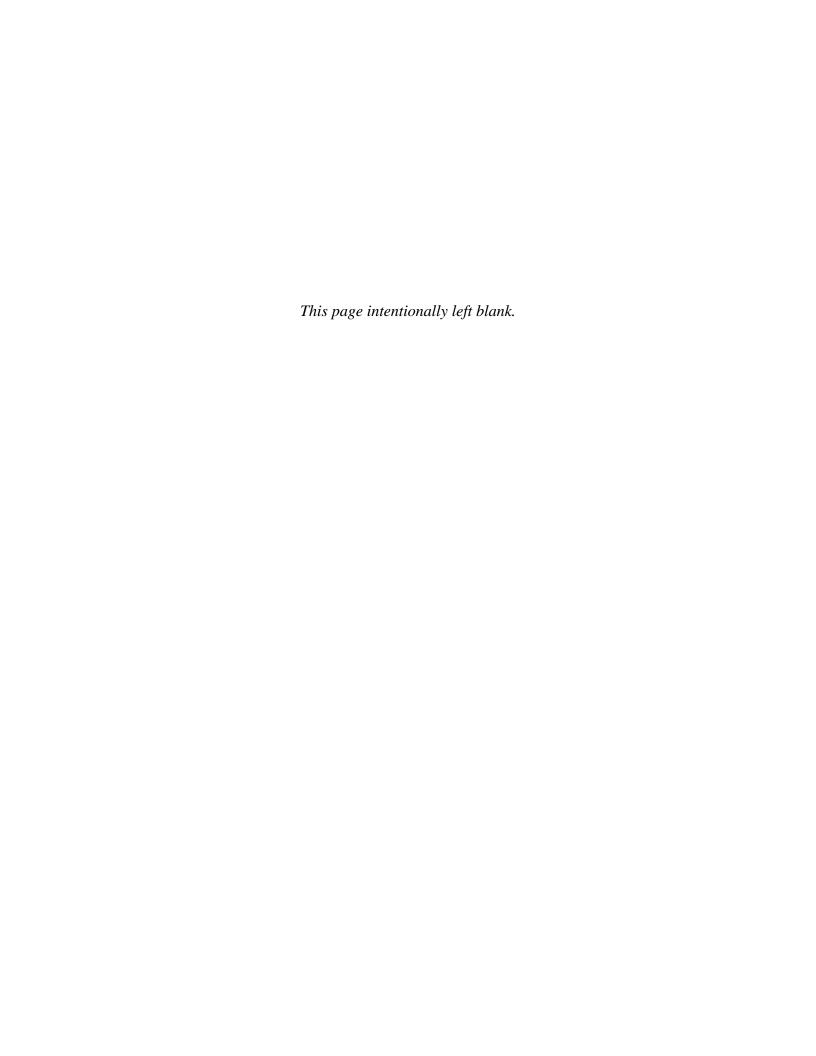
Linscott Law and Greenspan, Engineers. LLG 2020A. Fanita Ranch – No Magnolia Avenue Extension Analysis, Santee, California. September 4.

LLG 2020B. Fanita Ranch – Supplemental VMT Analysis, Santee, California. September 16.

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² One gallon of diesel is equivalent to 137,452 Btu.

Attachment 4. Fanita Ranch – No Magnolia Avenue Extension Analysis Traffic Memorandum and Fanita Ranch Supplemental VMT Memorandum





September 9, 2020

Marni Borg City of Santee 10601 Magnolia Avenue Santee, CA 92071

LLG Reference: 3-15-2462

Subject: Fanita Ranch – No Magnolia Avenue Extension Analysis

City of Santee, CA

Dear Ms. Borg:

Linscott, Law & Greenspan, Engineers (LLG) has prepared the following traffic letter report to evaluate the potential transportation impacts on the local circulation system for the Fanita Ranch Project (Project) without the extension of Magnolia Avenue between future Cuyamaca Street and its existing terminus just north of Princess Joann Road.

This letter report includes the following:

- Introduction
- Summary of Findings
- Network Conditions Description
- Traffic Volumes
- Capacity Analyses
 - Full Access to Cuyamaca Street
 - Prohibited Southbound Left-Turns from Cuyamaca Street
- Vehicle Miles Traveled
- Summary & Conclusions

The analysis in this letter report is based on the preferred Project, referred to as "With School." The "Without School" alternative generates 0.66% more traffic (26,272 vs. 26,445 ADT). Insofar as the trip generation is nearly identical, the results of this analysis apply to both the "With" and "Without School" alternatives.

The analysis herein focuses on the Existing, Existing + Project, Existing + Cumulative Projects, and Existing + Cumulative Projects + Project scenarios. A long-term analysis is not necessary since Magnolia Avenue will remain on the City's Mobility Element to be constructed at a later date.

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INTRODUCTION

The Fanita Ranch Transportation Study contained in the Environmental Impact Report (EIR) assumes the connections of Fanita Parkway, Cuyamaca Street, and Magnolia Avenue would all provide access to the Fanita Ranch Project site. An analysis was conducted to determine the changes to the Level of Service results without the connection of Magnolia Avenue to/from the Project site. Without the connection of Magnolia Avenue extended to Cuyamaca Street, it is expected that Project trips would instead utilize streets such as Princess Joann Road, Woodglen Vista Drive, El Nopal and Mast Boulevard. An assessment of the potential for any changes in Vehicle Miles Traveled (VMT) without the connection of Magnolia Avenue was also conducted.

SUMMARY OF FINDINGS

Without the construction of the Magnolia Avenue Extension, one roadway segment would experience a direct impact instead of a cumulative impact (Cuyamaca Street between Woodglen Vista Drive and El Nopal). The mitigation recommended in the EIR of improving Cuyamaca Street between Woodglen Vista Drive and El Nopal to four lanes would fully mitigate this impact. Therefore, no new impacts would occur by deleting the extension of Magnolia Avenue and the previously recommended mitigation would be unchanged.

The VMT analysis and conclusion would not change as a result of the deletion of the Magnolia Avenue extension. For the reasons explained herein, the grid-like pattern of the north/south corridors of Cuyamaca Street and Magnolia Street intersecting with the east/west roadways of Princess Joann Road, Woodglen Vista Drive, El Nopal, and Mast Boulevard would result in similar distances traveled between the Project site and destinations to the south.

NETWORK CONDITIONS

The Project proposes to construct Cuyamaca Street from its current terminus at Chaparral Drive to connect to the Project site as a Project Design Feature. Based on the analysis presented in the EIR Traffic Study, Cuyamaca Street from the Project Site to Chaparral Drive will be constructed as a two-lane divided roadway (Two-Lane Parkway). Proposed improvements to Cuyamaca Street further south, from Chaparral Drive to Woodglen Vista Drive, will increase the capacity from two to four lanes as addressed in the EIR Traffic Study. This segment will transition from two to four lanes as a Four-Lane Major Arterial. The respective LOS E capacities for Two-Lane Parkway (15,000 ADT) and Four-Lane Major Arterial (40,000 ADT) segments were used in the "Plus Project' analyses provided in this letter report.

In the forthcoming analysis, Magnolia Avenue was assumed to not be constructed from the future Cuyamaca Street extension to its existing terminus just north of Princess Joann Road. Without this connection, two network scenarios were analyzed. The first would allow full access movements from Cuyamaca Street to Princess Joann



Road, Woodglen Vista Drive, and El Nopal connecting to Magnolia Avenue. The second condition would prohibit southbound left-turn movements from Cuyamaca Street to these local streets.

The analyses provided in this report evaluate the operations specific to the Cuyamaca Street and Magnolia Avenue corridors, where a change in Project trips would occur. The locations affected are listed on the following page:

Intersections

Street Segments

1. Princess Joann Road / Cuyamaca Street (future)	Princess Joann Road
2. Princess Joann Road / Magnolia Avenue	Cuyamaca Street to Magnolia Avenue
4. Woodglen Vista Drive / Cuyamaca Street	Woodglen Vista Drive
5. Woodglen Vista Drive / Magnolia Avenue	2. Cuyamaca Street to Magnolia Avenue
6. El Nopal / Cuyamaca Street	El Nopal
7. El Nopal / Magnolia Avenue	3. Cuyamaca Street to Magnolia Avenue
12. Beck Drive / Cuyamaca Street	Mast Boulevard
13. 2 nd Street / Magnolia Avenue	12. Cuyamaca Street to Magnolia Avenue
14. Carefree Drive / Magnolia Avenue	Cuyamaca Street
25. Mast Boulevard / Cuyamaca Street	42. Project Site to Magnolia Avenue (future)
26. Mast Boulevard / Park Center Drive	43. Magnolia Avenue to Princess Joann Road (future)
27. Mast Boulevard / Magnolia Avenue	44. Princess Joann Road to Chaparral Drive (future)
	45. Chaparral Drive to Woodglen Vista Drive
	46. Woodglen Vista Drive to El Nopal
	47. El Nopal to Mast Boulevard
	Magnolia Avenue
	54. Cuyamaca Street to Princess Joann Road (future)
	55. Princess Joann Road to Woodglen Vista Drive
	56. Woodglen Vista Drive to El Nopal
	57. El Nopal to Mast Boulevard

TRAFFIC VOLUMES

Without the connection of Magnolia Avenue, Project trips on Cuyamaca Street destined to Magnolia Avenue would divert to Magnolia Avenue via Princess Joann Road, Woodglen Vista Drive, El Nopal, and Mast Boulevard which could result in more trips on these streets. The Existing + Project and Existing + Cumulative Projects



+ Project conditions were analyzed for each alternative, without the connection of Magnolia Avenue.

Without the Magnolia Avenue extension, traffic will utilize Princess Joann Road, Woodglen Vista Drive, El Nopal, and Mast Boulevard to reach destinations southeast of the Project site. It is expected that 10% of Fanita Ranch traffic will use Princess Joann Road, with 5% on Woodglen Vista Drive and El Nopal. Princess Joann Road is expected to attract a higher amount of traffic since it provides a shorter distance between Cuyamaca Street and Magnolia Avenue. It should be noted that Appendix Y of the EIR Traffic Study contains an assessment of the timing for the Magnolia Avenue Extension, and was not intended as a cumulative capacity analysis of the potentially affected roadways. The assumptions for the amount of traffic that would use Princess Joann Road, Woodglen Vista Drive, and El Nopal have been updated in this letter report to reflect the most accurate estimate of distribution based on trip lengths and travel time. The deletion of Magnolia Avenue will not change the anticipated trip distribution on Fanita Parkway since Magnolia Avenue is located about two miles away. In other words, no traffic destined to Magnolia Avenue would choose to use Fanita Parkway if Magnolia Avenue was not constructed given the out of direction travel that would occur. Since no additional traffic would use Fanita Parkway, this roadway is not shown on the figures provided in this letter report as the Project distribution to Fanita Parkway remains unchanged.

The Project distribution without the connection of Magnolia Avenue with full access movements from Cuyamaca Street is depicted on *Figure 1*. *Figure 2* shows the Project traffic volumes without this connection.

Figure 3 and Figure 4 depict the Existing + Project and Existing + Project + Cumulative Projects traffic volumes without the connection of Magnolia Avenue, respectively.

The Project distribution without the connection of Magnolia Avenue prohibiting southbound left-turning movements from Cuyamaca Street is depicted on *Figure 5*. *Figure 6* shows the Project traffic volumes without this connection with prohibited turning movements.

Figure 7 and Figure 8 depict the traffic volumes for the Existing + Project and Existing + Project + Cumulative Projects conditions without the connection of Magnolia Avenue and prohibiting southbound left-turning movements, respectively.

All figures are provided at the end of this letter report.



No Magnolia Avenue Extension Allowing Full Access - Capacity Analysis

<u>Existing + Project Peak Hour Intersections</u>

Table 1 summarizes the Existing + Project intersection operations without the Magnolia Avenue Extension, allowing full access movements to local streets. As seen in *Table 1*, the following intersections are calculated to operate at LOS E or F with the addition of Project traffic:

- Intersection #4. Woodglen Vista Drive / Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection #6. El Nopal / Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection #12. Beck Drive / Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection #25. Mast Boulevard / Cuyamaca Street LOS E (AM peak hour)

Based on the established significance criteria, <u>four (4) significant direct impacts</u> were calculated with the addition of Project traffic at the study area locations above since the Project-induced change in delay is greater than 2.0 seconds for LOS E or F operating intersections.

These impacts are also calculated to occur under the proposed Project (i.e. "With Magnolia Avenue Extension") condition analyzed in the EIR.

Attachment A contains the Existing + Project (No Magnolia Avenue Extension) peak hour intersection calculation worksheets. All attachments are provided at the end of this letter report.

Existing + Cumulative Projects + Project Peak Hour Intersections

Table 1 summarizes the Existing + Cumulative Projects + Project intersection operations without the Magnolia Avenue Extension, allowing full access movements to local streets. As seen in *Table 1*, the following intersections are calculated to operate at LOS E or F with the addition of cumulative traffic and Project traffic:

- Intersection #4. Woodglen Vista Drive / Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection #6. El Nopal / Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection #12. Beck Drive / Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection #25. Mast Boulevard / Cuyamaca Street LOS E/F (AM/PM peak hours)



Based on the established significance criteria, <u>four (4) significant direct impacts</u> were calculated with the addition of Project traffic at the study area locations above since the Project-induced change in delay is greater than 2.0 seconds for LOS E or F operating intersections.

These impacts are also calculated to occur under the proposed Project (i.e. "With Magnolia Avenue Extension") condition analyzed in the EIR.

Attachment B contains the Existing + Cumulative Projects + Project (No Magnolia Avenue Extension) peak hour intersection calculation worksheets.

Existing + Project Daily Segment Operations

Table 2 summarizes the Existing + Project street segment operations without the Magnolia Avenue Extension, allowing full access movements to local streets. As seen in *Table 2*, the following street segments are calculated to operate at LOS E or F with the addition of Project traffic:

- Segment #41. Cuyamaca Street from Project Site to Magnolia Avenue LOS E
- Segment #42. Cuyamaca Street from Magnolia Avenue to Princess Joann Road – LOS E
- Segment #45. Cuyamaca Street from Woodglen Vista Drive to El Nopal LOS E
- Segment #46. Cuyamaca Street from El Nopal to Mast Boulevard LOS F

Based on the established significance criteria, <u>two (2) significant direct impacts</u> were calculated with the addition of Project traffic at study area locations above since the Project-induced change in V/C is greater than 0.02 for LOS E or F operating street segments. The significant impact on Segment #45 is also calculated to occur with the connection of Magnolia Avenue analyzed in the EIR under Year 2035 conditions. The significant impact on Segment #46 is also calculated to occur with the connection of Magnolia Avenue analyzed in the EIR under near-term conditions.

Segments #41 and #42 are not deemed to be significant impacts as the intersections operations bookending each segment and the peak hour arterial analyses are calculated to operate at LOS B or better based on standards of practice in the industry and per methodologies for calculating LOS as described in the Highway Capacity Manual (HCM). Further details on this approach to evaluating street segment operations using peak hour intersection results are provided later on in this letter report.



<u>Existing + Cumulative Projects + Project Daily Segment Operations</u>

Table 2 summarizes the Existing + Cumulative Projects + Project street segment operations without the Magnolia Avenue Extension, allowing full access movements to local streets. As seen in *Table 2*, the following street segments are calculated to operate at LOS E or F with the addition of Project traffic:

- Segment #41. Cuyamaca Street from Project Site to Magnolia Avenue LOS E
- Segment #42. Cuyamaca Street from Magnolia Avenue to Princess Joann Road – LOS E
- Segment #45. Cuyamaca Street from Woodglen Vista Drive to El Nopal LOS E
- Segment #46. Cuyamaca Street from El Nopal to Mast Boulevard LOS F

Based on the established significance criteria, <u>two (2) significant direct impacts</u> were calculated with the addition of Project traffic at study area locations above since the Project-induced change in V/C is greater than 0.02 for LOS E or F operating street segments. The significant impact on Segment #45 is also calculated to occur with the connection of Magnolia Avenue analyzed in the EIR under Year 2035 conditions. The significant impact on Segment #46 is also calculated to occur with the connection of Magnolia Avenue analyzed in the EIR under near-term conditions.

Segments #41 and #42 are not deemed to be significant impacts as the intersections operations bookending each segment and the peak hour arterial analyses are calculated to operate at LOS B or better based on standards of practice in the industry and per methodologies for calculating LOS as described in the Highway Capacity Manual (HCM). Further details on this approach to evaluating street segment operations using peak hour intersection results are provided below.

Peak Hour Arterial Analysis

Using the volume-to-capacity (V/C) methodology, the section of Cuyamaca Street between the first Project on-site roundabout at Street "A"/Street "Y" and Princess Joann Road is forecasted to operate at LOS E under Existing + Project and Existing + Project + Cumulative Project conditions. The LOS E threshold for a Two-Lane Parkway lies between 13,000 and 15,000 ADT, and this segment of Cuyamaca Street has a forecast volume of 13,920 ADT

Volume-to-capacity street segment analysis lacks the precision of peak hour intersection analysis, which takes into account more detailed traffic flow patterns, intersection controls, and roadway features. Peak hour analysis also represents the highest accumulation of traffic volumes throughout a 24-hour period and analyzes peak commute periods. The intersection calculations are based on complex



computerized traffic models utilizing methodology from the HCM that has been refined over decades. By contrast, the V/C segment analysis is comprised of two variables; volume obtained from a 24-hour count, and capacity based on the City's published guidelines, which necessarily present a homogenized, "one-size fits all" summary of theoretical capacities for roads based generally on the number of lanes and presence of parking maneuvers. Between these two methods, the peak hour analysis is the superior and more accurate method to determine actual roadway calculations.

The Cuyamaca Street intersections with Princess Joann Road and Woodglen Vista Drive would be improved from stop controls to traffic signals as part of the Project mitigation detailed in the EIR. *Table 3* shows the results of the mitigated intersection LOS results without the connection of the Magnolia Avenue extension. Based on the computed intersection analysis, the signalized intersections will operate at LOS B or better, and thus the roadway would be expected to operate very efficiently since LOS B is calculated at the intersections on either end of each segment with the proposed mitigation.

Table 4 summarizes the Existing + Cumulative Projects + Project peak hour arterial operations of Cuyamaca Street without the Magnolia Avenue Extension, allowing full access movements to local streets. The section of Cuyamaca Street from the Project Site to Woodglen Vista Drive serves as an access route to a major roadway (Mast Boulevard) ultimately connecting to daily commuter routes, which classifies as a Class III Arterial, per the *Highway Capacity Manual (HCM)*. Table 4 shows travel speeds (mph) in both directions on Cuyamaca Street along this section operating at LOS B or better.

Attachment C contains the Existing + Cumulative Projects + Project (No Magnolia Avenue Extension) with EIR mitigation intersection and peak hour arterial analysis worksheets.

Mitigated Operations

Implementation of the mitigation measures proposed in the EIR Traffic Study would fully mitigate the impacts associated with the deletion of the Magnolia Avenue Extension project.

Table 5 shows the mitigated operations for intersections and street segments applying the improvements from the EIR Traffic Study.

Attachment C contains the post-mitigation intersection analysis worksheets.



Mitigation Phasing

Utilizing the methodology in the EIR, an analysis was conducted at each of the impacted locations with the deletion of the Magnolia Avenue Extension to determine the number of units that could be built before a significant Project impact would occur.

Table 6 summarizes the number of equivalent dwelling units (EDUs) that may be built and occupied, before each mitigation measure is required at intersections and street segments.

Attachment D contains the intersection analysis sheets associated with the threshold operations identified for each intersection.



TABLE 1 INTERSECTION OPERATIONS (No Magnolia Avenue Extension – Full Access)

Intersection	Jur.	Control Type	Peak Hour	Exist	Existing		Project	Δ° Delay	Sig?	EIR Impact w/ Magnolia Avenue	Existing + Cumulative Projects		Cumu Proje	Existing + Cumulative Projects + Project		Sig?	EIR Impact w/ Magnolia Avenue
				Delay ^a	LOS b	Delay	LOS			Extension? d	Delay	LOS	Delay	LOS			Extension? d
Princess Joann Road / Cuyamaca Street (future intersection)	Santee	DNE/ MSSC	AM PM	_		11.4 21.6	B C	_	No	No			11.4 21.6	B C	_ _	No	No
2. Princess Joann Road / Magnolia Avenue	Santee	AWSC	AM PM	7.6 7.9	A A	8.9 10.3	A B	1.3 2.4	No	No	7.7 7.9	A A	9.0 10.3	A B	1.3 2.4	No	No
4. Woodglen Vista Drive / Cuyamaca Street	Santee	AWSC	AM PM	8.9 9.0	A A	80.2 >100.0	F F	71.3 >2.0	Yes	Yes	8.9 9.1	A A	81.9 >100.0	F F	73.0 >2.0	Yes	Yes
5. Woodglen Vista Drive / Magnolia Avenue	Santee	Signal	AM PM	11.9 10.7	B B	14.9 11.6	B B	3.0 0.9	No	No	12.0 10.7	B B	15.0 11.6	B B	3.0 0.9	No	No
6. El Nopal / Cuyamaca Street	Santee	AWSC	AM PM	12.0 11.8	B B	>100.0 >100.0	F F	>2.0 >2.0	Yes	Yes	12.3 12.1	B B	>100.0 >100.0	F F	>2.0 >2.0	Yes	Yes
7. El Nopal / Magnolia Avenue	Santee	Signal	AM PM	23.9 18.3	C B	27.8 22.3	C C	3.9 4.0	No	No	24.3 18.6	C C	28.4 22.8	C C	4.1 4.2	No	No
12. Beck Drive / Cuyamaca Street	Santee	AWSC	AM PM	22.4 13.3	C B	>100.0 >100.0	F F	>2.0 >2.0	Yes	Yes	24.1 13.7	C B	>100.0 >100.0	F F	>2.0 >2.0	Yes	Yes
13. 2 nd Street / Magnolia Avenue	Santee	Signal	AM PM	8.0 6.6	A A	8.0 6.7	A A	0.0 0.1	No	No	8.2 6.7	A A	8.2 6.8	A C	0.0 0.1	No	No
14. Carefree Drive / Magnolia Avenue	Santee	Signal	AM PM	17.4 9.2	B A	20.3 9.6	C A	2.9 0.4	No	No	17.8 9.3	B A	21.0 9.7	C A	3.2 0.4	No	No
25. Mast Boulevard / Cuyamaca Street	Santee	Signal	AM PM	36.9 33.3	D C	72.4 50.7	E D	35.5 17.4	Yes	Yes	38.0 33.7	D D	75.4 53.6	E D	37.4 19.9	Yes	Yes
26. Mast Boulevard / Park Center Drive	Santee	Signal	AM PM	7.1 8.7	A A	7.2 8.7	A A	0.1 0.0	No	No	7.1 8.9	A A	7.1 8.9	A A	0.0 0.0	No	No
27. Mast Boulevard / Magnolia Avenue	Santee	Signal	AM PM	32.9 26.8	C C	37.5 28.6	D C	4.6 1.8	No	No	36.6 28.1	D D	41.6 30.6	D C	5.0 2.5	No	No

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service
- c. Δ denotes the increase in delay due to Project.
- d. See *Tables 8–1* and *10–1* in the EIR traffic study (EIR Appendix N) for the "with Magnolia Avenue Extension" analysis.

- General Notes:
 1. Sig = Significant impact, yes or no.
 2. Jur. = Jurisdiction

SIGNALIZE	ED	UNSIGNALIZED							
DELAY/LOS THRE	SHOLDS	DELAY/LOS THRESHOLDS							
Delay	LOS	Delay	LOS						
$0.0 \le 10.0$	A	$0.0 \le 10.0$	A						
10.1 to 20.0	В	10.1 to 15.0	В						
20.1 to 35.0	C	15.1 to 25.0	C						
35.1 to 55.0	D	25.1 to 35.0	D						
55.1 to 80.0	E	35.1 to 50.0	E						
≥ 80.1	F	≥ 50.1	F						



Table 2 Segment Operations (No Magnolia Avenue Extension – Full Access to/from Cuyamaca Street)

		Existing				· · ·						EIR Impact w/		Existing +		I	Existing +					EIR Impact w/
Street Segment	Jur.	Capacity		Existing		Exis	sting + Pro	oject	Project Volumes	Δ e V/C	Sig?	Magnolia Avenue		ulative Pr		Cumulativ		+ Project	Project	Δ ^e	Sig?	Magnolia Avenue
		(LOS E) a	ADT b	LOS c	V/C d	ADT	LOS	V/C	volumes	V/C	Ü	Extension? f	ADT	LOS	V/C	ADT	LOS	V/C	Volumes	V/C)	Extension? f
Princess Joann Road																						
1. Cuyamaca St to Magnolia Ave	Santee	8,000	530	A	0.066	3,160	В	0.395	2,630	0.329	No	No	685	A	0.086	3,315	В	0.414	2,630	0.328	No	No
Woodglen Vista Drive																						
2. Cuyamaca St to Magnolia Ave	Santee	8,000	1,700	A	0.213	3,010	В	0.376	1,310	0.163	No	No	1,759	A	0.220	3,069	В	0.384	1,310	0.164	No	No
El Nopal																						
3. Cuyamaca St to Magnolia Ave	Santee	8,000	3,780	С	0.473	5,090	D	0.636	1,310	0.163	No	No	3,886	C	0.486	5,196	D	0.650	1,310	0.164	No	No
Mast Boulevard																						
12. Cuyamaca St to Magnolia Ave	Santee	40,000	18,490	В	0.462	19,280	В	0.482	790	0.020	No	No	19,616	В	0.490	20,406	В	0.510	790	0.020	No	No
Cuyamaca Street																						
41. Project Site to Magnolia Ave ^g	Santee	DNE/ 15,000	_	_	_	13,920	E h	0.928	13,920		No h	No ^h	_	_	_	13,920	E h	1.000	13,920	_	No h	No ^h
42. Magnolia Ave to Princess Joann Rd ^g	Santee	DNE/ 15,000	_	_	_	13,920	E h	0.928	13,920	_	No h	No ^h	_	_	_	13,920	E h	1.000	13,920	_	No h	No h
43. Princess Joann Rd to Chaparral Dr ^g	Santee	DNE/ 15,000	_	_	_	11,300	D	0.753	11,300	_	No	No	_	_	_	11,300	D	1.000	11,300	_	No	No
44. Chaparral Dr to Woodglen Vista Dr ⁱ	Santee	15,000/ 40,000	670	A	0.045	11,970	A i	0.299	11,300	0.254	No	No	683	A	0.fc/046	11,983	A i	0.300	11,300	0.283	No	No
45. Woodglen Vista Dr to El Nopal	Santee	15,000	4,360	A	0.291	14,340	E	0.956	9,980	0.665	Yes	Yes ^j	4,472	A	0.298	14,452	E	0.963	9,980	0.665	Yes	Yes ^j
46. El Nopal to Mast Blvd	Santee	15,000	8,860	C	0.591	17,530	F	1.169	8,670	0.578	Yes	Yes	9,173	C	0.612	17,843	F	1.190	8,670	0.578	Yes	Yes
Magnolia Avenue																						
54. Cuyamaca St to Princess Joann Rd	Santee	DNE		_	_	_			_		_	_	_	_	_	_	_	_	-	_	_	_
55. Princess Joann Rd to Woodglen Vista Dr	Santee	40,000	2,020	A	0.051	4,650	A	0.116	2,630	0.065	No	No	2,204	A	0.055	4,834	A	0.121	2,630	0.066	No	No
56. Woodglen Vista Dr to El Nopal	Santee	40,000	9,030	A	0.226	12,970	A	0.324	3,940	0.098	No	No	9,415	A	0.235	13,355	A	0.334	3,940	0.099	No	No
57. El Nopal to Mast Blvd	Santee	40,000	13,690	A	0.342	16,320	В	0.408	2,630	0.066	No	No	14,291	A	0.357	16,921	В	0.423	2,630	0.066	No	No

Footnotes:

- Capacities based on City of Santee Roadway Classification & LOS table.
- b. Average Daily Traffic
- c. Level of Service
- d. Volume to Capacity ratio
- e. Δ denotes a Project-induced increase in the Volume to Capacity ratio
 f. See Tables 8–2 and 10–2 in the EIR traffic study (EIR Appendix N) for the "with Magnolia Avenue Extension" analysis.
- g. The 15,000 ADT capacity for the existing sections of Cuyamaca Street was continued along this future section providing access to the Project.
- h. The intersection operations at both ends of the Cuyamaca Street road segment between the Project Site and Woodglen Vista Drive report LOS C or better operations with the mitigation proposed by the Project. Therefore, adequate operations are expected along this roadway. See
- i. As part of the Project Design Features for this Project, Cuyamaca Street from Chaparral Drive to Woodglen Vista Drive is proposed to be improved to four-lane Major Road standards. Therefore, an LOS E capacity of 40,000 ADT was used in the "Plus Project" analyses.
- j. Without the connection of the Magnolia Avenue Extension, this segment impact would be a direct impact, as identified in the EIR traffic study. The mitigation recommended in the EIR traffic

- 1. Sig = Significant impact, yes or no.
- 2. DNE, "—" = Does not exist.



TABLE 3 MITIGATED INTERSECTION OPERATIONS (NO MAGNOLIA AVENUE EXTENSION – FULL ACCESS TO/FROM CUYAMACA STREET)

Intersection	Existing + Cumulative Projects + Project										
Intersection	Control Type	Peak Hour	Delay ^a	LOS b							
A. Cuyamaca Street/ Street A/ Street Y	Round- about	AM PM	11.7 24.8	B C							
Cuyamaca Street/ Princess Joann Road	Signal	AM PM	7.8 12.7	A B							
4. Cuyamaca Street/ Woodglen Vista Road	Signal	AM PM	11.3 10.3	B B							

Footnotes:

a. Average delay expressed in seconds per vehicle.

b. Level of Service

SIGNALIZEI)											
DELAY/LOS THRESHOLDS												
Delay	LOS											
$0.0 \le 10.0$	A											
10.1 to 20.0	В											
20.1 to 35.0	C											
35.1 to 55.0	D											
55.1 to 80.0	E											
≥ 80.1	F											



TABLE 4 PEAK HOUR ARTERIAL ANALYSIS (NO MAGNOLIA AVENUE EXTENSION – FULL ACCESS TO/FROM CUYAMACA STREET)

Dir.	Dir.	Roadway Classification with	Existing + Cumulative Projects + Project						
DII.	Dii.	EIR Improvements	A	M	PM				
			Speed ^a	LOS b	Speed	LOS			
	Woodglen Vista Dr to Chaparral Dr	4-ln w/ Raised Median	29.0	В	28.6	В			
NB	Chaparral Dr to Princess Joann Rd	2-ln w/ Raised Median	29.0	В	28.6	В			
	Princess Joann Rd to Project Site (Street "Y")	2-ln w/ Raised Median	31.2	A	29.0	В			
	Project Site (Street "Y") to Princess Joann Rd	2-ln w/ Raised Median	33.1	A	33.5	A			
SB	Princess Joann Rd to Chaparral Dr	2-ln w/ Raised Median	33.1	A	33.5	A			
	Chaparral Dr to Woodglen Vista Dr	4-ln w/ Raised Median	27.2	В	30.7	A			

Foo	otnotes:		SPEED (MI	PH) / LOS T	HRESHOL	DS	
a.	Speed measured in miles per hour.	LOS	Class I	Class II	Class III	Class IV	
b.	LOS = Level of Service	A	>42	>35	>30	>25	
Ger	neral Notes	В	>34-42	>28-35	>24-30	>19-25	
1		C	>27-34	>22-28	>18-24	>13-19	
1.	Dir. = Direction	D	>21-27	>17-22	>14-18	>9-13	
2.	NB = Northbound	E	>16-21	>13-17	>10-14	>7-9	
3.	SB = Southbound	F	< 16	< 13	< 10	< 7	



TABLE 5 POST-MITIGATION ANALYSIS

(No Magnolia Avenue Extension - Full Access to/from Cuyamaca Street)

			Control		Pre-	Mitigation	Operation	ıs ^c	D / EID	78 AT 1.1	
EIR	Intersection	Jur.	Type: Pre/Post	Peak Hour	Without	Project	With Pr	oject	Post-EIR	Mitigation	
MM#			Mitigation	0,2 050		LOS b	Delay	LOS	Delay	LOS	
TRA-4	#4. Woodglen Vista Drive/	Santee	AWSC/	AM	8.9	A	81.9	F	11.3	В	
TRA-4	Cuyamaca Street	Santee	Signal	PM	9.1	A	>100.0	F	10.3	В	
TRA-5	#6. El Nopal/ Cuyamaca Street	Santee	AWSC/	AM	12.3	В	>100.0	F	12.7	В	
INA-3	#0. El Nopal/ Cuyamaca Street	Santee	Signal	PM	12.1	В	>100.0	F	9.9	A	
TRA-8	#12. Beck Drive/ Cuyamaca	Santee	AWSC/	AM	24.1	C	>100.0	F	5.8	A	
IKA-0	Street	Santee	Signal	PM	13.7	В	>100.0	F	5.4	A	
TD 4 10	#25. Mast Boulevard/ Cuyamaca	G	G' 1	AM	38.0	D	75.4	Е	51.3	D	
TRA-12	Street d	Santee	Signal	PM			_			_	
					Pre-	Mitigatio	n Operatio	ns			
MM#	Street Segment	Jur.	Сара	city	Without	Project	With Pr	oject	Post M	itigation	
					ADT	LOS	ADT	LOS	Capacity	LOS	
TRA-25	#45. Cuyamaca Street: Woodglen Vista Drive to El Nopal	Santee	15,000		4,472	A	14,452	Е	40,000	A	
TRA-26	#46. Cuyamaca Street: El Nopal to Mast Boulevard	Santee	15,000		9,173	С	17,843	F	40,000	В	

Footnotes:

- a. Average delay expressed in second per vehicle.
- b. Level of service.
- c. Existing + Cumulative Projects and Existing + Cumulative Projects + Project conditions LOS is provided.
- d. "—" = Intersection is not impacted in the PM peak hour. Therefore, no delay/LOS are shown.

- 1. EIR MM# = EIR Traffic Study Mitigation Measure number.
- 2. Sig = Significant impact post-mitigation?
- 3. Mitigation provided for locations currently operating at LOS E or F are required to improve operations to better than or equal to pre-Project conditions only.
- 4. Jur. = Jurisdiction
- 5. Control Type: "TWSC"/"Signal" indicates pre- and post-mitigation control type.



Table 6 MITIGATION PHASING ANALYSIS (NO MAGNOLIA AVENUE EXTENSION – FULL ACCESS TO/FROM CUYAMACA STREET)

MM#	ID	Location	Without Magr	olia Avenue	With Magnolia Avenue EIR Analysis				
IVIIVI#	ID	Location	Total Project Generated ADT	EDU	Total Project Generated ADT	EDU			
TRA-4	#4.	Woodglen Vista Drive/ Cuyamaca Street	14,187	1,592	19,704	2,212			
TRA-5	#6.	El Nopal/ Cuyamaca Street	10,246	1,150	11,822	1,327			
TRA-8	#12.	Beck Drive/ Cuyamaca Street	2,102	236	2,364	265			
TRA-12	#25.	Mast Boulevard/ Cuyamaca Street	17,865	2,005	19,704	2,212			
			STREET SEGMEN	NTS					
TRA-25	#45.	Cuyamaca Street: Woodglen Vista Drive to El Nopal	1,053	118	1,379	155			
TRA-26	#46.	Cuyamaca Street: El Nopal to Mast Boulevard	11,597	1,302	13,197	1,481			

- 1. MM# = Mitigation Measure number
- 2. ADT = Average daily trips by the Project
- 3. EDU = Equivalent dwelling units calculated per Section 21.4 of the EIR Traffic Study (EIR Appendix N)



NO MAGNOLIA AVENUE EXTENSION PROHIBITING SOUTHBOUND LEFT-TURNS ON CUYAMACA STREET - CAPACITY ANALYSIS

<u>Existing + Project Peak Hour Intersections</u>

Table 7 summarizes the Existing + Project intersection operations without the Magnolia Avenue Extension, prohibiting southbound left-turning movements from Cuyamaca Street to local streets. As seen in *Table* 7, the following intersections are calculated to operate at LOS E or F with the addition of Project traffic:

- Intersection #4. Woodglen Vista Drive / Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection #6. El Nopal / Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection #12. Beck Drive / Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection #25. Mast Boulevard / Cuyamaca Street LOS F/E (AM/PM peak hours)

Based on the established significance criteria, <u>four (4) significant direct impacts</u> were calculated with the addition of Project traffic at the study area locations above since the Project-induced change in delay is greater than 2.0 seconds for LOS E or F operating intersections.

These impacts are also calculated to occur under the proposed Project (i.e. "With Magnolia Avenue Extension") condition analyzed in the EIR.

Attachment E contains the Existing + Project (No Magnolia Avenue Extension) peak hour intersection calculation worksheets.

Existing + Cumulative Projects + Project Peak Hour Intersections

Table 7 summarizes the Existing + Cumulative Projects + Project intersection operations without the Magnolia Avenue Extension, prohibiting southbound left-turning movements from Cuyamaca Street to local streets. As seen in *Table 7*, the following intersections are calculated to operate at LOS E or F with the addition of cumulative traffic and Project traffic:

- <u>Intersection #4. Woodglen Vista Drive / Cuyamaca Street LOS F</u> (AM/PM peak hours)
- Intersection #6. El Nopal / Cuyamaca Street LOS F (AM/PM peak hours)
- Intersection #12. Beck Drive / Cuyamaca Street LOS F (AM/PM peak hours)



Intersection #25. Mast Boulevard / Cuyamaca Street – LOS F (AM/PM peak hours)

Based on the established significance criteria, <u>four (4) significant direct impacts</u> were calculated with the addition of Project traffic at the study area locations above since the Project-induced change in delay is greater than 2.0 seconds for LOS E or F operating intersections.

These impacts are also calculated to occur under the proposed Project (i.e. "With Magnolia Avenue Extension") condition analyzed in the EIR.

Attachment F contains the Existing + Cumulative Projects + Project (No Magnolia Avenue Extension) peak hour intersection calculation worksheets.

Existing + Project Daily Segment Operations

Table 8 summarizes the Existing + Project street segment operations without the Magnolia Avenue Extension, prohibiting southbound left-turning movements from Cuyamaca Street to local streets. As seen in *Table 8*, the following street segments are calculated to operate at LOS E or F with the addition of Project traffic:

- Segment #41. Cuyamaca Street from Project Site to Magnolia Avenue LOS E
- Segment #42. Cuyamaca Street from Magnolia Avenue to Princess Joann Road – LOS E
- Segment #45. Cuyamaca Street from Woodglen Vista Drive to El Nopal LOS F
- Segment #46. Cuyamaca Street from El Nopal to Mast Boulevard LOS F

Based on the established significance criteria, <u>two (2) significant direct impacts</u> were calculated with the addition of Project traffic at study area locations above since the Project-induced change in V/C is greater than 0.02 for LOS E or F operating street segments. The significant impact on Segment #45 is also calculated to occur with the connection of Magnolia Avenue analyzed in the EIR under Year 2035 conditions. The significant impact on Segment #46 is also calculated to occur with the connection of Magnolia Avenue analyzed in the EIR under near-term conditions.

Segments #41 and #42 are not deemed to be significant impacts as the intersections operations bookending each segment and the peak hour arterial analyses are calculated to operate at LOS B or better based on standards of practice in the industry and per methodologies for calculating LOS as described in the HCM. Further details on this approach to evaluating street segment operations using peak hour results are provided later on in this letter report.



Existing + Cumulative Projects + Project Daily Segment Operations

Table 8 summarizes the Existing + Cumulative Projects + Project street segment operations without the Magnolia Avenue Extension, prohibiting southbound left-turning movements from Cuyamaca Street to local streets. As seen in *Table 8*, the following street segments are calculated to operate at LOS E or F with the addition of Project traffic:

- Segment #41. Cuyamaca Street from Project Site to Magnolia Avenue LOS E
- Segment #42. Cuyamaca Street from Magnolia Avenue to Princess Joann Road – LOS E
- Segment #45. Cuyamaca Street from Woodglen Vista Drive to El Nopal LOS F
- Segment #46. Cuyamaca Street from El Nopal to Mast Boulevard LOS F

Based on the established significance criteria, two (2) significant direct impacts were calculated with the addition of Project traffic at study area locations above since the Project-induced change in V/C is greater than 0.02 for LOS E or F operating street segments. The significant impact on Segment #45 is also calculated to occur with the connection of Magnolia Avenue analyzed in the EIR under Year 2035 conditions. The significant impact on Segment #46 is also calculated to occur with the connection of Magnolia Avenue analyzed in the EIR under near-term conditions.

Segments #41 and #42 are not deemed to be significant impacts as the intersections operations bookending each segment and the peak hour arterial analyses are calculated to operate at LOS B or better based on standards of practice in the industry and per methodologies for calculating LOS as described in the HCM. Further details on this approach to evaluating street segment operations using peak hour results are provided below.

<u>Peak Hour</u> Arterial Analysis

Using the volume-to-capacity (V/C) methodology, the section of Cuyamaca Street between the first Project on-site roundabout at Street "A"/Street "Y" and Woodglen Vista Drive is forecasted to operate at LOS E under Existing + Project and Existing + Project + Cumulative Project conditions. The LOS E threshold for a Two-Lane Parkway lies between 13,000 and 15,000 ADT, and this segment of Cuyamaca Street has at most a forecast volume of 13,920 ADT

Volume-to-capacity street segment analysis lacks the precision of peak hour intersection analysis, which takes into account more detailed traffic flow patterns, intersection controls, and roadway features. Peak hour analysis also represents the



highest accumulation of traffic volumes throughout a 24-hour period and analyzes peak commute periods. The intersection calculations are based on complex computerized traffic models utilizing methodology from the HCM that has been refined over decades. By contrast, the V/C segment analysis is comprised of two variables; volume obtained from a 24-hour count, and capacity based on the City's published guidelines, which necessarily present a homogenized, "one-size fits all" summary of theoretical capacities for roads based generally on the number of lanes and presence of parking maneuvers. Between these two methods, the peak hour analysis is the superior and more accurate method to determine actual roadway calculations.

The Cuyamaca Street intersections with Princess Joann Road and Woodglen Vista Drive would be improved from stop controls to traffic signals as part of the Project mitigation detailed in the EIR. *Table 9* shows the results of the mitigated intersection LOS results without Magnolia Avenue and with restricted southbound left-turn movements. Based on the computed intersection analysis, the signalized intersections will operate at LOS B or better, and thus the roadway would be expected to operate very efficiently since LOS B is calculated at the intersections on either end of each segment with the proposed mitigation.

Table 10 summarizes the Existing + Cumulative Projects + Project peak hour arterial operations of Cuyamaca Street without the Magnolia Avenue extension, restricting southbound left-turns from Cuyamaca Street. The section of Cuyamaca Street from the Project Site to Woodglen Vista Drive serves as an access route to a major roadway (Mast Boulevard) ultimately connecting to daily commuter routes, which classifies as a Class III Arterial, per the *Highway Capacity Manual (HCM)*. Table 8 shows travel speeds (mph) in both directions on Cuyamaca Street along this section operating at LOS B or better.

Attachment G contains the Existing + Cumulative Projects + Project (No Magnolia Avenue Extension) with EIR mitigation intersection and peak hour arterial analysis worksheets.

Mitigated Operations

Implementation of the mitigation measures proposed in the EIR Traffic Study would fully mitigate the impacts associated with the deletion of the Magnolia Avenue Extension project.

Table 11 shows the mitigated operations for intersections and street segments applying the improvements from the EIR Traffic Study.

Attachment G contains the post-mitigation intersection analysis worksheets.



Mitigation Phasing

Utilizing the methodology in the EIR, an analysis was conducted at each of the impacted locations with the deletion of the Magnolia Avenue Extension to determine the number of units that could be built before a significant Project impact would occur.

Table 12 summarizes the number of equivalent dwelling units (EDUs) that may be built and occupied, before each mitigation measure is required at intersections and street segments.

Attachment H contains the intersection analysis sheets associated with the threshold operations identified for each intersection.



TABLE 7 INTERSECTION OPERATIONS (No Magnolia Avenue Extension – Prohibited Southbound Left-Turns from Cuyamaca Street)

Intersection	Jur.	Control Type	Peak Hour	Exist	Existing Ex		Project	Δ° Delay	Sig?	EIR Impact w/ Magnolia Avenue	Existing + Cumulative Projects		Cumul Projec	Existing + Cumulative Projects + Project		Sig?	EIR Impact w/ Magnolia Avenue
				Delay ^a	LOS b	Delay	LOS			Extension? d	Delay	LOS	Delay	LOS			Extension? d
Princess Joann Road / Cuyamaca Street (future intersection)	Santee	DNE/ MSSC	AM PM		_	11.4 21.6	B C	_ _	No	No			11.4 21.6	B C	_ _	No	No
2. Princess Joann Road / Magnolia Avenue	Santee	AWSC	AM PM	7.6 7.9	A A	8.5 10.1	A B	0.9 2.2	No	No	7.7 7.9	A A	8.5 10.1	A B	0.8 2.2	No	No
4. Woodglen Vista Drive / Cuyamaca Street	Santee	AWSC	AM PM	8.9 9.0	A A	>100.0 >100.0	F F	>2.0 >2.0	Yes	Yes	8.9 9.1	A A	>100.0 >100.0	F F	>2.0 >2.0	Yes	Yes
5. Woodglen Vista Drive / Magnolia Avenue	Santee	Signal	AM PM	11.9 10.7	B B	13.4 11.2	B B	1.5 0.5	No	No	12.0 10.7	B B	13.5 11.2	B B	1.5 0.5	No	No
6. El Nopal / Cuyamaca Street	Santee	AWSC	AM PM	12.0 11.8	B B	>100.0 >100.0	F F	>2.0 >2.0	Yes	Yes	12.3 12.1	B B	>100.0 >100.0	F F	>2.0 >2.0	Yes	Yes
7. El Nopal / Magnolia Avenue	Santee	Signal	AM PM	23.9 18.3	C B	25.8 22.2	C C	1.9 3.9	No	No	24.3 18.6	C C	26.3 23.0	C C	2.0 4.4	No	No
12. Beck Drive / Cuyamaca Street	Santee	AWSC	AM PM	22.4 13.3	C B	>100.0 >100.0	F F	>2.0 >2.0	Yes	Yes	24.1 13.7	C B	>100.0 >100.0	F F	>2.0 >2.0	Yes	Yes
13. 2 nd Street / Magnolia Avenue	Santee	Signal	AM PM	8.0 6.6	A A	8.8 8.6	A A	0.8 2.0	No	No	8.2 6.7	A A	9.1 9.3	A A	0.9 2.6	No	No
14. Carefree Drive / Magnolia Avenue	Santee	Signal	AM PM	17.4 9.2	B A	17.6 9.4	B A	0.2 0.2	No	No	17.8 9.3	B A	18.0 9.6	B A	0.2 0.3	No	No
25. Mast Boulevard / Cuyamaca Street	Santee	Signal	AM PM	36.9 33.3	D C	98.3 62.9	F E	61.4 29.6	Yes	Yes	38.0 33.7	D D	>100.0 64.3	F E	>2.0 30.6	Yes	Yes
26. Mast Boulevard / Park Center Drive	Santee	Signal	AM PM	7.1 8.7	A A	7.7 9.1	A A	0.6 0.4	No	No	7.1 8.9	A A	7.8 9.4	A A	0.7 0.5	No	No
27. Mast Boulevard / Magnolia Avenue	Santee	Signal	AM PM	32.9 26.8	C C	52.0 31.3	D C	19.1 4.5	No	No	36.6 28.1	D D	54.4 33.9	D C	17.8 5.8	No	No

Footnotes:

- Average delay expressed in seconds per vehicle.
- Δ denotes the increase in delay due to Project.
- See Tables 8–1 and 10–1 in the EIR traffic study (EIR Appendix N) for the "with Magnolia Avenue Extension" analysis.

- Sig = Significant impact, yes or no.
 Jur. = Jurisdiction

SIGNALIZI	ED	UNSIGNALI	ZED	
DELAY/LOS THRI	ESHOLDS	DELAY/LOS THR	ESHOLDS	
Delay	LOS	Delay	LOS	
$0.0 \le 10.0$	A	$0.0 \le 10.0$	A	
10.1 to 20.0	В	10.1 to 15.0	В	
20.1 to 35.0	C	15.1 to 25.0	C	
35.1 to 55.0	D	25.1 to 35.0	D	
55.1 to 80.0	E	35.1 to 50.0	E	
≥ 80.1	F	≥ 50.1	F	



TABLE 8 **SEGMENT OPERATIONS** (No Magnolia Avenue Extension – Prohibited Southbound Left-Turns from Cuyamaca Street)

					(14)	O WIAGNOL	IA AVENU	E LATENSI	ON - PROFILE	טוובט טטוו	UINDUU	ID LEFT-TURNS FRO	IVI GUTAIVI	ACA STREE	:1)							
Street Segment Jur.		Existing Capacity			Existing + Project		Project Δ^{e}	C:-0	EIR Impact w/ Magnolia Avenue	Existing + Cumulative Projects			Existing + Cumulative Projects + Project		+ Project	Project	3		EIR Impact w/ Magnolia Avenue			
		(LOS E) a	ADT b	LOS c	V/C d	ADT	LOS	V/C	Volumes	V/C		Extension? f	ADT	LOS	V/C	ADT	LOS	V/C	Volumes	V/C	8	Extension? f
Princess Joann Road																						
1. Cuyamaca St to Magnolia Ave	Santee	8,000	530	Α	0.066	1,840	A	0.230	1,310	0.164	No	No	685	A	0.086	1,995	A	0.249	1,310	0.163	No	No
Woodglen Vista Drive																						
2. Cuyamaca St to Magnolia Ave	Santee	8,000	1,700	A	0.213	2,360	A	0.295	660	0.082	No	No	1,759	A	0.220	2,419	A	0.302	660	0.082	No	No
El Nopal																						
3. Cuyamaca St to Magnolia Ave	Santee	8,000	3,780	С	0.473	4,440	С	0.555	660	0.082	No	No	3,886	С	0.486	4,546	С	0.568	660	0.082	No	No
Mast Boulevard																						
13. Cuyamaca St to Magnolia Ave	Santee	40,000	18,490	В	0.462	21,910	С	0.548	3,420	0.086	No	No	19,616	В	0.490	23,036	С	0.576	3,420	0.086	No	No
Cuyamaca Street																						
41. Project Site to Magnolia Ave ^g	Santee	DNE/ 15,000	_	_	_	13,920	E h	0.928	13,920	_	No h	No ^h	_	_	_	13,920	E ^h	1.000	13,920	_	No h	No ^h
42. Magnolia Ave to Princess Joann Rd ^g	Santee	DNE/ 15,000	_	_	_	13,920	E ^h	0.928	13,920	_	No h	No h	_	_		13,920	E ^h	1.000	13,920	_	No h	No h
43. Princess Joann Rd to Chaparral Dr ^g	Santee	DNE/ 15,000	_	_	_	12,610	D	0.841	12,610	_	No	No	_			12,610	D	1.000	12,610	-	No	No
44. Chaparral Dr to Woodglen Vista Dr i	Santee	15,000/ 40,000	670	A	0.045	13,280	A i	0.332	12,610	0.287	No	No	683	A	0.046	13,293	A i	0.332	12,610	0.315	No	No
45. Woodglen Vista Dr to El Nopal	Santee	15,000	4,360	A	0.291	16,310	F	1.087	11,950	0.796	Yes	Yes ^j	4,472	A	0.298	16,422	F	1.095	11,950	0.797	Yes	Yes ^j
46. El Nopal to Mast Blvd	Santee	15,000	8,860	С	0.591	20,160	F	1.344	11,300	0.753	Yes	Yes	9,173	C	0.612	20,473	F	1.365	11,300	0.753	Yes	Yes
Magnolia Avenue																						
54. Cuyamaca St to Princess Joann Rd	Santee	DNE	_			_	_	_	_	_	_	_	_	_		_	_	_	_	_		_
55. Princess Joann Rd to Woodglen Vista Dr	Santee	40,000	2,020	A	0.051	3,330	A	0.083	1,310	0.032	No	No	2,204	A	0.055	3,514	A	0.088	1,310	0.033	No	No
56. Woodglen Vista Dr to El Nopal	Santee	40,000	9,030	A	0.226	11,000	A	0.275	1,970	0.049	No	No	9,415	A	0.235	11,385	A	0.285	1,970	0.050	No	No
57. El Nopal to Mast Blvd	Santee	40,000	13,690	A	0.342	16,320	В	0.408	2,630	0.066	No	No	14,291	A	0.357	16,921	В	0.423	2,630	0.066	No	No

- a. Capacities based on City of Santee Roadway Classification & LOS table.
- Average Daily Traffic
- Level of Service
- Volume to Capacity ratio
- Δ denotes a Project-induced increase in the Volume to Capacity ratio See *Table 8–2* in the EIR traffic study for the "with Magnolia Avenue Extension" analysis.
- The 15,000 ADT capacity for the existing sections of Cuyamaca Street was continued along this future section providing access to the Project.
- The intersection operations at both ends of the Cuyamaca Street road segment between the Project Site and Woodglen Vista Drive report LOS C or better operations and the peak hour arterial operations. Therefore, adequate operations are expected along this roadway. See Tables 7 and 8.
- As part of the Project Design Features for this Project, Cuyamaca Street from Chaparral Drive to Woodglen Vista Drive is proposed to be improved to four-lane Major Road standards. Therefore, an LOS E capacity of 40,000 ADT was used in the "Plus Project" analyses.

 Without the connection of the Magnolia Avenue Extension, this segment impact would be a direct impact instead of a cumulative impact, as identified in the EIR traffic study. The mitigation recommended in the EIR of improving Cuyamaca Street between Woodglen Vista Drive and El Nopal to four lanes would still be recommended. Therefore, no new impacts would occur without the extension of Magnolia Avenue and the mitigation would be unchanged.

- 1. Sig = Significant impact, yes or no.
- 2. DNE, "—" = Does not exist.



Table 9 MITIGATED INTERSECTION OPERATIONS (NO MAGNOLIA AVENUE EXTENSION – PROHIBITED SOUTHBOUND LEFT-TURNS FROM CUYAMACA STREET)

	Intercontion	Existing + Cumulative Projects + Project							
	Intersection	Control Type	Peak Hour	Delay ^a	LOS b				
A.	Cuyamaca Street/ Street A/ Street Y	Round- about	AM PM	11.7 24.8	B C				
1.	Cuyamaca Street/ Princess Joann Road	Signal	AM PM	5.3 6.4	A A				
4.	Cuyamaca Street/ Woodglen Vista Road	Signal	AM PM	9.9 7.0	A A				

Footnotes:

a. Average delay expressed in seconds per vehicle.

b. Level of Service

SIGNALIZED										
DELAY/LOS THRESHOLDS										
Delay	LOS									
$0.0 \le 10.0$	A									
10.1 to 20.0	В									
20.1 to 35.0	C									
35.1 to 55.0	D									
55.1 to 80.0	E									
≥ 80.1	F									



TABLE 10 PEAK HOUR ARTERIAL ANALYSIS (No Magnolia Avenue Extension – Prohibited Southbound Left-Turns from Cuyamaca STREET)

Dir.	Dir.	Roadway Classification with	Existing + Cumulative Projects + Project						
DII.	Dii.	EIR Improvements	A	M	PM				
			Speed ^a	LOS b	Speed	LOS			
	Woodglen Vista Dr to Chaparral Dr	4-ln w/ Raised Median	33.7	A	31.3	A			
NB	Chaparral Dr to Princess Joann Rd	2-ln w/ Raised Median	33.7	A	31.3	A			
	Princess Joann Rd to Project Site (Street "Y")	2-ln w/ Raised Median	31.2	A	29.0	В			
	Project Site (Street "Y") to Princess Joann Rd	2-ln w/ Raised Median	32.8	A	33.0	A			
SB	Princess Joann Rd to Chaparral Dr	2-ln w/ Raised Median	32.8	A	33.0	A			
	Chaparral Dr to Woodglen Vista Dr	4-ln w/ Raised Median	29.1	В	29.9	В			

Footnotes:		SPEED (MPH) / LOS THRESHOLDS						
a. Speed measured in miles per hour.	LOS	Class I	Class II	Class III	Class IV			
b. LOS = Level of Service	A	>42	>35	>30	>25			
General Notes	В	>34-42	>28-35	>24-30	>19-25			
	C	>27-34	>22-28	>18-24	>13-19			
1. Dir. = Direction	D	>21-27	>17-22	>14-18	>9-13			
2. NB = Northbound	E	>16-21	>13-17	>10-14	>7-9			
3. $SB = Southbound$	F	< 16	< 13	< 10	< 7			

 ≤ 16 ≤ 13 ≤ 10 ≤ 7



Table 11 Post-Mitigation Analysis

(No Magnolia Avenue Extension – Prohibited Southbound Left-Turns from Cuyamaca Street)

			Control	Control		Mitigation	Operation	ıs ^c	D FID	N. # * 4 * 4 *	
EIR	Intersection	Jur.	Type: Pre/Post	Peak Hour	Without Project		With Pr	oject	Post-EIR Mitigation		
MM#			Mitigation	Hour	Delay a	LOS b	Delay	LOS	Delay	LOS	
TRA-4	#4. Woodglen Vista Drive/	Santee	AWSC/	AM	8.9	A	>100.0	F	9.9	A	
ПАТ-4	Cuyamaca Street	Sance	Signal	PM	9.1	A	>100.0	F	7.0	A	
TRA-5	#6. El Nopal/ Cuyamaca Street	Santee	AWSC/	AM	12.3	В	>100.0	F	12.5	В	
TKA-3	#6. El Nopal/ Cuyamaca Street	Santee	Signal	PM	12.1	В	>100.0	F	6.9	A	
TDAO	#12. Beck Drive/ Cuyamaca	C4	AWSC/	AM	24.1	C	>100.0	F	5.8	A	
TRA-8	Street	Santee	Signal	PM	13.7	В	>100.0	F	5.4	A	
TD 4 10	#25. Mast Boulevard/ Cuyamaca	Santee	G' 1	AM	38.0	D	>100.0	F	52.6	D	
TRA-12	Street		Signal	PM	33.7	D	64.3	Е	43.8	D	
					Pre-Mitigation Operations						
MM#	Street Segment	Jur.	Capacity		Without Project		With Project		Post Mitigation		
						LOS	ADT	LOS	Capacity	LOS	
TRA-25	#45. Cuyamaca Street: Woodglen Vista Drive to El Nopal	Santee	15,000		4,472	A	16,422	F	40,000	A	
TRA-26	#46. Cuyamaca Street: El Nopal to Mast Boulevard	Santee	15,000		9,173	С	20,473	F	40,000	В	

Footnotes:

- a. Average delay expressed in second per vehicle.
- b. Level of service.
- c. Existing + Cumulative Projects and Existing + Cumulative Projects + Project conditions LOS is provided.

- 1. EIR MM# = EIR Traffic Study Mitigation Measure number.
- 2. Sig = Significant impact post-mitigation?
- 3. Mitigation provided for locations currently operating at LOS E or F are required to improve operations to better than or equal to pre-Project conditions only.
- 4. Jur. = Jurisdiction
- 5. Control Type: "TWSC"/"Signal" indicates pre- and post-mitigation control type.



TABLE 12 MITIGATION PHASING ANALYSIS (No Magnolia Avenue Extension – Prohibited Southbound Left-Turns from Cuyamaca Street)

			Without Magi	nolia Avenue	With Magnoli EIR Ana							
MM#	ID	Location	Total Project Generated ADT	EDU	Total Project Generated ADT	EDU						
Intersections												
TRA-4	#4.	Woodglen Vista Drive/ Cuyamaca Street	13,924	1,563	19,704	2,212						
TRA-5	#6.	El Nopal/ Cuyamaca Street	9,721	1,091	11,822	1,327						
TRA-8	#12.	Beck Drive/ Cuyamaca Street	2,102	236	2,364	265						
TRA-12	#25.	Mast Boulevard/ Cuyamaca Street	11,297	1,268	19,704	2,212						
			STREET SEGME	ENTS								
TRA-25	#45.	Cuyamaca Street: Woodglen Vista Drive to El Nopal	1,053	118	1,379	155						
TRA-26	#46.	Cuyamaca Street: El Nopal to Mast Boulevard	11,597	1,302	13,197	1,481						

- MM# = Mitigation Measure number
 ADT = Average daily trips by the Project
 EDU = Equivalent dwelling units calculated per *Section 21.4* of the EIR Traffic Study (EIR Appendix N)



VEHICLE MILES TRAVELED

The EIR Traffic Study analyzed the Project's VMT using data science under existing baseline conditions and using the SANDAG travel demand model for Year 2035 conditions.

The existing data science method categorized the Project into land use types which included Residential, Active Adult age-restricted living, Retail, K-8 Charter School, Recreation Center, Farm, Park and Trails, and RV Parking and Solar Farms. Given there

is no existing development on the Project site, proxy sites in the immediate vicinity with similar characteristics were used to determine average trip lengths using Navigation GPS Analytics. Average trip lengths were based on GPS data obtained from daily, weekday trip data for a one-year time period between November 1, 2017 and October 31, 2018. The total data sample size for the proxy sites is approximately 35,000 devices.

The Fanita Ranch Project population estimates were used along with the trip generation estimates for auto mode splits and daily auto trips. Given this method utilized proxy site trip lengths to apply to Project land uses, the changes to the VMT results with or without the Magnolia Avenue extension would be negligible.

For the Year 2035 VMT analysis, the SANDAG model VMT results were reported. The north/south routes of Cuyamaca Street and Magnolia Avenue run parallel to each other for their existing entirety. Without the future extension of Magnolia Avenue coded into the model, any trip destined to/from Magnolia would travel virtually the same distance along Princess Joann Road, Woodglen Vista Drive,

C Princess Joann Rd D Prin

El Nopal, or Mast Boulevard (with restricted southbound lefts on Cuyamaca Street), thus also negligibly affecting the results of the VMT analysis.

The exhibit inserted in this section shows the approximate distances between Cuyamaca Street and Magnolia Avenue. Between Routes $A \rightarrow B \rightarrow D$ or using Route $A \rightarrow C \rightarrow D$ the distance is very similar calculating to approximately 1.0-1.05 miles. Using Woodglen Vista Drive, El Nopal or Mast Boulevard would also result in similar distances traveled. It would therefore be expected that any change to the VMT as a result of the deleting the Magnolia Avenue extension would be de minimis. This is attributable to the grid-like network characteristics of the roadways.



For the scenario with left-turns prohibited, additional VMT would occur for drivers oriented to/from El Nopal to the east. Since only 10% of the total trip generation is oriented to/from El Nopal and only a small amount of additional trip length would occur with this scenario, the overall Project increase in VMT would be de minimis.

In addition, it should be noted that the VMT impact was found to be significant and unavoidable in the EIR and no changes to those conclusions would occur without the connection of Magnolia Avenue, under both scenarios.

SUMMARY AND CONCLUSIONS

As shown in the analysis presented in this letter report, without the connection of the Magnolia Avenue Extension, one segment impact would be a direct impact instead of a cumulative impact (Cuyamaca Street between Woodglen Vista Drive and El Nopal). The mitigation recommended in the EIR of improving Cuyamaca Street between Woodglen Vista Drive and El Nopal to four lanes would fully mitigate this impact. Therefore, no new impacts would occur by deleting the extension of Magnolia Avenue and the previously recommended mitigation would be unchanged.

The VMT analysis and conclusion would not change as a result of the deletion of the extension of Magnolia Avenue. For the reasons explained herein, the grid-like pattern of the north/south corridors of Cuyamaca Street and Magnolia Street intersecting with the east/west roadways of Princess Joann Road, Woodglen Vista Drive, El Nopal, and Mast Boulevard would result in a de minimis change in the distances traveled between the Project site and destinations to the south. Therefore, no changes to the conclusions of significance would occur without the connection of Magnolia Avenue, under both scenarios.

It should also be noted that any change in the travel distance is temporary in nature until Magnolia Avenue is extended per the City's Mobility Element.

Sincerely,

Linscott, Law & Greenspan, Engineers

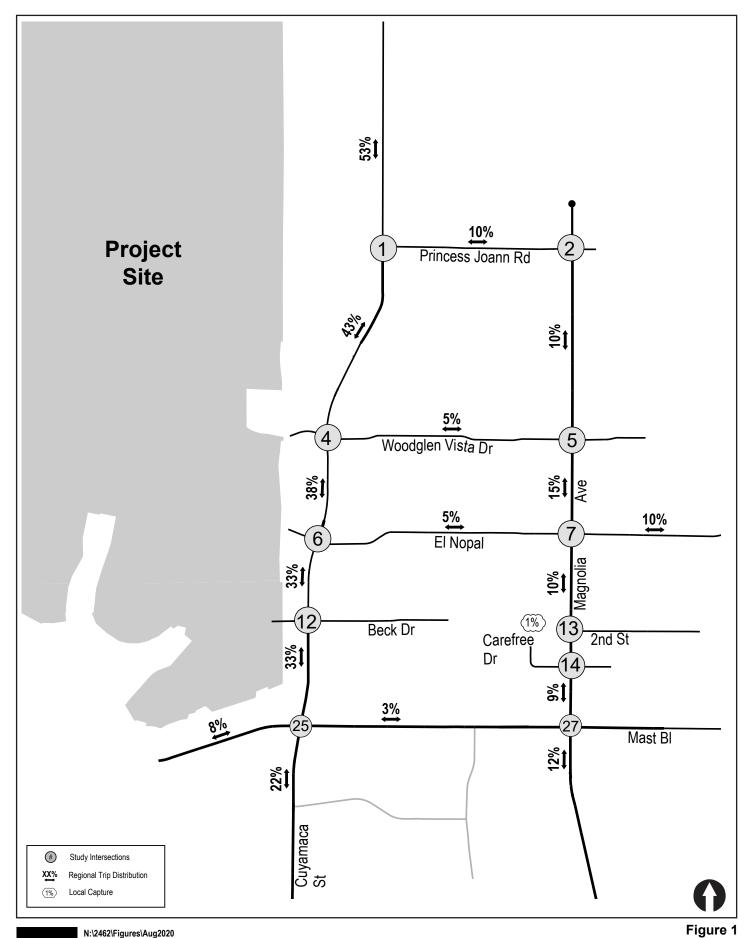
John Boarman, P.E.

Principal

Cara Hilgesen

Senior Transportation Planner

cc: File





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Project Traffic Distribution (No Magnolia Avenue Extension)

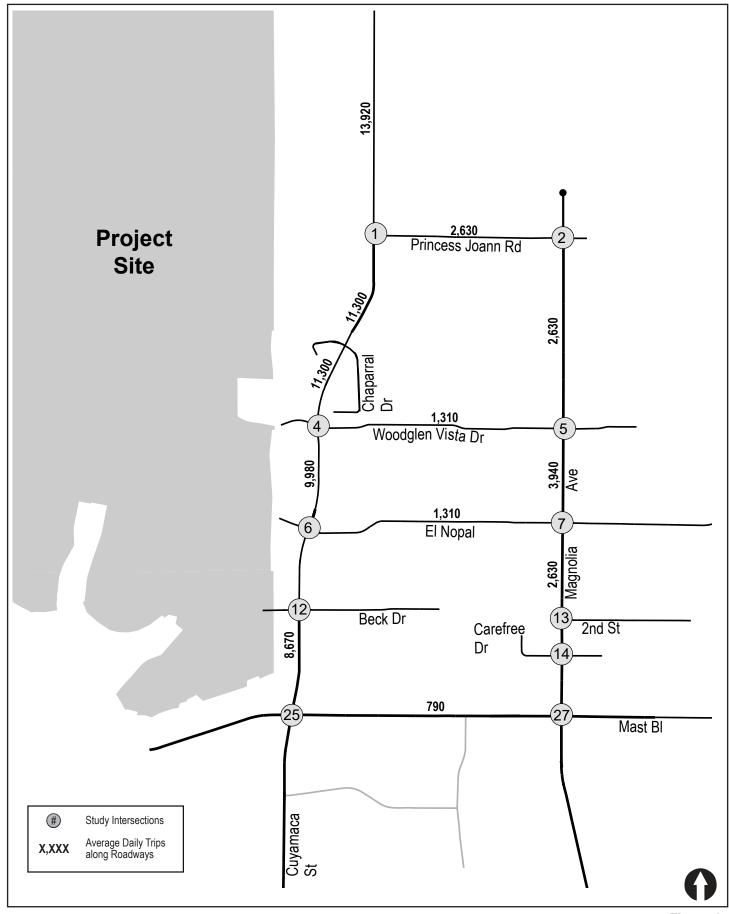
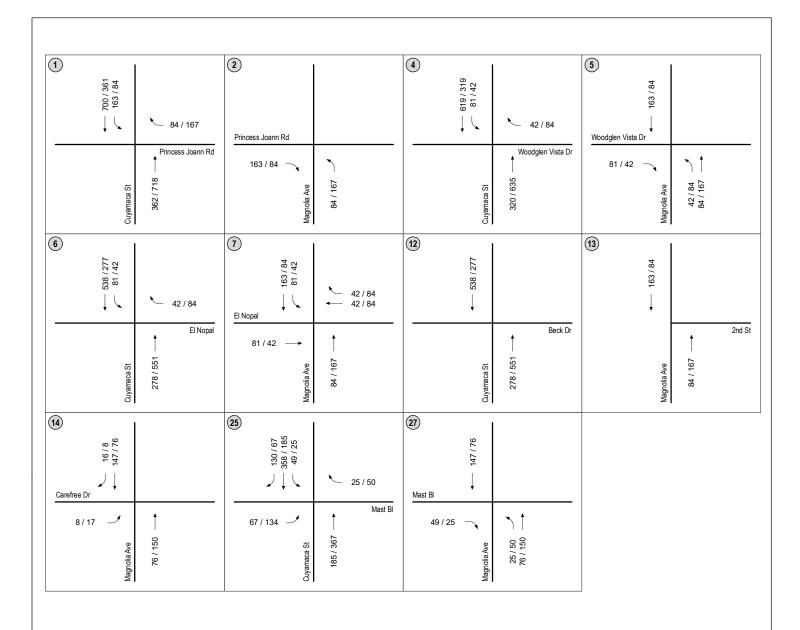
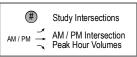




Figure 2a

Project Traffic Volumes (No Magnolia Avenue Extension)

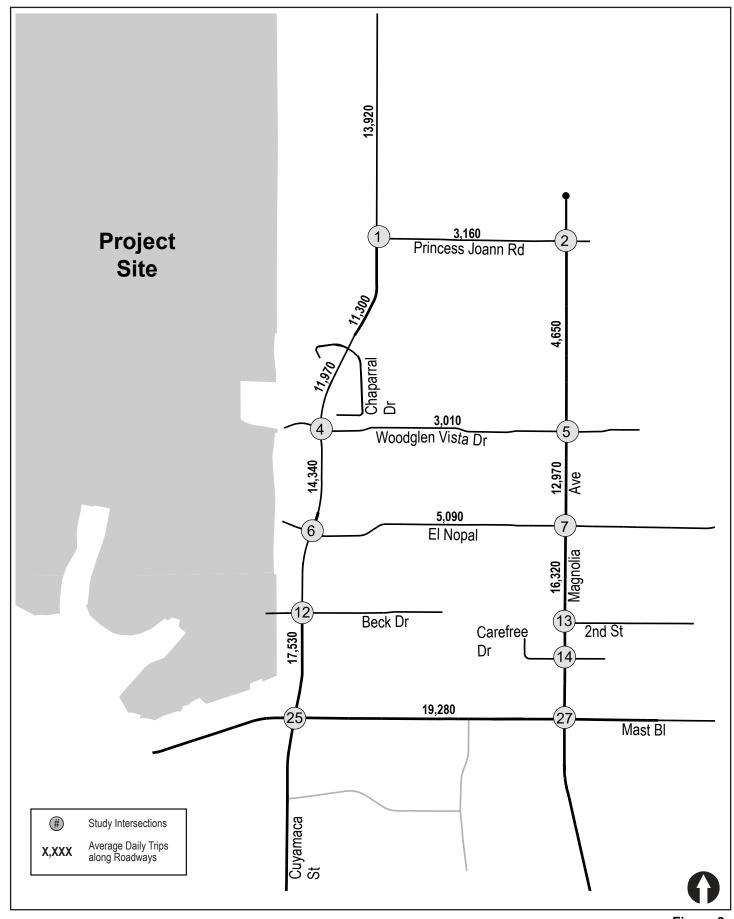








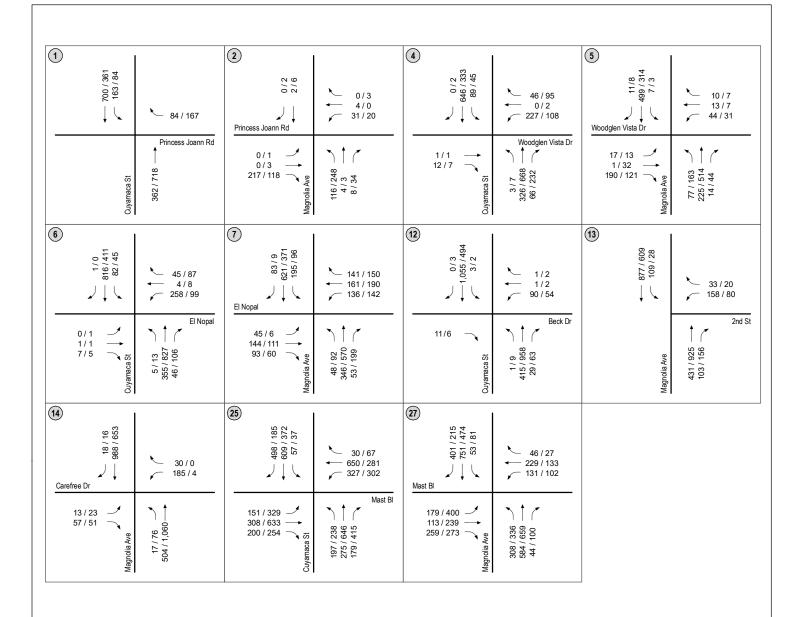
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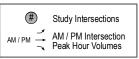




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Existing + Project Traffic Volumes
(No Magnolia Avenue Extension)



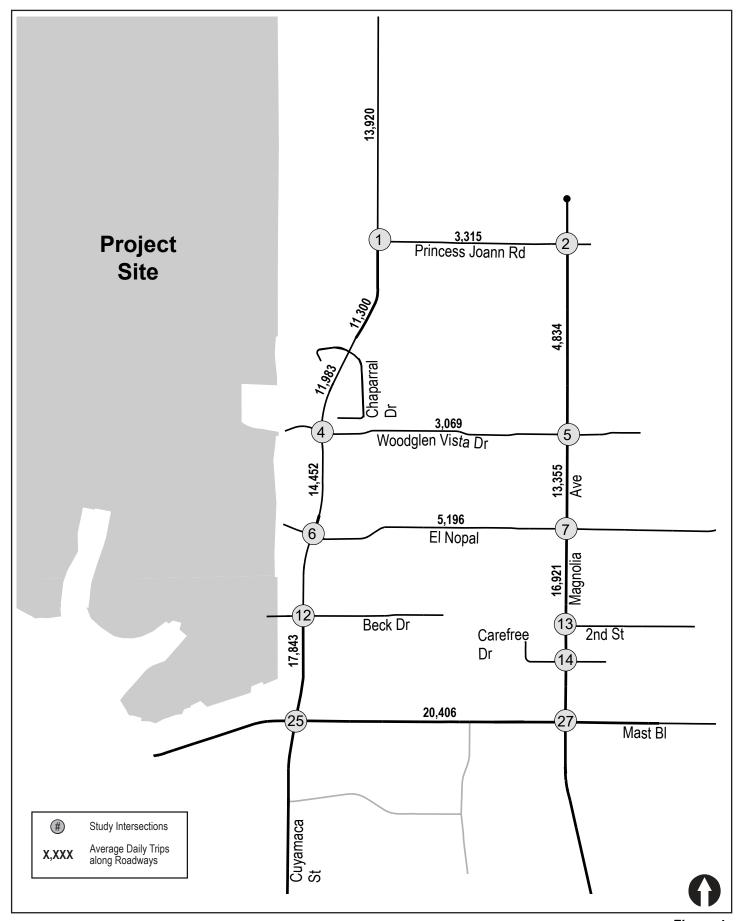






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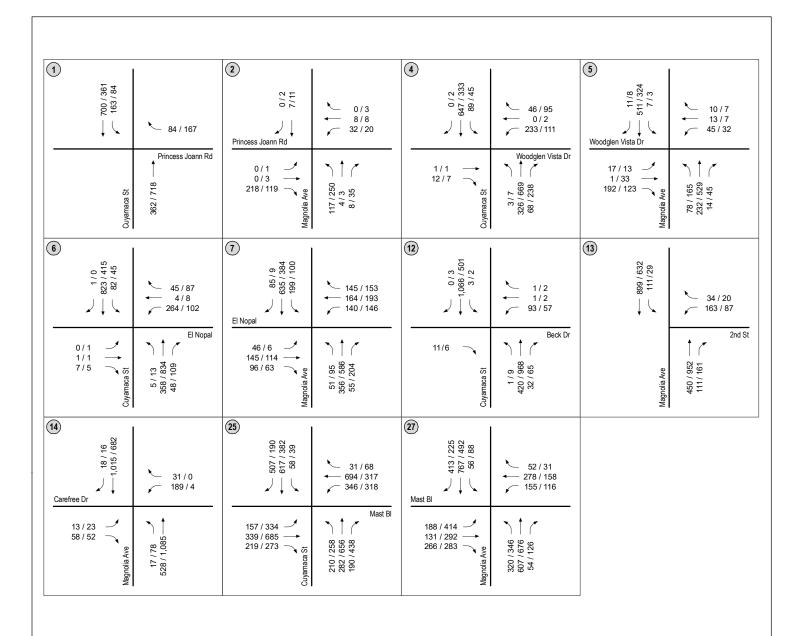
Existing + Project Traffic Volumes
(No Magnolia Avenue Extension)

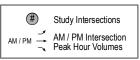




N:\2462\Figures Date: 08/28/20 Figure 4a

Existing + Cumulative Projects + Project Traffic Volumes
(No Magnolia Avenue Extension)

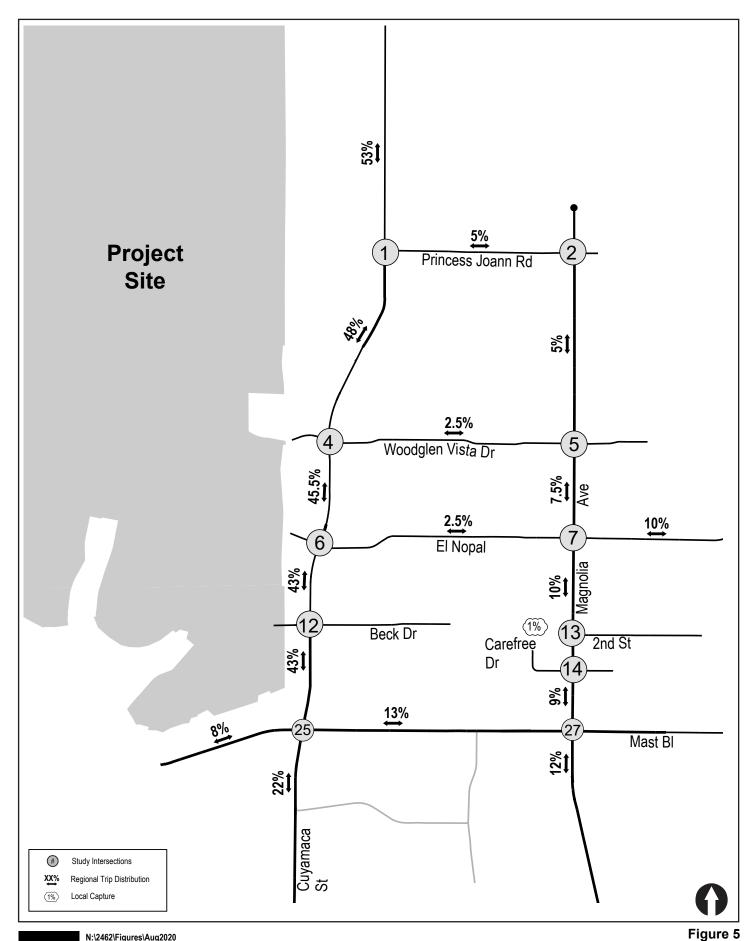






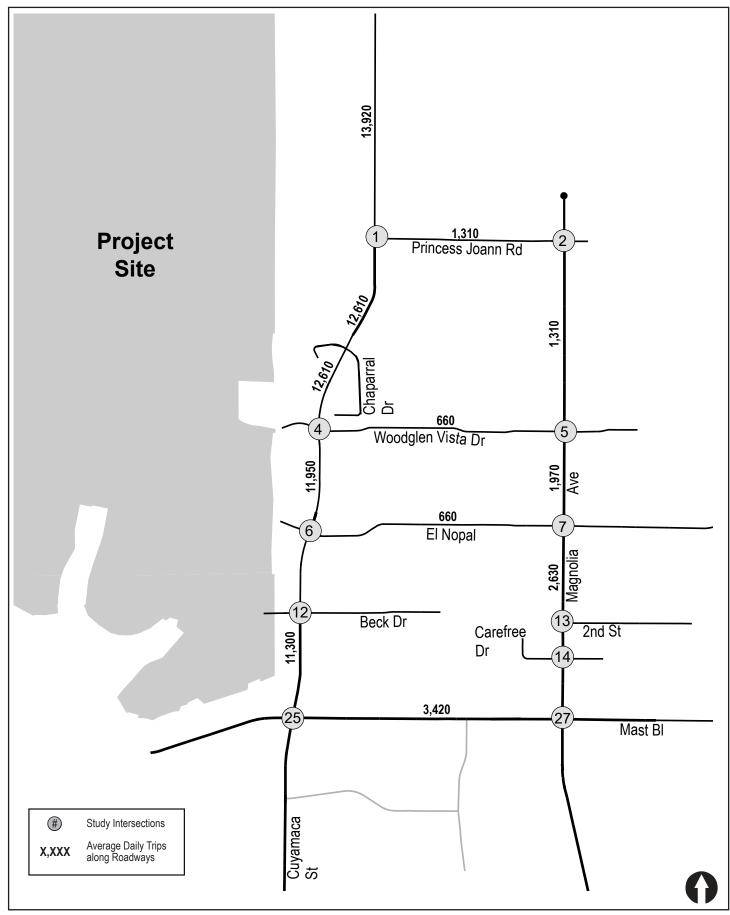


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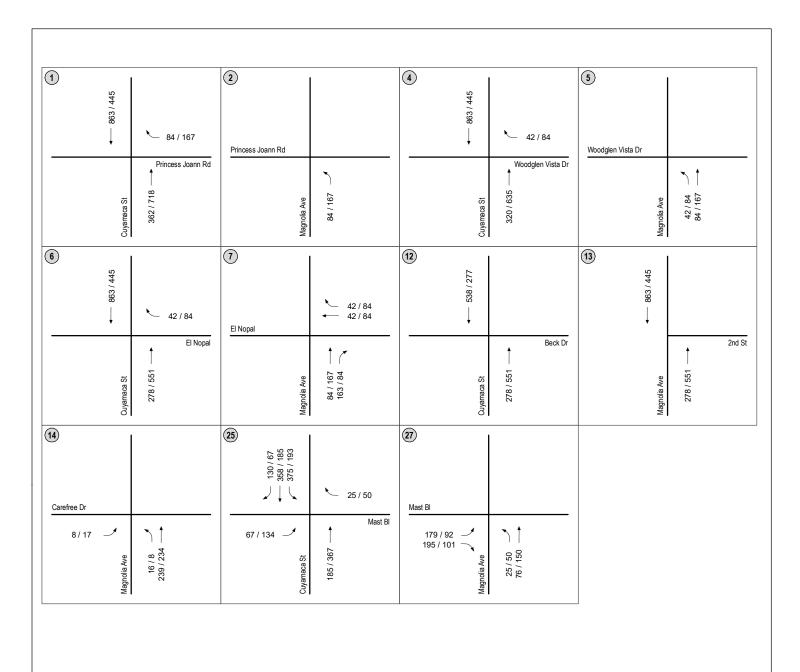


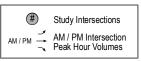


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Project Traffic Volumes

(No Magnolia Avenue Extension - Prohibited Southbound Left-Turns from Cuyamaca Street)



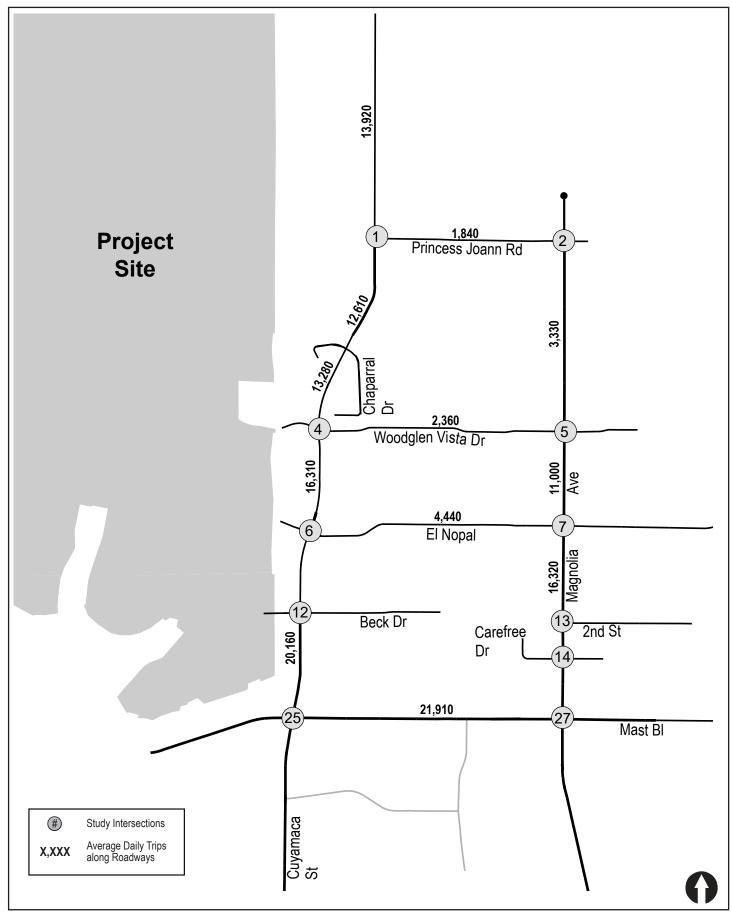




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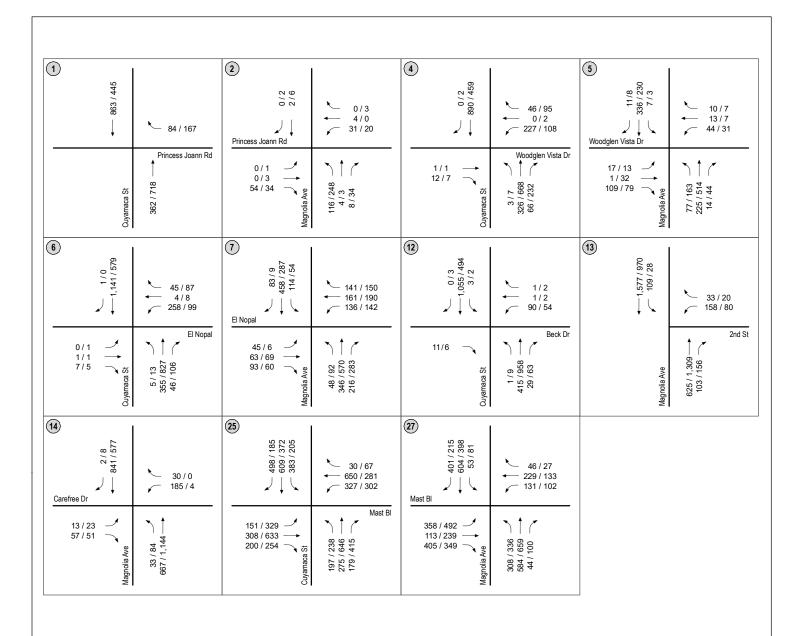
engineers

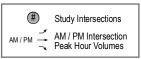
Figure 6b





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engineers

LAW & GREENSPAN



N:\2462\Figures Date: 01/27/20 Figure 7b

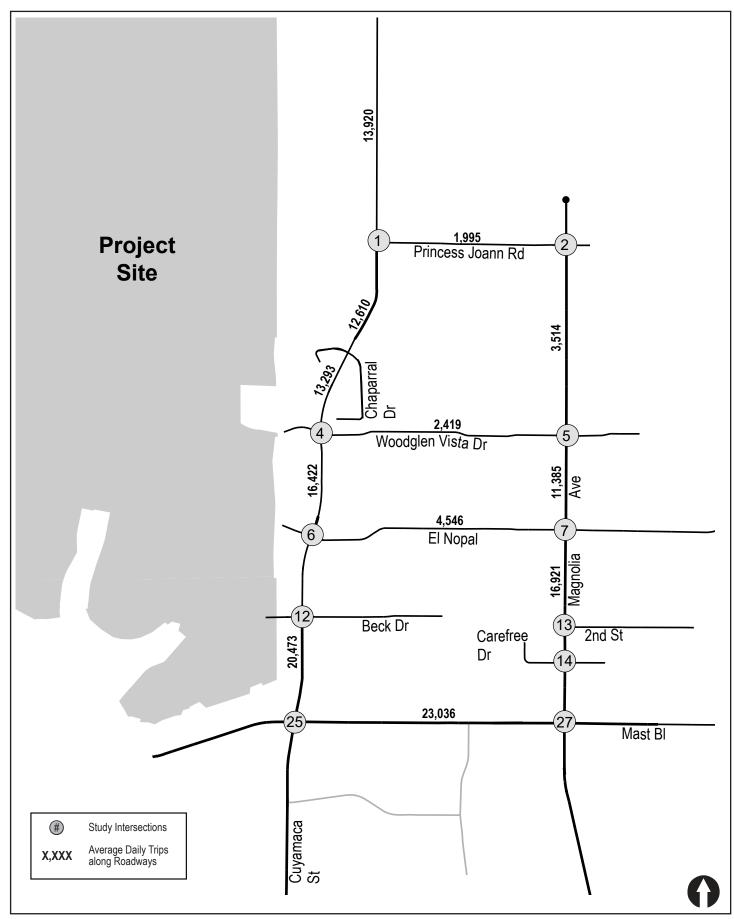
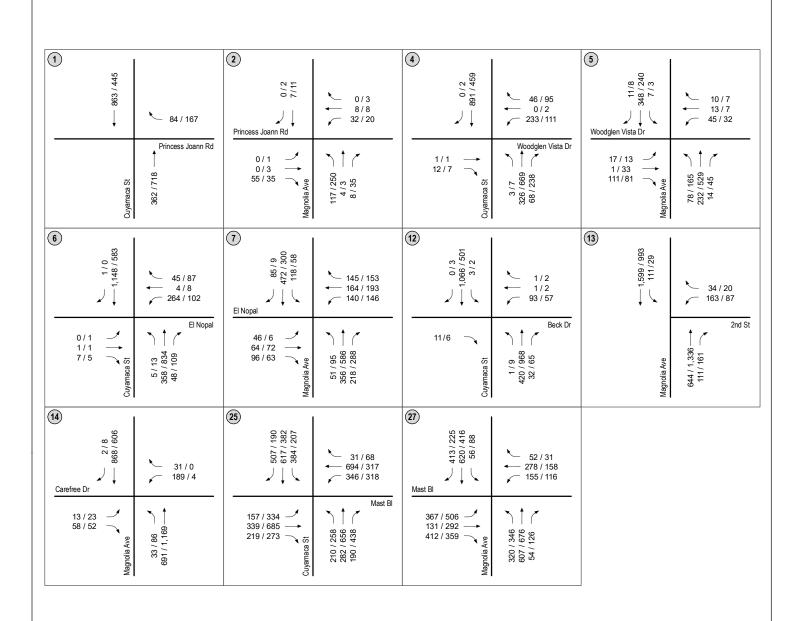
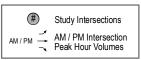




Figure 8a

Existing + Cumulative Projects + Project Traffic Volumes (No Magnolia Avenue Extension - Prohibited Southbound Left-Turns from Cuyamaca Street)









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Figure 8b

ATTACHMENT A EXISTING + PROJECT (NO MAGNOLIA AVENUE EXTENSION) PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS

1: Cuyamaca Street & Princess Joann Road

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
	WDL	WDIX		TO INDIX	JDL Š	<u>361</u>
Lane Configurations		84	↑ 362			
Traffic Vol, veh/h	0			0	163	700
Future Vol, veh/h	0	84	362	0	163	700
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	-	-	150	50	-
Veh in Median Storage	e, # 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	91	393	0	177	761
				•		
	Minor1		//ajor1		Major2	
Conflicting Flow All	1508	393	0	0	393	0
Stage 1	393	-	-	-	-	-
Stage 2	1115	-	-	-	-	-
Critical Hdwy	6.42	6.22	_	_	4.12	-
Critical Hdwy Stg 1	5.42	-	_	_		-
Critical Hdwy Stg 2	5.42	_	_	_	_	_
Follow-up Hdwy	3.518		_	_	2.218	_
Pot Cap-1 Maneuver	133	656	_	_	1166	_
•	682	000	_	_	1100	-
Stage 1		-		-	-	
Stage 2	314	-	-	-	-	-
Platoon blocked, %	440	050	-	-	1100	-
Mov Cap-1 Maneuver	113	656	-	-	1166	-
Mov Cap-2 Maneuver	113	-	-	-	-	-
Stage 1	682	-	-	-	-	-
Stage 2	266	-	-	-	-	-
A	\A/D		NID		OB	
Approach	WB		NB		SB	
HCM Control Delay, s			0		1.6	
HCM LOS	В					
Minor Lane/Major Mvr	nt	NBT	NRDV	VBLn1	SBL	SBT
	111					
Capacity (veh/h)		-	-	000	1166	-
HCM Lane V/C Ratio		-	-	0.139		-
HCM Control Delay (s)	-	-	11.4	8.6	-
HCM Lane LOS		-	-	В	Α	-
HCM 95th %tile Q(veh	1)	-	-	0.5	0.5	-

Intersection		
Intersection Delay, s/veh	8.9	
Intersection LOS	Α	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		, j	†	7	*	†	7
Traffic Vol, veh/h	0	0	217	31	4	0	116	4	8	0	2	0
Future Vol, veh/h	0	0	217	31	4	0	116	4	8	0	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	236	34	4	0	126	4	9	0	2	0
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	1
Approach		EB		WB			NB			SB		
Opposing Approach		WB		EB			SB			NB		
Opposing Lanes		1		1			3			3		
Conflicting Approach Left		SB		NB			EB			WB		
Conflicting Lanes Left		3		3			1			1		
Conflicting Approach Right		NB		SB			WB			EB		
Conflicting Lanes Right		3		3			1			1		
HCM Control Delay		8.6		8.6			9.6			8.1		
HCM LOS		Α		Α			Α			Α		

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3	
Vol Left, %	100%	0%	0%	0%	89%	0%	0%	0%	
Vol Thru, %	0%	100%	0%	0%	11%	100%	100%	100%	
Vol Right, %	0%	0%	100%	100%	0%	0%	0%	0%	
Sign Control	Stop								
Traffic Vol by Lane	116	4	8	217	35	0	2	0	
LT Vol	116	0	0	0	31	0	0	0	
Through Vol	0	4	0	0	4	0	2	0	
RT Vol	0	0	8	217	0	0	0	0	
Lane Flow Rate	126	4	9	236	38	0	2	0	
Geometry Grp	7	7	7	7	7	7	7	7	
Degree of Util (X)	0.199	0.006	0.011	0.28	0.059	0	0.003	0	
Departure Headway (Hd)	5.669	5.166	4.462	4.268	5.564	5.337	5.337	5.337	
Convergence, Y/N	Yes								
Cap	634	693	802	844	645	0	670	0	
Service Time	3.396	2.893	2.189	1.983	3.286	3.072	3.072	3.072	
HCM Lane V/C Ratio	0.199	0.006	0.011	0.28	0.059	0	0.003	0	
HCM Control Delay	9.8	7.9	7.2	8.6	8.6	8.1	8.1	8.1	
HCM Lane LOS	Α	Α	Α	Α	Α	N	Α	N	
HCM 95th-tile Q	0.7	0	0	1.1	0.2	0	0	0	

Intersection				
Intersection Delay, s/ve	h80.2			
Intersection LOS	F			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			4		ř	f)		Ť	î,		
Traffic Vol, veh/h	0	1	12	227	0	46	3	326	66	89	646	0	
Future Vol, veh/h	0	1	12	227	0	46	3	326	66	89	646	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	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	1	13	247	0	50	3	354	72	97	702	0	
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0	
Approach		EB		WB			NB			SB			
Opposing Approach		WB		EB			SB			NB			
Opposing Lanes		1		1			2			2			
Conflicting Approach Le	eft	SB		NB			EB			WB			
Conflicting Lanes Left		2		2			1			1			
Conflicting Approach Ri	ight	NB		SB			WB			EB			
Conflicting Lanes Right		2		2			1			1			
HCM Control Delay		11.3		19.3			29.3			131.4			
HCM LOS		В		С			D			F			

Lane	NBLn1	NBLn2	EBLn1V	VBLn1	SBLn1	SBLn2	
Vol Left, %	100%	0%	0%	83%	100%	0%	
Vol Thru, %	0%	83%	8%	0%	0%	100%	
Vol Right, %	0%	17%	92%	17%	0%	0%	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	3	392	13	273	89	646	
LT Vol	3	0	0	227	89	0	
Through Vol	0	326	1	0	0	646	
RT Vol	0	66	12	46	0	0	
Lane Flow Rate	3	426	14	297	97	702	
Geometry Grp	7	7	2	2	7	7	
Degree of Util (X)	0.006	0.774	0.029	0.564	0.186	1.25	
Departure Headway (Hd)	7.533	6.898	8.051	7.291	6.917	6.407	
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	
Сар	478	528	447	499	518	569	
Service Time	5.233	4.598	6.051	5.291	4.671	4.16	
HCM Lane V/C Ratio	0.006	0.807	0.031	0.595	0.187	1.234	
HCM Control Delay	10.3	29.4	11.3	19.3	11.3	147.9	
HCM Lane LOS	В	D	В	С	В	F	
HCM 95th-tile Q	0	7	0.1	3.4	0.7	27.1	

	۶	→	•	•	←	•	4	†	/	/	ţ	4	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ķ	f)			4		ň	ħβ		*	ħβ		
Traffic Volume (veh/h)	17	1	190	44	13	10	77	225	14	7	499	11	
Future Volume (veh/h)	17	1	190	44	13	10	77	225	14	7	499	11	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.90	0.95		0.98	1.00		0.97	1.00		0.83	
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	
Work Zone On Approach		No			No			No			No		
	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	18	1	207	48	14	11	84	245	15	8	542	12	
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	595	2	452	290	82	44	174	897	55	249	1083	24	
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.10	0.26	0.26	0.14	0.31	0.31	
Sat Flow, veh/h	1382	7	1421	527	258	139	1781	3396	207	1781	3536	78	
Grp Volume(v), veh/h	18	0	208	73	0	0	84	127	133	8	272	282	
Grp Sat Flow(s), veh/h/ln	1382	0	1428	924	0	0	1781	1777	1826	1781	1777	1837	
Q Serve(g_s), s	0.0	0.0	5.7	0.8	0.0	0.0	2.2	2.8	2.8	0.2	6.1	6.1	
Cycle Q Clear(g_c), s	0.4	0.0	5.7	6.4	0.0	0.0	2.2	2.8	2.8	0.2	6.1	6.1	
Prop In Lane	1.00		1.00	0.66		0.15	1.00		0.11	1.00		0.04	
Lane Grp Cap(c), veh/h	595	0	454	417	0	0	174	470	483	249	544	563	
V/C Ratio(X)	0.03	0.00	0.46	0.18	0.00	0.00	0.48	0.27	0.27	0.03	0.50	0.50	
Avail Cap(c_a), veh/h	1108	0	984	885	0	0	568	1517	1559	421	1371	1417	
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	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	11.4	0.0	13.2	12.9	0.0	0.0	20.8	14.2	14.2	18.1	13.8	13.8	
Incr Delay (d2), s/veh	0.0	0.0	0.7	0.2	0.0	0.0	2.1	0.3	0.3	0.1	0.7	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		0.0	1.7	0.5	0.0	0.0	0.9	0.9	1.0	0.1	2.0	2.1	
Unsig. Movement Delay,	, s/veh												
LnGrp Delay(d),s/veh	11.5	0.0	13.9	13.0	0.0	0.0	22.8	14.5	14.5	18.1	14.5	14.5	
LnGrp LOS	В	Α	В	В	Α	Α	С	В	В	В	В	В	
Approach Vol, veh/h		226			73			344			562		
Approach Delay, s/veh		13.7			13.0			16.5			14.6		
Approach LOS		В			В			В			В		
Timer - Assigned Phs	1	2		4	5	6		8					
Phs Duration (G+Y+Rc),	\$ 1.3	17.3		20.0	9.2	19.4		20.0					
Change Period (Y+Rc),	s 4.5	4.5		4.5	4.5	4.5		4.5					
Max Green Setting (Gma		41.5		33.5	15.5	37.5		33.5					
Max Q Clear Time (g_c+	112,2s	4.8		7.7	4.2	8.1		8.4					
Green Ext Time (p_c), s		1.4		1.6	0.1	3.3		0.4					
Intersection Summary													
HCM 6th Ctrl Delay			14.9										
HCM 6th LOS			В										
			_										

											,	
Intersection												
Intersection Delay, s/ve	e h 70.5											
Intersection LOS	F											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SB	Т
Lane Configurations		4			4		7	ĥ		ř	f)	
Traffic Vol, veh/h	0	1	7	258	4	45	5	355	46	82	816	
Future Vol, veh/h	0	1	7	258	4	45	5	355	46	82	816	
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	(
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	1	8	280	4	49	5	386	50	89	887	
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	(
Approach		EB		WB			NB			SB		
Opposing Approach		WB		EB			SB			NB		
Opposing Lanes		1		1			2			2		
Conflicting Approach Le	eft	SB		NB			EB			WB		
Conflicting Lanes Left		2		2			1			1		
Conflicting Approach R	ight	NB		SB			WB			EB		
Conflicting Lanes Right		2		2			1			1		
HCM Control Delay		12.2		23.6			35.1			283.2		
HCM LOS		В		С			Е			F		
Lane	١			EBLn1V			SBLn2					
Vol Left, %		100%	0%	0%	84%	100%	0%					
Vol Thru, %		0%	89%	12%	1%	0%	100%					
Vol Right, %		0%	11%	88%	15%	0%	0%					
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane		5	401	8	307	82	817					
LT Vol		5	0	0	258	82	0					
Through Vol		0	355	1	4	0	816					
RT Vol		0	46	7	45	0	1					
Lane Flow Rate		5	436	9	334	89	888					
Geometry Grp		7	7	2	2	7	7					
Degree of Util (X)		0.011	0.815	0.019	0.639	0.177	1.633					
Departure Headway (H	d)	8.067	7.468	9.062	7.787	7.132	6.619					
Convergence, Y/N		Yes	Yes	Yes	Yes	Yes	Yes					
Сар		446	488	397	467	502	551					
Service Time		5.767	5.168	7.062	5.787	4.887	4.374					
HCM Lane V/C Ratio		0.011	0.893	0.023	0.715	0.177	1.612					
HCM Control Delay		10.9	35.4	12.2	23.6	11.4	310.5					
HOM Larra LOC		В	г	D	^	В						

В

0

Ε

7.8

В

0.1

С

4.4

В

0.6 49.4

HCM Lane LOS

HCM 95th-tile Q

Movement	
Traffic Volume (veh/h) 45 144 93 136 161 141 48 346 53 195 621 83	
Traffic Volume (veh/h) 45 144 93 136 161 141 48 346 53 195 621 83 Future Volume (veh/h) 45 144 93 136 161 141 48 346 53 195 621 83 Initial Q (Qb), veh 0	
Initial Q (Qb), veh	
Ped-Bike Adj(A_pbT) 1.00 0.99 1.00 0.98 1.00 0.99 1.00 0.98 Parking Bus, Adj 1.00 <	
Parking Bus, Adj 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	
Work Zone On Approach No No No No No No Adj Sat Flow, veh/h/ln 1870 200 202 202 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0	
Adj Sat Flow, veh/h/ln 1870 200 1870 200 190 201 1870 <td></td>	
Adj Flow Rate, veh/h 49 157 101 148 175 153 52 376 58 212 675 90 Peak Hour Factor 0.92	
Peak Hour Factor 0.92 2 2 2 2 2 2 0.01 0.01 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02<	
Percent Heavy Veh, % 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
Cap, veh/h 105 199 128 188 214 187 109 1013 155 255 1290 172 Arrive On Green 0.06 0.19 0.19 0.11 0.23 0.23 0.06 0.33 0.33 0.14 0.41 0.41 Sat Flow, veh/h 1781 1057 680 1781 913 798 1781 3084 472 1781 3142 418 Grp Volume(v), veh/h 49 0 258 148 0 328 52 215 219 212 381 384 Grp Sat Flow(s),veh/h/ln1781 0 1736 1781 0 1711 1781 1777 1778 1781 1777 1784 Q Serve(g_s), s 2.0 0.0 10.9 6.2 0.0 13.9 2.2 7.1 7.2 8.9 12.4 12.4 Cycle Q Clear(g_c), s 2.0 0.0 10.9 6.2 0.0 13.9 2.2 7.1 7.2 8.9 12.4 12.4 Prop In Lane 1.00 0.39 1.00 0.47 1.00 0.27 1.00 0.23 Lane Grp Cap(c), veh/h 105 0 326 188 0 401 109 584 584 255 730 732 V/C Ratio(X) 0.47 0.00 0.79 0.79 0.79 0.00 0.82 0.48 0.37 0.37 0.83 0.52 0.52 Avail Cap(c_a), veh/h 197 0 532 430 0 747 197 584 584 584 360 730 732 HCM Platoon Ratio 1.00	
Arrive On Green 0.06 0.19 0.19 0.11 0.23 0.23 0.06 0.33 0.33 0.14 0.41 0.41 Sat Flow, veh/h 1781 1057 680 1781 913 798 1781 3084 472 1781 3142 418 Grp Volume(v), veh/h 49 0 258 148 0 328 52 215 219 212 381 384 Grp Sat Flow(s), veh/h/In1781 0 1736 1781 0 1711 1781 1777 1778 1781 1777 1784 Q Serve(g_s), s 2.0 0.0 10.9 6.2 0.0 13.9 2.2 7.1 7.2 8.9 12.4 12.4 Cycle Q Clear(g_c), s 2.0 0.0 10.9 6.2 0.0 13.9 2.2 7.1 7.2 8.9 12.4 12.4 Prop In Lane 1.00 0.39 1.00 0.47 1.00 0.27 1.00 <td></td>	
Sat Flow, veh/h 1781 1057 680 1781 913 798 1781 3084 472 1781 3142 418 Grp Volume(v), veh/h 49 0 258 148 0 328 52 215 219 212 381 384 Grp Sat Flow(s), veh/h/In1781 0 1736 1781 0 1711 1781 1777 1778 1781 1777 1784 Q Serve(g_s), s 2.0 0.0 10.9 6.2 0.0 13.9 2.2 7.1 7.2 8.9 12.4 12.4 Cycle Q Clear(g_c), s 2.0 0.0 10.9 6.2 0.0 13.9 2.2 7.1 7.2 8.9 12.4 12.4 Prop In Lane 1.00 0.39 1.00 0.47 1.00 0.27 1.00 0.23 Lane Grp Cap(c), veh/h 105 0 326 188 0 401 109 584 584 255 730	
Grp Volume(v), veh/h 49 0 258 148 0 328 52 215 219 212 381 384 Grp Sat Flow(s), veh/h/In1781 0 1736 1781 0 1711 1781 1777 1778 1781 1777 1784 Q Serve(g_s), s 2.0 0.0 10.9 6.2 0.0 13.9 2.2 7.1 7.2 8.9 12.4 12.4 Cycle Q Clear(g_c), s 2.0 0.0 10.9 6.2 0.0 13.9 2.2 7.1 7.2 8.9 12.4 12.4 Prop In Lane 1.00 0.39 1.00 0.47 1.00 0.27 1.00 0.23 Lane Grp Cap(c), veh/h 105 0 326 188 0 401 109 584 584 255 730 732 V/C Ratio(X) 0.47 0.00 0.79 0.79 0.00 0.82 0.48 0.37 0.37 0.83 0.52	
Grp Sat Flow(s),veh/h/ln1781 0 1736 1781 0 1711 1781 1777 1778 1781 1777 1784 Q Serve(g_s), s 2.0 0.0 10.9 6.2 0.0 13.9 2.2 7.1 7.2 8.9 12.4 12.4 Cycle Q Clear(g_c), s 2.0 0.0 10.9 6.2 0.0 13.9 2.2 7.1 7.2 8.9 12.4 12.4 Prop In Lane 1.00 0.39 1.00 0.47 1.00 0.27 1.00 0.23 Lane Grp Cap(c), veh/h 105 0 326 188 0 401 109 584 584 255 730 732 V/C Ratio(X) 0.47 0.00 0.79 0.79 0.00 0.82 0.48 0.37 0.37 0.83 0.52 0.52 Avail Cap(c_a), veh/h 197 0 532 430 0 747 197 584 584 360 730 732 HCM Platoon Ratio 1.00 1.00 1.00 1.00	
Q Serve(g_s), s 2.0 0.0 10.9 6.2 0.0 13.9 2.2 7.1 7.2 8.9 12.4 12.4 Cycle Q Clear(g_c), s 2.0 0.0 10.9 6.2 0.0 13.9 2.2 7.1 7.2 8.9 12.4 12.4 Prop In Lane 1.00 0.39 1.00 0.47 1.00 0.27 1.00 0.23 Lane Grp Cap(c), veh/h 105 0 326 188 0 401 109 584 584 255 730 732 V/C Ratio(X) 0.47 0.00 0.79 0.79 0.00 0.82 0.48 0.37 0.37 0.83 0.52 0.52 Avail Cap(c_a), veh/h 197 0 532 430 0 747 197 584 584 360 730 732 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 1.00 1.00 1.00 1.00 1.00 1.00 <	
Cycle Q Clear(g_c), s 2.0 0.0 10.9 6.2 0.0 13.9 2.2 7.1 7.2 8.9 12.4 12.4 Prop In Lane 1.00 0.39 1.00 0.47 1.00 0.27 1.00 0.23 Lane Grp Cap(c), veh/h 105 0 326 188 0 401 109 584 584 255 730 732 V/C Ratio(X) 0.47 0.00 0.79 0.79 0.00 0.82 0.48 0.37 0.37 0.83 0.52 0.52 Avail Cap(c_a), veh/h 197 0 532 430 0 747 197 584 584 360 730 732 HCM Platoon Ratio 1.00 <td< td=""><td></td></td<>	
Prop In Lane 1.00 0.39 1.00 0.47 1.00 0.27 1.00 0.23 Lane Grp Cap(c), veh/h 105 0 326 188 0 401 109 584 584 255 730 732 V/C Ratio(X) 0.47 0.00 0.79 0.00 0.82 0.48 0.37 0.37 0.83 0.52 0.52 Avail Cap(c_a), veh/h 197 0 532 430 0 747 197 584 584 360 730 732 HCM Platoon Ratio 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Upstream Filter(I) 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Lane Grp Cap(c), veh/h 105 0 326 188 0 401 109 584 584 255 730 732 V/C Ratio(X) 0.47 0.00 0.79 0.79 0.00 0.82 0.48 0.37 0.37 0.83 0.52 0.52 Avail Cap(c_a), veh/h 197 0 532 430 0 747 197 584 584 360 730 732 HCM Platoon Ratio 1.00	
V/C Ratio(X) 0.47 0.00 0.79 0.79 0.00 0.82 0.48 0.37 0.37 0.83 0.52 0.52 Avail Cap(c_a), veh/h 197 0 532 430 0 747 197 584 584 360 730 732 HCM Platoon Ratio 1.00	
Avail Cap(c_a), veh/h 197 0 532 430 0 747 197 584 584 360 730 732 HCM Platoon Ratio 1.00 1.	
HCM Platoon Ratio 1.00 1.	
Upstream Filter(I) 1.00 0.00 1.00 1.00 0.00 1.00 1.00 1.0	
\mathcal{N}_{I}	
11 'C D 1 / 1 / 1 0 4 0 0 0 7 0 0 E 0 0 0 7 0 0 4 0 7 10 7 10 0 1 0 0 4 0 1 0 1 0 1 0 1 0 1 0 1 0	
Uniform Delay (d), s/veh 34.9 0.0 29.7 33.5 0.0 27.8 34.8 19.7 19.7 32.0 17.0 17.0	
Incr Delay (d2), s/veh 3.2 0.0 4.3 7.0 0.0 4.1 3.2 1.8 1.8 10.8 2.7 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.	
%ile BackOfQ(50%),veh/ln1.0	
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh 38.1 0.0 34.0 40.5 0.0 31.9 38.1 21.5 21.6 42.7 19.6 19.7	
LnGrp LOS D A C D A C D C C D B B	
Approach Vol, veh/h 307 476 486 977	
Approach Delay, s/veh 34.7 34.6 23.3 24.7	
Approach LOS C C C	
Timer - Assigned Phs 1 2 3 4 5 6 7 8	
Phs Duration (G+Y+Rc), \$5.5 29.7 12.6 18.9 9.2 36.0 9.0 22.5	
Change Period (Y+Rc), s 4.5 4.5 4.5 4.5 4.5 4.5 4.5	
Max Green Setting (Gmat/5, \$ 24.5 18.5 23.5 8.5 31.5 8.5 33.5	
Max Q Clear Time (g_c+ff0,9s 9.2 8.2 12.9 4.2 14.4 4.0 15.9	
Green Ext Time (p_c), s 0.2 2.1 0.3 1.1 0.0 4.2 0.0 2.0	
Intersection Summary	
HCM 6th Ctrl Delay 27.8	
HCM 6th LOS C	

Intersection			
Intersection Delay, s/ve2	97.7		
Intersection LOS	F		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			4		7	†	7	Ť	ĵ,		
Traffic Vol, veh/h	0	0	11	90	1	1	1	415	29	3	1055	0	
Future Vol, veh/h	0	0	11	90	1	1	1	415	29	3	1055	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	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	0	12	98	1	1	1	451	32	3	1147	0	
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	0	
Approach		EB		WB			NB			SB			
Opposing Approach		WB		EB			SB			NB			
Opposing Lanes		1		1			2			3			
Conflicting Approach Lo	eft	SB		NB			EB			WB			
Conflicting Lanes Left		2		3			1			1			
Conflicting Approach R	ight	NB		SB			WB			EB			
Conflicting Lanes Right		3		2			1			1			
HCM Control Delay		11.5		14.5			21.8			441.3			
HCM LOS		В		В			С			F			

Lane	NBLn1	NBLn2	NBLn3	EBLn1\	VBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	98%	100%	0%
Vol Thru, %	0%	100%	0%	0%	1%	0%	100%
Vol Right, %	0%	0%	100%	100%	1%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	415	29	11	92	3	1055
LT Vol	1	0	0	0	90	3	0
Through Vol	0	415	0	0	1	0	1055
RT Vol	0	0	29	11	1	0	0
Lane Flow Rate	1	451	32	12	100	3	1147
Geometry Grp	7	7	7	7	7	8	8
Degree of Util (X)	0.002	0.704	0.043	0.023	0.215	0.006	1.936
Departure Headway (Hd)	6.884	6.373	5.659	8.606	9.295	6.582	6.078
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Сар	523	573	637	418	389	540	596
Service Time	4.584	4.073	3.359	6.306	6.995	4.372	3.868
HCM Lane V/C Ratio	0.002	0.787	0.05	0.029	0.257	0.006	1.924
HCM Control Delay	9.6	22.8	8.6	11.5	14.5	9.4	442.5
HCM Lane LOS	Α	С	Α	В	В	Α	F
HCM 95th-tile Q	0	5.6	0.1	0.1	0.8	0	74

	•	• 4	L	†	/	-	ţ
Movement	WBL	_ WI	BR	NBT	NBR	SBL	SBT
Lane Configurations	ች		7	†		ሻ	^
Traffic Volume (veh/h)	158	•	33	431	103	109	877
Future Volume (veh/h)	158		33	431	103	109	877
Initial Q (Qb), veh	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		.00		0.98	1.00	•
Parking Bus, Adj	1.00		.00	1.00	1.00	1.00	1.00
Work Zone On Approac				No			No
Adj Sat Flow, veh/h/ln	1870		70	1870	1870	1870	1870
Adj Flow Rate, veh/h	172		36	468	112	118	953
Peak Hour Factor	0.92		.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2		2	2	2	2	2
Cap, veh/h	256		28	879	209	150	1949
Arrive On Green	0.14		.14	0.31	0.31	0.08	0.55
Sat Flow, veh/h	1781		85	2931	674	1781	3647
			36	292	288	118	953
Grp Volume(v), veh/h	172						
Grp Sat Flow(s), veh/h/l			85	1777	1735	1781	1777
Q Serve(g_s), s	2.7		0.6	4.0	4.0	1.9	4.8
Cycle Q Clear(g_c), s	2.7		0.6	4.0	4.0	1.9	4.8
Prop In Lane	1.00		.00	F F 4	0.39	1.00	1010
Lane Grp Cap(c), veh/h			28	551	538	150	1949
V/C Ratio(X)	0.67		.16	0.53	0.54	0.79	0.49
Avail Cap(c_a), veh/h	1098		77	1095	1069	335	3406
HCM Platoon Ratio	1.00		.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/ve			1.0	8.3	8.3	13.1	4.1
Incr Delay (d2), s/veh	3.1	(0.3	8.0	0.8	8.7	0.2
Initial Q Delay(d3),s/vel	h 0.0) (0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),ve	h/ln1.0) (0.2	0.9	0.9	0.9	0.3
Unsig. Movement Delay	y, s/veh	eh					
LnGrp Delay(d),s/veh	14.9	1	1.3	9.1	9.2	21.8	4.3
LnGrp LOS	В	}	В	Α	Α	С	Α
Approach Vol, veh/h	208	}		580			1071
Approach Delay, s/veh				9.1			6.2
Approach LOS	В			Α			Α
• •							
Timer - Assigned Phs	1		2				6
Phs Duration (G+Y+Rc			3.6				20.5
Change Period (Y+Rc),			4.5				4.5
Max Green Setting (Gr			8.0				28.0
Max Q Clear Time (g_c			6.0				6.8
Green Ext Time (p_c),	s 0.0) 2	2.6				6.5
Intersection Summary							
HCM 6th Ctrl Delay				8.0			
HCM 6th LOS				Α			
I IOW OUI LOS				^			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4		ች	4	7	ች	^			ΦÞ		
Traffic Volume (veh/h)	13	0	57	185	0	30	17	504	0	0	988	18	
Future Volume (veh/h)	13	0	57	185	0	30	17	504	0	0	988	18	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	•	0.84	1.00	•	1.00	1.00		1.00	1.00		0.95	
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	
Work Zone On Approac		No	1.00	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	0	0	1870	1870	
Adj Flow Rate, veh/h	14	0	62	201	0	33	18	548	0	0	1074	20	
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	0.52	0.52	2	2	
Cap, veh/h	55	0	242	342	0	152	31	1632	0	0	1300	24	
Arrive On Green	0.21	0.00	0.21	0.10	0.00	0.10	0.02	0.46	0.00	0.00	0.36	0.36	
Sat Flow, veh/h	257	0.00	1137	3563	0.00	1585	1781	3647	0.00	0.00	3659	66	
Grp Volume(v), veh/h	76	0	0	201	0	33	18	548	0	0	535	559	
Grp Sat Flow(s),veh/h/li		0	0	1781	0	1585	1781	1777	0	0	1777	1855	
Q Serve(g_s), s	2.6	0.0	0.0	3.1	0.0	1.1	0.6	5.7	0.0	0.0	15.9	15.9	
Cycle Q Clear(g_c), s	2.6	0.0	0.0	3.1	0.0	1.1	0.6	5.7	0.0	0.0	15.9	15.9	
Prop In Lane	0.18		0.82	1.00		1.00	1.00		0.00	0.00		0.04	
Lane Grp Cap(c), veh/h		0	0	342	0	152	31	1632	0	0	648	676	
V/C Ratio(X)	0.26	0.00	0.00	0.59	0.00	0.22	0.58	0.34	0.00	0.00	0.83	0.83	
Avail Cap(c_a), veh/h	431	0	0	980	0	436	123	1986	0	0	733	765	
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	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	
Uniform Delay (d), s/ve	h 19.1	0.0	0.0	25.2	0.0	24.3	28.4	10.1	0.0	0.0	16.8	16.8	
Incr Delay (d2), s/veh	0.5	0.0	0.0	1.6	0.0	0.7	16.1	0.1	0.0	0.0	7.0	6.7	
Initial Q Delay(d3),s/vel	n 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%),vel	h/lr0.8	0.0	0.0	1.3	0.0	0.4	0.4	1.8	0.0	0.0	6.6	6.8	
Unsig. Movement Delay	y, s/veh	l											
LnGrp Delay(d),s/veh	19.5	0.0	0.0	26.8	0.0	25.0	44.5	10.2	0.0	0.0	23.8	23.5	
LnGrp LOS	В	Α	Α	С	Α	С	D	В	Α	Α	С	С	
Approach Vol, veh/h		76			234			566			1094		
Approach Delay, s/veh		19.5			26.5			11.3			23.7		
Approach LOS		В			С			В			С		
Timer - Assigned Phs		2		4	5	6		8					
Phs Duration (G+Y+Rc), s	31.2		16.9	5.5	25.7		10.1					
Change Period (Y+Rc),		4.5		4.5	4.5	4.5		4.5					
Max Green Setting (Gm		32.5		18.0	4.0	24.0		16.0					
Max Q Clear Time (g_c		7.7		4.6	2.6	17.9		5.1					
Green Ext Time (p_c), s		3.5		0.3	0.0	3.3		0.6					
Intersection Summary													
HCM 6th Ctrl Delay			20.3										
HCM 6th LOS			С										
Notes													

User approved volume balancing among the lanes for turning movement.

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Movement EB	L EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
	ነ ተተ		ሻሻ	↑ ⊅		ሻሻ	^	7	ች	↑ ↑		
Traffic Volume (veh/h) 15		200	327	650	30	197	275	179	57	609	498	
Future Volume (veh/h) 15		200	327	650	30	197	275	179	57	609	498	
	0 0		0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT) 1.0		0.98	1.00		0.98	1.00	•	0.98	1.00	•	0.98	
Parking Bus, Adj 1.0			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No	1.00	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00	
Adj Sat Flow, veh/h/ln 187		1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h 16		217	355	707	33	214	299	195	62	662	541	
Peak Hour Factor 0.9		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
	2 2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h 19			411	1086	51	270	1201	715	71	555	449	
Arrive On Green 0.1		0.31	0.12	0.31	0.31	0.08	0.34	0.34	0.04	0.30	0.30	
Sat Flow, veh/h 178		1549	3456	3454	161	3456	3554	1559	1781	1849	1498	
Grp Volume(v), veh/h 16		217	355	364	376	214	299	195	62	636	567	
Grp Sat Flow(s),veh/h/ln178		1549	1728	1777	1838	1728	1777	1559	1781	1777	1570	
Q Serve(g_s), s 9.			10.1	17.6	17.7	6.1	6.1	7.8	3.5	30.0	30.0	
Cycle Q Clear(g_c), s 9.			10.1	17.6	17.7	6.1	6.1	7.8	3.5	30.0	30.0	
Prop In Lane 1.0		1.00	1.00		0.09	1.00	1001	1.00	1.00		0.95	
Lane Grp Cap(c), veh/h 19			411	559	578	270	1201	715	71	533	471	
V/C Ratio(X) 0.8		0.46	0.86	0.65	0.65	0.79	0.25	0.27	0.87	1.19	1.20	
Avail Cap(c_a), veh/h 23		474	411	559	578	270	1201	715	71	533	471	
HCM Platoon Ratio 1.0		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I) 1.0		1.00	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh 43.		28.1	43.3	29.5	29.6	45.3	23.9	16.9	47.7	35.0	35.0	
Incr Delay (d2), s/veh 17.		3.2	15.5	5.5	5.3	13.9	0.2	0.3	62.3	104.3	110.5	
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	
%ile BackOfQ(50%),veh/lr4.	3.1	4.5	5.1	8.0	8.3	3.1	2.5	2.7	2.7	27.9	25.4	
Unsig. Movement Delay, s/v	eh											
LnGrp Delay(d),s/veh 61.	3 27.4	31.3	58.8	35.0	34.8	59.2	24.1	17.1	110.1	139.3	145.5	
LnGrp LOS	E C	С	Е	С	С	Е	С	В	F	F	F	
Approach Vol, veh/h	716			1095			708			1265		
Approach Delay, s/veh	36.3			42.7			32.8			140.6		
Approach LOS	D			D			С			F		
	1 0	2		-	_	7	0					
Timer - Assigned Phs	1 2		4	5	6	7	8					
Phs Duration (G+Y+Rc), \$6.			35.1	15.2	37.7	8.2	38.9					
Change Period (Y+Rc), \$ 4.			* 5.1	* 4.2	* 6.3	* 4.2	5.1					
Max Green Setting (Gmax)1			* 30	* 13	* 30	* 4	33.7					
Max Q Clear Time (g_c+ltt2),			32.0	11.0	19.7	5.5	9.8					
Green Ext Time (p_c), s 0.	3.8	0.0	0.0	0.0	3.9	0.0	3.7					
Intersection Summary												
HCM 6th Ctrl Delay		72.4										
HCM 6th LOS		E										
Notes												

^{*} HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

	→	•	•	•	1	/
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	ħβ		*	^	ች	1
Traffic Volume (veh/h)	500	67	116	910	21	90
Future Volume (veh/h)	500	67	116	910	21	90
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	U	0.95	1.00	U	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
		1.00	1.00		No	1.00
Work Zone On Approac		1070	1070	No		4070
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	543	73	126	989	23	98
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	1054	141	162	2094	156	138
Arrive On Green	0.34	0.34	0.09	0.59	0.09	0.09
Sat Flow, veh/h	3222	419	1781	3647	1781	1585
Grp Volume(v), veh/h	307	309	126	989	23	98
Grp Sat Flow(s), veh/h/li		1770	1781	1777	1781	1585
Q Serve(g_s), s	3.9	3.9	1.9	4.4	0.3	1.7
	3.9	3.9	1.9	4.4	0.3	1.7
Cycle Q Clear(g_c), s	ა.ყ			4.4		
Prop In Lane	F00	0.24	1.00	0004	1.00	1.00
Lane Grp Cap(c), veh/h		596	162	2094	156	138
V/C Ratio(X)	0.51	0.52	0.78	0.47	0.15	0.71
Avail Cap(c_a), veh/h	1194	1189	627	4214	1152	1025
HCM Platoon Ratio	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
Uniform Delay (d), s/vel		7.4	12.4	3.3	11.7	12.4
Incr Delay (d2), s/veh	0.7	0.7	7.9	0.2	0.4	6.5
Initial Q Delay(d3),s/veh		0.0	0.0	0.2	0.4	0.0
%ile BackOfQ(50%),vel		8.0	0.9	0.0	0.1	0.7
Unsig. Movement Delay					16.5	10.5
LnGrp Delay(d),s/veh	8.1	8.1	20.3	3.4	12.2	18.8
LnGrp LOS	Α	Α	С	Α	В	В
Approach Vol, veh/h	616			1115	121	
Approach Delay, s/veh	8.1			5.3	17.6	
Approach LOS	Α			A	В	
	,,			,,		
Timer - Assigned Phs	1	2				6
Phs Duration (G+Y+Rc)), s7.0	13.9				20.9
Change Period (Y+Rc),		4.5				4.5
Max Green Setting (Gm		18.7				33.0
Max Q Clear Time (g_c		5.9				6.4
Green Ext Time (p_c), s		2.9				7.4
Green Ext Time (p_c), s	U. I	2.3				7.4
Intersection Summary						
HCM 6th Ctrl Delay			7.0			
HCM 6th LOS			Α.			
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	1/1	^	7	ሻ	^	7	1/1	ħβ		ሻ	^	7	
Traffic Volume (veh/h)	179	113	259	131	229	46	308	584	44	53	751	401	
Future Volume (veh/h)	179	113	259	131	229	46	308	584	44	53	751	401	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.94	1.00		0.98	1.00		0.98	
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	
Work Zone On Approac	h	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	195	123	282	142	249	50	335	635	48	58	816	436	
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	424	924	399	174	815	343	330	1213	92	107	1163	508	
Arrive On Green	0.12	0.26	0.26	0.10	0.23	0.23	0.10	0.36	0.36	0.06	0.33	0.33	
Sat Flow, veh/h	3456	3554	1534	1781	3554	1496	3456	3343	252	1781	3554	1553	
Grp Volume(v), veh/h	195	123	282	142	249	50	335	337	346	58	816	436	
Grp Sat Flow(s),veh/h/li	n1728	1777	1534	1781	1777	1496	1728	1777	1818	1781	1777	1553	
Q Serve(g_s), s	4.7	2.4	14.8	6.9	5.2	2.4	8.5	13.3	13.3	2.8	17.8	23.4	
Cycle Q Clear(g_c), s	4.7	2.4	14.8	6.9	5.2	2.4	8.5	13.3	13.3	2.8	17.8	23.4	
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		1.00	
Lane Grp Cap(c), veh/h	424	924	399	174	815	343	330	645	660	107	1163	508	
V/C Ratio(X)	0.46	0.13	0.71	0.82	0.31	0.15	1.01	0.52	0.52	0.54	0.70	0.86	
Avail Cap(c_a), veh/h	428	1275	551	182	1179	496	330	645	660	178	1239	541	
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/vel	h 36.3	25.2	29.8	39.3	28.4	27.3	40.2	22.3	22.3	40.6	26.1	28.0	
Incr Delay (d2), s/veh	0.9	0.1	3.0	21.6	0.3	0.2	53.1	0.8	0.8	1.6	1.7	12.5	
Initial Q Delay(d3),s/vel	า 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%),vel		1.0	5.5	4.0	2.2	0.8	5.9	5.3	5.4	1.2	7.3	9.8	
Unsig. Movement Delay													
LnGrp Delay(d),s/veh	37.2	25.3	32.8	60.9	28.6	27.5	93.3	23.0	23.0	42.2	27.8	40.4	
LnGrp LOS	D	С	С	Е	С	С	F	С	С	D	С	D	
Approach Vol, veh/h		600			441			1018			1310		
Approach Delay, s/veh		32.7			38.9			46.1			32.6		
Approach LOS		С			D			D			С		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc)	1 1 1 2	28.6	13.0	34.1	15.9	25.9	9.8	37.3					
Change Period (Y+Rc),		5.5	4.5	5.0	5.0	5.5	4.5	5.0					
Max Green Setting (Gm		31.9	8.5	31.0	11.0	29.5	8.9	30.6					
Max Q Clear Time (g_c	, ,	16.8	10.5	25.4	6.7	7.2	4.8	15.3					
Green Ext Time (p_c), s		1.8	0.0	3.2	0.3	2.0	0.0	3.5					
Intersection Summary													
HCM 6th Ctrl Delay			37.5										
HCM 6th LOS			37.3 D										
I IOIVI UIII LUO			D										

Intersection						
Int Delay, s/veh	3.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		†	7	ሻ	†
Traffic Vol, veh/h	0	167	718	0	84	361
Future Vol, veh/h	0	167	718	0	84	361
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	-	-	150	50	-
Veh in Median Storage	e, # 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	182	780	0	91	392
Major/Minor	Minor1	N	/lajor1		Major2	
Conflicting Flow All	1354	780	0	0	780	0
Stage 1	780	-	-	-	700	-
Stage 2	574	<u>-</u>	_	_	_	_
Critical Hdwy	6.42	6.22	_	_	4.12	_
Critical Hdwy Stg 1	5.42	-	_	_	- 1.12	_
Critical Hdwy Stg 2	5.42	_	_	_	_	-
Follow-up Hdwy	3.518	3.318	_	_	2.218	_
Pot Cap-1 Maneuver	165	395	-	_	837	_
Stage 1	452	-	_	_	-	_
Stage 2	563	_	_	_	_	-
Platoon blocked, %			_	_		_
Mov Cap-1 Maneuver	147	395	_	_	837	-
Mov Cap-2 Maneuver	147	-	_	_	-	_
Stage 1	452	_	_	_	-	_
Stage 2	502	_	_	_	_	_
A nama a a b	WD		ND		CD	
Approach	WB		NB		SB	
HCM Control Delay, s	21.6		0		1.9	
HCM LOS	С					
Minor Lane/Major Mvm	nt	NBT	NBRV	VBLn1	SBL	SBT
Capacity (veh/h)			-	395	837	-
HCM Lane V/C Ratio		-	-		0.109	-
HCM Control Delay (s)		-	-	21.6	9.8	-
HCM Lane LOS		-	-	С	Α	-
LIOMAGER OVER OVER	,			0.0		

2.3 0.4

HCM 95th %tile Q(veh)

Intersection		
Intersection Delay, s/veh	10.3	
Intersection LOS	В	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		,	†	7	, J	†	7
Traffic Vol, veh/h	1	3	118	20	0	3	248	3	34	0	6	2
Future Vol, veh/h	1	3	118	20	0	3	248	3	34	0	6	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	3	128	22	0	3	270	3	37	0	7	2
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	1
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			3			3		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	3			3			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	3			3			1			1		
HCM Control Delay	8.4			8.8			11.3			7.8		
HCM LOS	Α			Α			В			Α		

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3	
Vol Left, %	100%	0%	0%	1%	87%	0%	0%	0%	
Vol Thru, %	0%	100%	0%	2%	0%	100%	100%	0%	
Vol Right, %	0%	0%	100%	97%	13%	0%	0%	100%	
Sign Control	Stop								
Traffic Vol by Lane	248	3	34	122	23	0	6	2	
LT Vol	248	0	0	1	20	0	0	0	
Through Vol	0	3	0	3	0	0	6	0	
RT Vol	0	0	34	118	3	0	0	2	
Lane Flow Rate	270	3	37	133	25	0	7	2	
Geometry Grp	7	7	7	7	7	7	7	7	
Degree of Util (X)	0.407	0.004	0.043	0.174	0.041	0	0.009	0.003	
Departure Headway (Hd)	5.437	4.935	4.232	4.716	5.843	5.229	5.229	4.524	
Convergence, Y/N	Yes								
Cap	663	725	846	763	613	0	683	789	
Service Time	3.166	2.664	1.961	2.437	3.573	2.97	2.97	2.265	
HCM Lane V/C Ratio	0.407	0.004	0.044	0.174	0.041	0	0.01	0.003	
HCM Control Delay	11.9	7.7	7.2	8.4	8.8	8	8	7.3	
HCM Lane LOS	В	Α	Α	Α	Α	N	Α	Α	
HCM 95th-tile Q	2	0	0.1	0.6	0.1	0	0	0	

Intersection												
Intersection Delay, s/vell	72.4											
Intersection LOS	F											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		*	ĵ.		ች	f _a	
Traffic Vol, veh/h	0	1	7	108	2	95	7	668	232	45	333	2
Future Vol, veh/h	0	1	7	108	2	95	7	668	232	45	333	2
	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	8	117	2	103	8	726	252	49	362	2
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Approach		EB		WB			NB			SB		
Opposing Approach		WB		EB			SB			NB		
Opposing Lanes		1		1			2			2		
Conflicting Approach Lef	ft	SB		NB			EB			WB		
Conflicting Lanes Left		2		2			1			1		
Conflicting Approach Rig	ght	NB		SB			WB			EB		
Conflicting Lanes Right		2		2			1			1		
HCM Control Delay		11.2		15.1			273.9			18.2		
HCM LOS		В		С			F			С		
Lane	N	IBLn1	NBLn2	EBLn ₁ V	VBLn1	SBLn1	SBLn2					
Vol Left, %		100%	0%	0%	53%	100%	0%					
Vol Thru, %		0%	74%	12%	1%	0%	99%					
Vol Right, %		0%	26%	88%	46%	0%	1%					
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane		7	900	8	205	45	335					
LT Vol		7	0	0	108	45	0					
Through Vol		0	668	1	2	0	333					
RT Vol		0	232	7	95	0	2					
Lane Flow Rate		8	978	9	223	49	364					
Geometry Grp		7	7	2	2	7	7					
Degree of Util (X)		0.014	1.561	0.017	0.395	0.089	0.609					
Departure Headway (Hd	1	6 435	5 744	8 078	7.393	7.177	6.66					

Yes

559

9.2

0 51.1

0.014 1.514

Yes

646

276

Yes

446

4.137 3.446 6.078 5.393 4.877

11.2

В

0.1

Yes

490

0.02 0.455 0.098

15.1

С

1.9

Yes

502

10.6

В

0.3

Yes

546

4.36

0.667

19.2

C

4.1

Convergence, Y/N

HCM Lane V/C Ratio

HCM Control Delay

HCM Lane LOS

HCM 95th-tile Q

Service Time

Cap

Movement EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR	
Lane Configurations 🦎 🗘 🏲 🏲	
Traffic Volume (veh/h) 13 32 121 31 7 7 163 514 44 3 314 8	
Future Volume (veh/h) 13 32 121 31 7 7 163 514 44 3 314 8	
Initial Q (Qb), veh 0 0 0 0 0 0 0 0 0 0	
Ped-Bike Adj(A_pbT) 0.99 0.97 0.99 0.98 1.00 0.96 1.00 0.95	
Parking Bus, Adj 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	
Work Zone On Approach No No No No	
Adj Sat Flow, veh/h/ln 1870 1870 1870 1870 1870 1870 1870 1870	
Adj Flow Rate, veh/h 14 35 132 34 8 8 177 559 48 3 341 9	
Peak Hour Factor 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 2 2 2 2 2 2	
Cap, veh/h 536 70 264 283 66 33 297 1070 92 128 810 21	
Arrive On Green 0.21 0.21 0.21 0.21 0.21 0.21 0.17 0.32 0.32 0.07 0.23 0.23	
Sat Flow, veh/h 1388 336 1267 506 317 157 1781 3301 283 1781 3532 93	
Grp Volume(v), veh/h 14 0 167 50 0 0 177 300 307 3 171 179	
Grp Sat Flow(s),veh/h/ln1388 0 1603 979 0 0 1781 1777 1807 1781 1777 1848	
Q Serve(g_s), s 0.0 0.0 3.1 0.1 0.0 0.0 3.1 4.7 4.7 0.1 2.8 2.8	
Cycle Q Clear(g_c), s 0.2 0.0 3.1 3.2 0.0 0.0 3.1 4.7 4.7 0.1 2.8 2.8	
Prop In Lane 1.00 0.79 0.68 0.16 1.00 0.16 1.00 0.05	
Lane Grp Cap(c), veh/h 536 0 334 381 0 0 297 576 586 128 407 424	
V/C Ratio(X) 0.03 0.00 0.50 0.13 0.00 0.00 0.60 0.52 0.52 0.02 0.42 0.42	
Avail Cap(c_a), veh/h 1407 0 1339 1217 0 0 862 2526 2569 496 2161 2249	
HCM Platoon Ratio 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	
Upstream Filter(I) 1.00 0.00 1.00 1.00 0.00 0.00 1.00 1.0	
Uniform Delay (d), s/veh 10.8 0.0 11.9 11.1 0.0 0.0 13.1 9.4 9.4 14.7 11.2 11.2	
Incr Delay (d2), s/veh 0.0 0.0 1.2 0.2 0.0 0.0 1.9 0.7 0.7 0.1 0.7 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.	
%ile BackOfQ(50%),veh/lr0.1 0.0 1.0 0.3 0.0 0.0 1.1 1.2 1.2 0.0 0.8 0.9	
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh 10.8 0.0 13.1 11.2 0.0 0.0 15.1 10.1 10.1 14.8 11.9 11.9	
LnGrp LOS B A B B B B B B B B B B B B B B B B B	
Approach Vol, veh/h 181 50 784 353	
Approach Delay, s/veh 12.9 11.2 11.2 11.9	
Approach LOS B B B	
Timer - Assigned Phs 1 2 4 5 6 8	
Phs Duration (G+Y+Rc), s6.9 15.6 11.6 10.2 12.3 11.6	
Change Period (Y+Rc), s 4.5 4.5 4.5 4.5 4.5	
Max Green Setting (Gmax9, \$ 48.5 28.5 16.5 41.5 28.5	
Max Q Clear Time (g_c+l12),1s 6.7 5.1 5.1 4.8 5.2	
Green Ext Time (p_c), s 0.0 3.8 1.1 0.3 2.0 0.2	
Intersection Summary	
HCM 6th Ctrl Delay 11.6	
HCM 6th LOS B	

Intersection														
Intersection Delay, s/v	e h 97.8													
Intersection LOS	F													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		

Lane Configurations		4			4		ች	- 1}		ች	₽		
Traffic Vol, veh/h	1	1	5	99	8	87	13	827	106	45	411	0	
Future Vol, veh/h	1	1	5	99	8	87	13	827	106	45	411	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	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	1	1	5	108	9	95	14	899	115	49	447	0	
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0	
Approach	EB			WB			NB			SB			
Opposing Approach	WB			EB			SB			NB			
Opposing Lanes	1			1			2			2			
Conflicting Approach L	eft SB			NB			EB			WB			
Conflicting Lanes Left	2			2			1			1			
Conflicting Approach R	ightNB			SB			WB			EB			
Conflicting Lanes Right	t 2			2			1			1			
HCM Control Delay	11.7			15.3			319.9			24.9			
HCM LOS	В			С			F			С			

Lane	NBLn11	NBLn2	EBLn ₁ V	VBLn1	SBLn1	SBLn2						
Vol Left, %	100%	0%	14%	51%	100%	0%						
Vol Thru, %	0%	89%	14%	4%	0%	100%						
Vol Right, %	0%	11%	71%	45%	0%	0%						
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop						
Traffic Vol by Lane	13	933	7	194	45	411						
LT Vol	13	0	1	99	45	0						
Through Vol	0	827	1	8	0	411						
RT Vol	0	106	5	87	0	0						
Lane Flow Rate	14	1014	8	211	49	447						
Geometry Grp	7	7	2	2	7	7						
Degree of Util (X)	0.026	1.67	0.015	0.383	0.088	0.745						
Departure Headway (Hd)	6.515	5.927	8.571	7.661	7.233	6.72						
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes						
Сар	553	619	420	472	498	541						
Service Time	4.215	3.627	6.571	5.661	4.933	4.42						
HCM Lane V/C Ratio	0.025	1.638	0.019	0.447	0.098	0.826						
HCM Control Delay	9.4	324.2	11.7	15.3	10.6	26.5						
HCM Lane LOS	Α	F	В	С	В	D						
HCM 95th-tile Q	0.1	57.5	0	1.8	0.3	6.4						

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	¥	ĵ.		ř	f)		Ĭ	ħβ		Ĭ	ħβ		
Traffic Volume (veh/h)	6	111	60	142	190	150	92	570	199	96	371	9	
Future Volume (veh/h)	6	111	60	142	190	150	92	570	199	96	371	9	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.97	
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	
Work Zone On Approach		No	4070	4070	No	4070	4070	No	4070	4070	No	4070	
	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	7	121	65	154	207	163	100	620	216	104	403	10	
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	23	196	105	200	262	206	167	835	291	170	1153	29	
Arrive On Green	0.01	0.17	0.17	0.11	0.27	0.27	0.09	0.32	0.32	0.10	0.33	0.33	
	1781	1139	612	1781	963	759	1781	2575	896	1781	3541	88	
Grp Volume(v), veh/h	7	0	186	154	0	370	100	428	408	104	202	211	
Grp Sat Flow(s), veh/h/lr		0	1751	1781	0	1722	1781	1777	1694	1781	1777	1852	
Q Serve(g_s), s	0.2	0.0	6.0	5.1	0.0	12.1	3.3	13.0	13.1	3.4	5.3	5.3	
Cycle Q Clear(g_c), s	0.2	0.0	6.0	5.1	0.0	12.1	3.3	13.0	13.1	3.4	5.3	5.3	
Prop In Lane	1.00	^	0.35	1.00	^	0.44	1.00	F70	0.53	1.00	F70	0.05	
Lane Grp Cap(c), veh/h	23	0	301	200	0	468	167	576	549	170	579	603	
V/C Ratio(X)	0.31	0.00	0.62	0.77	0.00	0.79	0.60	0.74	0.74	0.61	0.35	0.35	
Avail Cap(c_a), veh/h	220	0	676	513	0	949	395	920	877	278	803	837	
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	0.00	1.00	1.00 26.5	1.00	1.00	1.00 26.4	1.00 15.6	1.00 15.6	
Uniform Delay (d), s/veh	7.3	0.0	23.3	26.2 6.1	0.0	20.5	3.4	18.3 1.9	2.0	3.6	0.4	0.3	
Incr Delay (d2), s/veh		0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.4	0.0	
Initial Q Delay(d3),s/veh %ile BackOfQ(50%),veh		0.0	2.5	2.4	0.0	4.9	1.4	4.8	4.6	1.5	1.9	2.0	
Unsig. Movement Delay			2.0	2.4	0.0	4.3	1.4	4.0	4.0	1.0	1.5	2.0	
LnGrp Delay(d),s/veh	37.1	0.0	25.4	32.3	0.0	23.6	29.9	20.2	20.3	30.0	16.0	16.0	
LnGrp LOS	D	Α	23.4 C	32.3 C	Α	23.0 C	23.3 C	20.2 C	20.5 C	30.0 C	В	В	
Approach Vol, veh/h		193			524			936			517	<u> </u>	
Approach Delay, s/veh		25.8			26.2			21.3			18.8		
Approach LOS		25.0 C			20.2 C			21.3 C			В		
					U						Б		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc)		24.2	11.3	15.0	10.2	24.3	5.3	21.0					
Change Period (Y+Rc),		4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gm	, ,	31.5	17.5	23.5	13.5	27.5	7.5	33.5					
Max Q Clear Time (g_c-		15.1	7.1	8.0	5.3	7.3	2.2	14.1					
Green Ext Time (p_c), s	0.1	4.7	0.3	0.9	0.1	2.1	0.0	2.4					
Intersection Summary													
HCM 6th Ctrl Delay			22.3										
HCM 6th LOS			С										

Intersection												
Intersection Delay, s/vel	h 83.7											
Intersection LOS	F											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ች	↑	7	ች	ĵ.	
Traffic Vol, veh/h	0	0	6	54	2	2	9	958	63	2	494	3
Future Vol, veh/h	0	0	6	54	2	2	9	958	63	2	494	3
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	7	59	2	2	10	1041	68	2	537	3
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	0
Approach		EB		WB			NB			SB		
Opposing Approach		WB		EB			SB			NB		
Opposing Lanes		1		1			2			3		
Conflicting Approach Le	eft	SB		NB			EB			WB		
Conflicting Lanes Left		2		3			1			1		
Conflicting Approach Rig	ght	NB		SB			WB			EB		
Conflicting Lanes Right	_	3		2			1			1		
HCM Control Delay		10.8		13			255.9			56.5		
HCM LOS		В		В			F			F		
Lane	1	NBLn11	NBLn21	NBLn3	EBLn ₁ V	VBLn1	SBLn1	SBLn2				
Vol Left, %		100%	0%	0%	0%	93%	100%	0%				
Vol Thru, %		0%	100%	0%	0%	3%	0%	99%				
Vol Right, %		0%	0%	100%	100%	3%	0%	1%				
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop	Stop				
Traffic Vol by Lane		9	958	63	6	58	2	497				
LT Vol		9	0	0	0	54	2	0				
Through Vol		0	958	0	0	2	0	494				
RT Vol		0	0	63	6	2	0	3				
Lane Flow Rate		10	1041	68	7	63	2	540				
Geometry Grp		7	7	7	7	7	8	8				

0.14 0.004 0.956

Yes

464

0.004

10.5

В

0 12.1

Yes

502

1.076

56.7

8.038 8.892 7.753 7.245

Yes

406

0.155

13

В

0.5

0.016

Yes

604

5.899 5.394

Yes

677

0.017 1.538 0.089

53.5

8.8 274.5

0

1.56 0.089 0.013

4.687

Yes

760

7.9

Α

0.3

Yes

448

3.657 3.151 2.444 5.738 6.592 5.453 4.945

0.016

10.8

В

0

Degree of Util (X)

Convergence, Y/N

HCM Lane V/C Ratio

HCM Control Delay

HCM Lane LOS

HCM 95th-tile Q

Service Time

Cap

Departure Headway (Hd)

	\checkmark	•	†	/	-	ţ
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		7	ħβ		ች	^
Traffic Volume (veh/h)	80	20	925	156	28	609
Future Volume (veh/h)	80	20	925	156	28	609
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	•	0.97	1.00	•
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approac			No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	22	1005	170	30	662
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	135	120	1498	253	52	2337
Arrive On Green	0.08	0.08	0.50	0.50	0.03	0.66
Sat Flow, veh/h	1781	1585	3119	511	1781	3647
	87	22			30	662
Grp Volume(v), veh/h			590	585		
Grp Sat Flow(s),veh/h/li		1585	1777	1760	1781	1777
Q Serve(g_s), s	1.6	0.4	8.5	8.5	0.6	2.6
Cycle Q Clear(g_c), s	1.6	0.4	8.5	8.5	0.6	2.6
Prop In Lane	1.00	1.00		0.29	1.00	
Lane Grp Cap(c), veh/h		120	880	871	52	2337
V/C Ratio(X)	0.64	0.18	0.67	0.67	0.58	0.28
Avail Cap(c_a), veh/h	955	850	1258	1246	237	3464
HCM Platoon Ratio	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
Uniform Delay (d), s/vel	h 15.2	14.6	6.4	6.4	16.2	2.4
Incr Delay (d2), s/veh	5.0	0.7	0.9	0.9	9.8	0.1
Initial Q Delay(d3),s/veh	า 0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),vel		0.2	1.4	1.4	0.3	0.0
Unsig. Movement Delay					0.0	0.0
LnGrp Delay(d),s/veh	20.2	15.3	7.3	7.4	26.0	2.5
LnGrp LOS	C	15.5 B	Α.5	Α	20.0 C	2.5 A
·	109	U	1175		U	692
Approach Vol, veh/h						
Approach LOS	19.2		7.3			3.5
Approach LOS	В		Α			Α
Timer - Assigned Phs	1	2				6
Phs Duration (G+Y+Rc)), s5.5	21.2				26.7
Change Period (Y+Rc),		4.5				4.5
Max Green Setting (Gm		23.9				32.9
Max Q Clear Time (g_c		10.5				4.6
Green Ext Time (p_c), s		6.2				4.6
Green Ext Time (p_c), s	0.0	U.Z				4.0
Intersection Summary						
HCM 6th Ctrl Delay			6.7			
HCM 6th LOS			Α			
0 200			, ,			

•	→	\searrow	•	•	•	4	†	/	>	↓	✓	
Movement EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	4			4	7	ሻ	^			↑ ⊅		
Traffic Volume (veh/h) 23		51	4	0	0	76	1060	0	0	653	16	
Future Volume (veh/h) 23	0	51	4	0	0	76	1060	0	0	653	16	
Initial Q (Qb), veh 0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT) 1.00		0.92	1.00	•	1.00	1.00		1.00	1.00	•	0.96	
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	
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln 1870	1870	1870	1870	1870	1870	1870	1870	0	0	1870	1870	
Adj Flow Rate, veh/h 25	0	55	4	0	0	83	1152	0	0	710	17	
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	0.02	0.02	2	2	
Cap, veh/h 52	0	115	16	0	7	112	1819	0	0	1148	27	
Arrive On Green 0.11	0.00	0.11	0.00	0.00	0.00	0.06	0.51	0.00	0.00	0.32	0.32	
Sat Flow, veh/h 484	0.00	1065	3563	0.00	1585	1781	3647	0.00	0.00	3636	85	
Grp Volume(v), veh/h 80	0	0	4	0	0	83	1152	0	0	356	371	
Grp Sat Flow(s), veh/h/ln1549	0	0	1781	0	1585	1781	1777	0	0	1777	1850	
Q Serve(g_s), s 1.7	0.0	0.0	0.0	0.0	0.0	1.6	8.4	0.0	0.0	6.1	6.1	
Cycle Q Clear(g_c), s 1.7	0.0	0.0	0.0	0.0	0.0	1.6	8.4	0.0	0.0	6.1	6.1	
Prop In Lane 0.31	0.0	0.69	1.00	0.0	1.00	1.00	0.4	0.00	0.00	0.1	0.05	
Lane Grp Cap(c), veh/h 168	0	0.00	16	0	7	112	1819	0.00	0.00	576	599	
V/C Ratio(X) 0.48	0.00	0.00	0.26	0.00	0.00	0.74	0.63	0.00	0.00	0.62	0.62	
Avail Cap(c_a), veh/h 776	0.00	0.00	1536	0.00	683	223	2768	0.00	0.00	939	978	
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	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	
Uniform Delay (d), s/veh 15.1	0.0	0.0	17.8	0.0	0.0	16.6	6.3	0.0	0.0	10.3	10.3	
Incr Delay (d2), s/veh 2.1	0.0	0.0	8.5	0.0	0.0	9.3	0.4	0.0	0.0	1.1	1.0	
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/lr0.6	0.0	0.0	0.0	0.0	0.0	0.8	1.4	0.0	0.0	1.7	1.8	
Unsig. Movement Delay, s/ve		0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	1.7	1.0	
LnGrp Delay(d),s/veh 17.2	0.0	0.0	26.3	0.0	0.0	25.9	6.7	0.0	0.0	11.4	11.3	
LnGrp LOS B	Α	Α	20.5 C	Α	Α	23.3 C	Α	Α	Α	В	11.3 B	
Approach Vol, veh/h	80	,,		4	/ (1235	, ·	, ,	727	<u> </u>	
Approach Delay, s/veh	17.2			26.3			8.0			11.3		
Approach LOS	17.2 B			20.3			Α			11.3 B		
Timer - Assigned Phs	2		4	5	6		8					
Phs Duration (G+Y+Rc), s	22.9		8.4	6.8	16.1		4.7					
Change Period (Y+Rc), s	4.5		4.5	4.5	4.5		4.5					
Max Green Setting (Gmax), s			18.0	4.5	19.0		15.5					
Max Q Clear Time (g_c+I1), s			3.7	3.6	8.1		2.0					
Green Ext Time (p_c), s	7.5		0.3	0.0	3.2		0.0					
Intersection Summary												
HCM 6th Ctrl Delay		9.6										
HCM 6th LOS		Α										
Notes												

User approved volume balancing among the lanes for turning movement.

	•	\rightarrow	•	•	•	•	1	†	/	/	ţ	✓	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	*	^	1	ሻሻ	ΦÞ		ሻሻ	^	1	*	ΦÞ		
Traffic Volume (veh/h)	329	633	254	302	281	67	238	646	415	37	372	185	
Future Volume (veh/h)	329	633	254	302	281	67	238	646	415	37	372	185	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0.2	0	
Ped-Bike Adj(A_pbT)	1.00	J	0.98	1.00		0.98	1.00		1.00	1.00	J	0.98	
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	
Nork Zone On Approac		No	1.00	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	358	688	276	328	305	73	259	702	451	40	404	201	
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	299	1296	565	394	884	208	235	1047	648	51	586	288	
Arrive On Green	0.17	0.36	0.36	0.11	0.31	0.31	0.07	0.29	0.29	0.03	0.26	0.26	
Sat Flow, veh/h	1781	3554	1550	3456	2844	669	3456	3554	1585	1781	2295	1127	
	358	688	276				259	702	451	40	311	294	
Grp Volume(v), veh/h				328 1728	189	189	1728		1585		1777	1645	
Grp Sat Flow(s),veh/h/lr		1777 15.2	1550 13.8	9.3	1777 8.2	1737 8.4	6.8	1777	23.5	1781 2.2	15.8	16.2	
Q Serve(g_s), s	16.8							17.4					
Cycle Q Clear(g_c), s	16.8	15.2	13.8	9.3	8.2	8.4	6.8	17.4	23.5	2.2	15.8	16.2	
Prop In Lane	1.00	4000	1.00	1.00	FF0	0.39	1.00	4047	1.00	1.00	450	0.68	
ane Grp Cap(c), veh/h		1296	565	394	552	540	235	1047	648	51	453	420	
//C Ratio(X)	1.20	0.53	0.49	0.83	0.34	0.35	1.10	0.67	0.70	0.79	0.69	0.70	
Avail Cap(c_a), veh/h	299	1296	565	442	552	540	235	1127	683	71	515	477	
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	
Jpstream Filter(I)	1.00	1.00	1.00	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00	
Jniform Delay (d), s/vel		25.0	24.5	43.4	26.6	26.7	46.6	31.0	24.4	48.3	33.6	33.8	
ncr Delay (d2), s/veh		1.6	3.0	10.3	1.6	1.8	88.8	1.7	3.3	21.2	4.1	4.8	
nitial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),vel		6.4	5.3	4.4	3.6	3.6	5.8	7.5	9.0	1.3	7.1	6.8	
Jnsig. Movement Delay													
_nGrp Delay(d),s/veh		26.6	27.5	53.6	28.2	28.4	135.4	32.6	27.7	69.5	37.7	38.5	
_nGrp LOS	F	С	С	D	С	С	F	С	С	E	D	D	
Approach Vol, veh/h		1322			706			1412			645		
Approach Delay, s/veh		62.3			40.1			49.9			40.0		
Approach LOS		Е			D			D			D		
Fimer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc)), \$5.6	42.8	11.0	30.6	21.0	37.4	7.0	34.6					
Change Period (Y+Rc),		6.3	* 4.2	* 5.1	* 4.2	* 6.3	* 4.2	5.1					
Max Green Setting (Gm		31.7	* 6.8	* 29	* 17	* 29	* 4	31.7					
Max Q Clear Time (g_c		17.2	8.8	18.2	18.8	10.4	4.2	25.5					
Green Ext Time (p_c), s		6.5	0.0	3.9	0.0	2.5	0.0	4.0					
ntersection Summary													
HCM 6th Ctrl Delay			50.7										
HCM 6th LOS			50.7 D										
Notes													

^{*} HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

	-	•	•	•	1	/
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	ħβ			^	ሻ	7
Traffic Volume (veh/h)	1001	28	103	633	16	117
Future Volume (veh/h)	1001	28	103	633	16	117
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.96	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approac				No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1088	30	112	688	17	127
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	1705	47	147	2397	194	172
Arrive On Green	0.48	0.48	0.08	0.67	0.11	0.11
Sat Flow, veh/h	3622	97	1781	3647	1781	1585
Grp Volume(v), veh/h	548	570	112	688	17	127
Grp Sat Flow(s), veh/h/l		1849	1781	1777	1781	1585
Q Serve(g_s), s	9.6	9.6	2.6	3.2	0.4	3.2
Cycle Q Clear(g_c), s	9.6	9.6	2.6	3.2	0.4	3.2
Prop In Lane		0.05	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		894	147	2397	194	172
V/C Ratio(X)	0.64	0.64	0.76	0.29	0.09	0.74
Avail Cap(c_a), veh/h	2163	2250	665	6038	880	783
HCM Platoon Ratio	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
Uniform Delay (d), s/ve	h 8.0	8.0	18.6	2.7	16.6	17.9
Incr Delay (d2), s/veh	0.8	0.8	7.8	0.1	0.2	6.0
Initial Q Delay(d3),s/vel		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),ve		2.4	1.2	0.2	0.1	1.3
Unsig. Movement Delay			1.2	0.2	0.1	1.0
	y, s/ven 8.8	8.8	26.5	2.8	16.8	24.0
LnGrp Delay(d),s/veh						
LnGrp LOS	A	A	С	A	В	С
Approach Vol, veh/h	1118			800	144	
Approach Delay, s/veh				6.1	23.1	
Approach LOS	Α			Α	С	
Timer - Assigned Phs	1	2				6
Phs Duration (G+Y+Rc), s7.9	24.6				32.5
Change Period (Y+Rc),	, .	4.5				4.5
Max Green Setting (Gr		50.5				70.5
Max Q Clear Time (g_c		11.6				5.2
Green Ext Time (p_c),		8.5				5.1
(1 –)	5 U.Z	0.5				J. I
Intersection Summary						
HCM 6th Ctrl Delay			8.7			
HCM 6th LOS			Α			
HCM 6th LOS			А			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻሻ	^	7	ሻ	^	7	ሻሻ	ħβ		ሻ	^	7	
Traffic Volume (veh/h)	400	239	273	102	133	27	336	659	100	81	474	215	
Future Volume (veh/h)	400	239	273	102	133	27	336	659	100	81	474	215	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	1.00		0.98	1.00		0.96	
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	
Work Zone On Approac		No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	435	260	297	111	145	29	365	716	109	88	515	234	
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	568	992	430	145	674	287	461	973	148	135	917	391	
Arrive On Green	0.16	0.28	0.28	0.08	0.19	0.19	0.13	0.32	0.32	0.08	0.26	0.26	
Sat Flow, veh/h	3456	3554	1541	1781	3554	1510	3456	3084	469	1781	3554	1515	
Grp Volume(v), veh/h	435	260	297	111	145	29	365	412	413	88	515	234	
Grp Sat Flow(s), veh/h/li		1777	1541	1781	1777	1510	1728	1777	1777	1781	1777	1515	
Q Serve(g_s), s	9.5	4.5	13.5	4.8	2.7	1.2	8.0	16.3	16.3	3.8	9.9	10.6	
Cycle Q Clear(g_c), s	9.5	4.5	13.5	4.8	2.7	1.2	8.0	16.3	16.3	3.8	9.9	10.6	
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.26	1.00		1.00	
Lane Grp Cap(c), veh/h		992	430	145	674	287	461	560	560	135	917	391	
V/C Ratio(X)	0.77	0.26	0.69	0.77	0.21	0.10	0.79	0.74	0.74	0.65	0.56	0.60	
Avail Cap(c_a), veh/h	968	1682	730	340	1343	571	761	810	810	283	1402	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/vel		22.0	25.3	35.4	26.9	26.3	33.0	24.0	24.0	35.3	25.3	25.6	
Incr Delay (d2), s/veh	2.6	0.2	2.4	3.2	0.2	0.2	1.2	2.0	2.0	2.0	0.5	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	
%ile BackOfQ(50%),vel		1.8	4.8	2.1	1.1	0.4	3.3	6.5	6.6	1.6	3.9	3.7	
Unsig. Movement Delay													
LnGrp Delay(d),s/veh	34.0	22.2	27.7	38.6	27.1	26.5	34.2	26.0	26.0	37.2	25.8	27.0	
LnGrp LOS	С	С	С	D	С	С	С	С	С	D	С	С	
Approach Vol, veh/h		992			285			1190			837		
Approach Delay, s/veh		29.0			31.5			28.5			27.4		
Approach LOS		С			С			С			С		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc)), \$ 0.9	27.4	15.0	25.3	17.9	20.4	10.5	29.8					
Change Period (Y+Rc),		5.5	4.5	5.0	5.0	5.5	4.5	5.0					
Max Green Setting (Gm		37.2	17.3	31.0	22.0	29.7	12.5	35.8					
Max Q Clear Time (g_c		15.5	10.0	12.6	11.5	4.7	5.8	18.3					
Green Ext Time (p_c), s	, .	3.2	0.4	3.9	1.4	1.1	0.0	4.6					
Intersection Summary													
HCM 6th Ctrl Delay			28.6										
HCM 6th LOS			С										
			•										

ATTACHMENT B EXISTING + CUMULATIVE PROJECTS + PROJECT (NO MAGNOLIA AVENUE EXTENSION) PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS

L. C C.						
Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	N/		1	7		
Traffic Vol, veh/h	0	84	362	0	163	700
Future Vol, veh/h	0	84	362	0	163	700
Conflicting Peds, #/h	r 0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	150	50	-
Veh in Median Storag	ge, # 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	91	393	0	177	761
Major/Minor	Minor1	ı	Major1	ı	Major2	
Conflicting Flow All	1508	393	0	0	393	0
Stage 1	393	393	-	-	J9J -	-
Stage 2	1115	_	_	_	_	_
Critical Hdwy	6.42	6.22	_	_	4.12	_
Critical Hdwy Stg 1	5.42	0.22	_	_	4.12	_
Critical Hdwy Stg 2	5.42	-	_	_	_	_
Follow-up Hdwy	3.518		_		2.218	_
Pot Cap-1 Maneuver		656		_	1166	_
Stage 1	682	-	_	_	1100	_
Stage 1	314	-	-	_	_	_
Platoon blocked, %	017		_	_		_
Mov Cap-1 Maneuve	r 113	656	_	_	1166	_
Mov Cap-1 Maneuve		-	_	_	1100	
Stage 1	682	-		-		_
Stage 2	266	_	_	_	_	
Olaye Z	200		_			
Approach	WB		NB		SB	
HCM Control Delay,			0		1.6	
HCM LOS	В					
Minor Lane/Major Mv	ımt .	NBT	NBR\	WBLn1	SBL	SBT
Capacity (veh/h)		-	-	656	1166	
Supusity (VOII/II)				500		

- 0.139 0.152

В

0.5

8.6

0.5

Α

11.4

HCM Lane V/C Ratio

HCM Lane LOS

HCM Control Delay (s)

HCM 95th %tile Q(veh)

Intersection			
Intersection Delay, s/veh	9		
Intersection LOS	Α		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	1	7	ሻ	†	7
Traffic Vol, veh/h	0	0	218	32	8	0	117	4	8	0	7	0
Future Vol, veh/h	0	0	218	32	8	0	117	4	8	0	7	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	237	35	9	0	127	4	9	0	8	0
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	1
Approach		EB		WB			NB			SB		
Opposing Approach		WB		EB			SB			NB		
Opposing Lanes		1		1			3			3		
Conflicting Approach Left		SB		NB			EB			WB		
Conflicting Lanes Left		3		3			1			1		
Conflicting Approach Right		NB		SB			WB			EB		
Conflicting Lanes Right		3		3			1			1		
HCM Control Delay		8.7		8.7			9.7			8.2		
HCM LOS		Α		Α			Α			Α		

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3	
Vol Left, %	100%	0%	0%	0%	80%	0%	0%	0%	
Vol Thru, %	0%	100%	0%	0%	20%	100%	100%	100%	
Vol Right, %	0%	0%	100%	100%	0%	0%	0%	0%	
Sign Control	Stop								
Traffic Vol by Lane	117	4	8	218	40	0	7	0	
LT Vol	117	0	0	0	32	0	0	0	
Through Vol	0	4	0	0	8	0	7	0	
RT Vol	0	0	8	218	0	0	0	0	
Lane Flow Rate	127	4	9	237	43	0	8	0	
Geometry Grp	7	7	7	7	7	7	7	7	
Degree of Util (X)	0.201	0.006	0.011	0.282	0.067	0	0.011	0	
Departure Headway (Hd)	5.692	5.189	4.485	4.291	5.542	5.357	5.357	5.357	
Convergence, Y/N	Yes								
Cap	631	690	798	839	647	0	668	0	
Service Time	3.42	2.917	2.213	2.007	3.265	3.094	3.094	3.094	
HCM Lane V/C Ratio	0.201	0.006	0.011	0.282	0.066	0	0.012	0	
HCM Control Delay	9.9	7.9	7.3	8.7	8.7	8.1	8.2	8.1	
HCM Lane LOS	Α	Α	Α	Α	Α	N	Α	N	
HCM 95th-tile Q	0.7	0	0	1.2	0.2	0	0	0	

Intersection Delay, s/veh81.9	Intersection		
Intersection LOS	Intersection Delay, s/veh8	31.9	
Intersection Loo	Intersection LOS	F	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			4		Ť	ĵ.		7	î,		
Traffic Vol, veh/h	0	1	12	233	0	46	3	326	68	89	647	0	
Future Vol, veh/h	0	1	12	233	0	46	3	326	68	89	647	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	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	1	13	253	0	50	3	354	74	97	703	0	
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0	
Approach		EB		WB			NB			SB			
Opposing Approach		WB		EB			SB			NB			
Opposing Lanes		1		1			2			2			
Conflicting Approach L	eft	SB		NB			EB			WB			
Conflicting Lanes Left		2		2			1			1			
Conflicting Approach R	ight	NB		SB			WB			EB			
Conflicting Lanes Right	t	2		2			1			1			
HCM Control Delay		11.4		19.9			30			134.6			
HCM LOS		В		С			D			F			

Lane	NBLn1	NBLn2	EBLn1V	WBLn1	SBLn1	SBLn2	
Vol Left, %	100%	0%	0%	84%	100%	0%	
Vol Thru, %	0%	83%	8%	0%	0%	100%	
Vol Right, %	0%	17%	92%	16%	0%	0%	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	3	394	13	279	89	647	
LT Vol	3	0	0	233	89	0	
Through Vol	0	326	1	0	0	647	
RT Vol	0	68	12	46	0	0	
Lane Flow Rate	3	428	14	303	97	703	
Geometry Grp	7	7	2	2	7	7	
Degree of Util (X)	0.007	0.781	0.029	0.578	0.187	1.259	
Departure Headway (Hd)	7.579	6.941	8.117	7.313	6.956	6.445	
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	
Cap	475	527	444	497	515	563	
Service Time	5.279	4.641	6.117	5.313	4.714	4.203	
HCM Lane V/C Ratio	0.006	0.812	0.032	0.61	0.188	1.249	
HCM Control Delay	10.3	30.1	11.4	19.9	11.3	151.6	
HCM Lane LOS	В	D	В	С	В	F	
HCM 95th-tile Q	0	7.1	0.1	3.6	0.7	27.4	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	7	Þ			4		7	∱ ∱		<u>ነ</u>	∱ ∱		
Traffic Volume (veh/h)	17	1	192	45	13	10	78	232	14	7	511	11	
Future Volume (veh/h)	17	1	192	45	13	10	78	232	14	7	511	11	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.90	0.95		0.98	1.00		0.97	1.00		0.83	
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	
Work Zone On Approach		No			No			No			No		
	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	18	1	209	49	14	11	85	252	15	8	555	12	
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	593	2	452	290	80	43	175	896	53	254	1088	23	
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.10	0.26	0.26	0.14	0.31	0.31	
	1382	7	1421	525	252	136	1781	3403	201	1781	3538	76	
Grp Volume(v), veh/h	18	0	210	74	0	0	85	131	136	8	278	289	
Grp Sat Flow(s), veh/h/ln	1382	0	1428	913	0	0	1781	1777	1827	1781	1777	1838	
Q Serve(g_s), s	0.0	0.0	5.7	0.9	0.0	0.0	2.2	2.9	2.9	0.2	6.3	6.3	
Cycle Q Clear(g_c), s	0.4	0.0	5.7	6.6	0.0	0.0	2.2	2.9	2.9	0.2	6.3	6.3	
Prop In Lane	1.00		1.00	0.66		0.15	1.00		0.11	1.00		0.04	
Lane Grp Cap(c), veh/h		0	454	413	0	0	175	468	481	254	547	565	
V/C Ratio(X)	0.03	0.00	0.46	0.18	0.00	0.00	0.49	0.28	0.28	0.03	0.51	0.51	
Avail Cap(c_a), veh/h	1101	0	978	875	0	0	565	1509	1551	419	1363	1410	
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	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	11.5	0.0	13.3	13.1	0.0	0.0	20.9	14.3	14.3	18.1	13.9	13.9	
Incr Delay (d2), s/veh	0.0	0.0	0.7	0.2	0.0	0.0	2.1	0.3	0.3	0.0	0.7	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	
%ile BackOfQ(50%),veh		0.0	1.7	0.6	0.0	0.0	0.9	1.0	1.0	0.1	2.1	2.2	
Unsig. Movement Delay	, s/veh												
LnGrp Delay(d),s/veh	11.5	0.0	14.1	13.3	0.0	0.0	23.0	14.6	14.7	18.1	14.6	14.6	
LnGrp LOS	В	Α	В	В	Α	A	С	В	В	В	В	В	
Approach Vol, veh/h		228			74			352			575		
Approach Delay, s/veh		13.9			13.3			16.7			14.7		
Approach LOS		В			В			В			В		
Timer - Assigned Phs	1	2		4	5	6		8					
Phs Duration (G+Y+Rc)	, \$ 1.5	17.4		20.0	9.3	19.5		20.0					
Change Period (Y+Rc),		4.5		4.5	4.5	4.5		4.5					
Max Green Setting (Gma	a k],.s	41.5		33.5	15.5	37.5		33.5					
Max Q Clear Time (g_c+	H12),2s	4.9		7.7	4.2	8.3		8.6					
Green Ext Time (p_c), s	0.0	1.5		1.6	0.1	3.3		0.4					
Intersection Summary													
HCM 6th Ctrl Delay			15.0										
HCM 6th LOS			В										

Intersection												
Intersection Delay, s/v	e l 176.5											
Intersection LOS	F											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ች	ĵ.		*	ĵ.	
Traffic Vol, veh/h	0	1	7	264	4	45	5	358	48	82	823	1
Future Vol., veh/h	0	1	7	264	4	45	5	358	48	82	823	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	8	287	4	49	5	389	52	89	895	1
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Approach		EB		WB			NB			SB		
Opposing Approach		WB		EB			SB			NB		
Opposing Lanes		1		1			2			2		
Conflicting Approach L	_eft	SB		NB			EB			WB		
Conflicting Lanes Left		2		2			1			1		
Conflicting Approach F	Right	NB		SB			WB			EB		
Conflicting Lanes Righ	nt	2		2			1			1		
HCM Control Delay		12.4		24.4			36.9			293.9		
HCM LOS		В		С			Е			F		
Lane	1	NBLn1N	NBLn2 E	EBLn1V	VBLn1	SBLn1	SBLn2					
Vol Left, %		100%	0%	0%	84%	100%	0%					
Vol Thru, %		0%	88%	12%	1%	0%	100%					
Vol Right, %		0%	12%	88%	14%	0%	0%					
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane		5	406	8	313	82	824					
LT Vol		5	0	0	264	82	0					
Through Vol		0	358	1	4	0	823					
RT Vol		0	48	7	45	0	1					
Lane Flow Rate		5	441	9	340	89	896					

8.132

Yes

443

5.832

0.011

10.9

В

0

Geometry Grp

Service Time

Cap

Degree of Util (X)
Departure Headway (Hd)

Convergence, Y/N

HCM Lane V/C Ratio

HCM Control Delay

HCM Lane LOS

HCM 95th-tile Q

2

Yes

392

0.023

12.4

В

0.1

7.53 9.181

Yes

485

0.909

37.2

Ε

8.1

0.011 0.829 0.019 0.653 0.178 1.659

2

Yes

466

5.23 7.181 5.834 4.938 4.425

24.4

C

4.6

7.834 7.182

0.73 0.178

Yes

499

11.5

В

0.6

6.67

Yes

546

1.641

322

50.7

ر	•	→	•	•	←	•	•	†	/	>	ţ	✓	
Movement EE	3L	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ኘ	ĵ.		ሻ	ĵ.		ሻ	ħβ		ሻ	ħβ		
Traffic Volume (veh/h)	46	145	96	140	164	145	51	356	55	199	635	85	
Future Volume (veh/h)	46	145	96	140	164	145	51	356	55	199	635	85	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT) 1.0			0.99	1.00		0.98	1.00		0.99	1.00		0.98	
Parking Bus, Adj 1.0	00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No			No			No			No		
Adj Sat Flow, veh/h/ln 187		1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
	50	158	104	152	178	158	55	387	60	216	690	92	
Peak Hour Factor 0.9		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	
	06	199	131	193	216	192	112	998	153	259	1277	170	
Arrive On Green 0.0		0.19	0.19	0.11	0.24	0.24	0.06	0.32	0.32	0.15	0.41	0.41	
Sat Flow, veh/h 178		1046	689	1781	906	804	1781	3081	474	1781	3142	418	
. , , ,	50	0	262	152	0	336	55	222	225	216	390	392	
Grp Sat Flow(s), veh/h/ln178		0	1735	1781	0	1710	1781	1777	1778	1781	1777	1784	
(O— /·	.1	0.0	11.2	6.4	0.0	14.4	2.3	7.5	7.6	9.1	12.9	13.0	
\ 0 _ /·	1.1	0.0	11.2	6.4	0.0	14.4	2.3	7.5	7.6	9.1	12.9	13.0	
Prop In Lane 1.0		•	0.40	1.00	•	0.47	1.00		0.27	1.00	700	0.23	
Lane Grp Cap(c), veh/h 10		0	330	193	0	409	112	576	576	259	722	725	
V/C Ratio(X) 0.4		0.00	0.79	0.79	0.00	0.82	0.49	0.39	0.39	0.83	0.54	0.54	
Avail Cap(c_a), veh/h 19		0	526	425	0	739	195	576	576	356	722	725	
HCM Platoon Ratio 1.0		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) 1.0		0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh 35		0.0	29.9	33.7	0.0	27.9	35.1	20.2	20.3	32.2 11.6	17.5	17.5 2.9	
y \ /'	.0	0.0	0.0	7.0	0.0	4.2 0.0	3.3	0.0	0.0	0.0	2.9	0.0	
Initial Q Delay(d3),s/veh 0 %ile BackOfQ(50%),veh/ln1		0.0	5.0	3.1	0.0	6.2	1.1	3.2	3.2	4.5	5.3	5.3	
Unsig. Movement Delay, s/v		0.0	5.0	J. I	0.0	0.2	1.1	J.Z	J.Z	4.5	5.5	5.5	
LnGrp Delay(d),s/veh 38		0.0	34.3	40.7	0.0	32.1	38.5	22.2	22.3	43.8	20.4	20.4	
	D.J	Α	C	40.7 D	Α	32.1 C	50.5 D	C	ZZ.3	43.0 D	20.4 C	20.4 C	
Approach Vol, veh/h		312		<u> </u>	488			502			998		
Approach Delay, s/veh		34.9			34.8			24.0			25.4		
Approach LOS		04.9 C			34.0 C			24.0 C			23.4 C		
					U			U			U		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), \$5		29.6	12.9	19.2	9.4	36.0	9.1	23.0					
Change Period (Y+Rc), s 4		4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmal/5)		24.5	18.5	23.5	8.5	31.5	8.5	33.5					
Max Q Clear Time (g_c+lf1)		9.6	8.4	13.2	4.3	15.0	4.1	16.4					
Green Ext Time (p_c), s 0	.2	2.1	0.3	1.1	0.0	4.2	0.0	2.0					
Intersection Summary													
HCM 6th Ctrl Delay			28.4										
HCM 6th LOS			С										

Intersection	
Intersection Delay, s/veh 306	
Intersection LOS F	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			4		7		7	7	ĵ.		
Traffic Vol, veh/h	0	0	11	93	1	1	1	420	32	3	1066	0	
Future Vol, veh/h	0	0	11	93	1	1	1	420	32	3	1066	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	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	0	12	101	1	1	1	457	35	3	1159	0	
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	0	
Approach		EB		WB			NB			SB			
Opposing Approach		WB		EB			SB			NB			
Opposing Lanes		1		1			2			3			
Conflicting Approach L	_eft	SB		NB			EB			WB			
Conflicting Lanes Left		2		3			1			1			
Conflicting Approach F	Right	NB		SB			WB			EB			
Conflicting Lanes Righ	nt	3		2			1			1			
HCM Control Delay		11.6		14.7			22.5			455			
HCM LOS		В		В			С			F			

Lane	NBLn1	NBLn2	NBLn3	EBLn1\	VBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	98%	100%	0%
Vol Thru, %	0%	100%	0%	0%	1%	0%	100%
Vol Right, %	0%	0%	100%	100%	1%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	420	32	11	95	3	1066
LT Vol	1	0	0	0	93	3	0
Through Vol	0	420	0	0	1	0	1066
RT Vol	0	0	32	11	1	0	0
Lane Flow Rate	1	457	35	12	103	3	1159
Geometry Grp	7	7	7	7	7	8	8
Degree of Util (X)	0.002	0.715	0.048	0.023	0.222	0.006	1.967
Departure Headway (Hd)	6.93	6.42	5.705	8.688	9.351	6.615	6.111
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Сар	519	566	632	415	386	537	603
Service Time	4.63	4.12	3.405	6.388	7.051	4.41	3.905
HCM Lane V/C Ratio	0.002	0.807	0.055	0.029	0.267	0.006	1.922
HCM Control Delay	9.6	23.6	8.7	11.6	14.7	9.5	456.3
HCM Lane LOS	Α	С	Α	В	В	Α	F
HCM 95th-tile Q	0	5.8	0.2	0.1	0.8	0	75.8

	•	•	•	†	/	-	ţ
Movement	WBL	VBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	*		7	ħβ		ች	^
Traffic Volume (veh/h)	163		34	450	111	111	899
Future Volume (veh/h)	163	163	34	450	111	111	899
Initial Q (Qb), veh	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approac	ch No	No		No			No
Adj Sat Flow, veh/h/ln	1870	870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	177	177	37	489	121	121	977
Peak Hour Factor	0.92).92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2
Cap, veh/h	262	262	233	891	219	152	1963
Arrive On Green	0.15).15	0.15	0.32	0.32	0.09	0.55
Sat Flow, veh/h	1781	781	1585	2909	692	1781	3647
Grp Volume(v), veh/h	177		37	307	303	121	977
Grp Sat Flow(s),veh/h/l			1585	1777	1731	1781	1777
Q Serve(g_s), s	2.8		0.6	4.3	4.3	2.0	5.1
Cycle Q Clear(g_c), s	2.8		0.6	4.3	4.3	2.0	5.1
Prop In Lane	1.00		1.00	1.0	0.40	1.00	0.1
Lane Grp Cap(c), veh/h			233	562	548	152	1963
V/C Ratio(X)	0.67		0.16	0.55	0.55	0.79	0.50
Avail Cap(c_a), veh/h	1071		953	1068	1041	327	3322
HCM Platoon Ratio	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
Uniform Delay (d), s/ve			11.2	8.5	8.5	13.4	4.1
Incr Delay (d2), s/veh	3.0		0.3	0.8	0.9	9.0	0.2
Initial Q Delay(d3),s/vel			0.0	0.0	0.9	0.0	0.2
%ile BackOfQ(50%),ve			0.0	1.0	1.0	0.0	0.0
Unsig. Movement Dela			U.Z	1.0	1.0	0.9	0.3
	15.1		11.5	9.3	9.3	22.5	4.3
LnGrp Delay(d),s/veh							
LnGrp LOS	B		В	A C10	A	С	A 4000
Approach Vol, veh/h	214			610			1098
Approach Delay, s/veh				9.3			6.3
Approach LOS	В	В		Α			Α
Timer - Assigned Phs	1	1	2				6
Phs Duration (G+Y+Rc), s7.1	s7.1	14.0				21.0
Change Period (Y+Rc)			4.5				4.5
Max Green Setting (Gn			18.0				28.0
Max Q Clear Time (g_c	, ,	, .	6.3				7.1
Green Ext Time (p_c),			2.7				6.7
(1 –).							
Intersection Summary							
HCM 6th Ctrl Delay				8.2			
HCM 6th LOS				Α			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4		ሻ	4	7	ሻ	^			ΦÞ		
Traffic Volume (veh/h)	13	0	58	189	0	31	17	528	0	0	1015	18	
Future Volume (veh/h)	13	0	58	189	0	31	17	528	0	0	1015	18	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.84	1.00		1.00	1.00		1.00	1.00		0.96	
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	
Work Zone On Approac		No	1.00	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	0	0	1870	1870	
Adj Flow Rate, veh/h	14	0	63	205	0	34	18	574	0	0	1103	20	
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	0.52	0.52	2	2	
Cap, veh/h	54	0	241	345	0	154	31	1642	0	0	1313	24	
Arrive On Green	0.21	0.00	0.21	0.10	0.00	0.10	0.02	0.46	0.00	0.00	0.37	0.37	
Sat Flow, veh/h	253	0.00	1139	3563	0.00	1585	1781	3647	0.00	0.00	3661	65	
Grp Volume(v), veh/h	77	0	0	205	0	34	18	574	0	0	549	574	
Grp Sat Flow(s),veh/h/l		0	0	1781	0	1585	1781	1777	0	0	1777	1855	
Q Serve(g_s), s	2.7	0.0	0.0	3.2	0.0	1.2	0.6	6.1	0.0	0.0	16.6	16.7	
Cycle Q Clear(g_c), s	2.7	0.0	0.0	3.2	0.0	1.2	0.6	6.1	0.0	0.0	16.6	16.7	
Prop In Lane	0.18		0.82	1.00		1.00	1.00		0.00	0.00		0.03	
Lane Grp Cap(c), veh/h		0	0	345	0	154	31	1642	0	0	654	683	
V/C Ratio(X)	0.26	0.00	0.00	0.59	0.00	0.22	0.58	0.35	0.00	0.00	0.84	0.84	
Avail Cap(c_a), veh/h	425	0	0	968	0	431	121	1962	0	0	724	756	
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	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	
Uniform Delay (d), s/ve	h 19.4	0.0	0.0	25.5	0.0	24.5	28.7	10.2	0.0	0.0	17.0	17.0	
Incr Delay (d2), s/veh	0.5	0.0	0.0	1.6	0.0	0.7	16.2	0.1	0.0	0.0	8.1	7.8	
Initial Q Delay(d3),s/vel	n 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%),ve	h/lr0.9	0.0	0.0	1.4	0.0	0.4	0.4	1.9	0.0	0.0	7.0	7.3	
Unsig. Movement Delay	y, s/veh	1											
LnGrp Delay(d),s/veh	19.8	0.0	0.0	27.1	0.0	25.3	45.0	10.3	0.0	0.0	25.1	24.8	
LnGrp LOS	В	Α	Α	С	Α	С	D	В	Α	Α	С	С	
Approach Vol, veh/h		77			239			592			1123		
Approach Delay, s/veh		19.8			26.8			11.3			24.9		
Approach LOS		В			С			В			С		
Timer - Assigned Phs		2		4	5	6		8					
Phs Duration (G+Y+Rc)), s	31.7		17.0	5.5	26.2		10.2					
Change Period (Y+Rc),		4.5		4.5	4.5	4.5		4.5					
Max Green Setting (Gm		32.5		18.0	4.0	24.0		16.0					
Max Q Clear Time (g_c		8.1		4.7	2.6	18.7		5.2					
Green Ext Time (p_c), s	, .	3.7		0.3	0.0	3.0		0.6					
Intersection Summary													
HCM 6th Ctrl Delay			21.0										
HCM 6th LOS			С										
Notes													

User approved volume balancing among the lanes for turning movement.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	*	^	7	ሻሻ	∱ }		ሻሻ	^	7	*	↑ ↑		
Traffic Volume (veh/h)	157	339	219	346	694	31	210	282	190	58	617	507	
Future Volume (veh/h)	157	339	219	346	694	31	210	282	190	58	617	507	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	•	0.98	1.00	•	0.98	1.00	Ū	0.98	1.00	•	0.98	
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	
Work Zone On Approac		No			No		1100	No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	171	368	238	376	754	34	228	307	207	63	671	551	
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	202	1084	473	411	1074	48	270	1201	715	71	554	450	
Arrive On Green	0.11	0.30	0.30	0.12	0.31	0.31	0.08	0.34	0.34	0.04	0.30	0.30	
Sat Flow, veh/h	1781	3554	1549	3456	3460	156	3456	3554	1559	1781	1846	1500	
Grp Volume(v), veh/h	171	368	238	376	387	401	228	307	207	63	646	576	
Grp Sat Flow(s),veh/h/l		1777	1549	1728	1777	1839	1728	1777	1559	1781	1777	1569	
Q Serve(g_s), s	9.4	8.0	12.6	10.8	19.2	19.2	6.5	6.3	8.3	3.5	30.0	30.0	
Cycle Q Clear(g_c), s	9.4	8.0	12.6	10.8	19.2	19.2	6.5	6.3	8.3	3.5	30.0	30.0	
Prop In Lane	1.00	0.0	1.00	1.00	13.2	0.08	1.00	0.5	1.00	1.00	30.0	0.96	
Lane Grp Cap(c), veh/h		1084	473	411	552	571	270	1201	715	71	533	471	
V/C Ratio(X)	0.85	0.34	0.50	0.91	0.70	0.70	0.85	0.26	0.29	0.88	1.21	1.22	
. ,	233	1087	474	411	552	571	270	1201	715	71	533	471	
Avail Cap(c_a), veh/h 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	
	1.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)		26.9	28.5	43.5	30.4	30.4	45.5	24.0	17.0	47.8	35.0	35.0	
Uniform Delay (d), s/ve	19.4	0.9	3.8	22.9	6.8	6.6	20.3	0.2	0.3	66.6	111.6	118.6	
Incr Delay (d2), s/veh		0.9	0.0			0.0		0.2	0.0	0.0	0.0	0.0	
Initial Q Delay(d3),s/vel		3.4	5.0	0.0 5.8	0.0 8.9	9.2	0.0			2.9	29.0	26.5	
%ile BackOfQ(50%),ve			5.0	5.0	0.9	9.2	3.5	2.6	2.9	2.9	29.0	20.5	
Unsig. Movement Delay			20.2	GG E	27.0	27.0	GE O	24.1	17.0	1111	146.6	1526	
LnGrp Delay(d),s/veh	62.8	27.8	32.3	66.5	37.2	37.0	65.8	24.1	17.3	114.4		153.6	
LnGrp LOS	<u>E</u>	C	С	E	D	D	<u>E</u>	C	В	F	F	F	
Approach Vol, veh/h		777			1164			742			1285		
Approach Delay, s/veh		36.9			46.6			35.0			148.1		
Approach LOS		D			D			D			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), \$6.1	36.8	12.0	35.1	15.6	37.3	8.2	38.9					
Change Period (Y+Rc)		6.3	* 4.2	* 5.1	* 4.2	* 6.3	* 4.2	5.1					
Max Green Setting (Gn		30.6	* 7.8	* 30	* 13	* 30	* 4	33.7					
Max Q Clear Time (g_c		14.6	8.5	32.0	11.4	21.2	5.5	10.3					
Green Ext Time (p_c),		4.1	0.0	0.0	0.0	3.8	0.0	3.9					
Intersection Summary													
HCM 6th Ctrl Delay			75.4										
HCM 6th LOS			7 J.4										
Notes													

^{*} HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement
Traffic Volume (veh/h) 529 68 118 966 21 92 Future Volume (veh/h) 529 68 118 966 21 92 Initial Q (Qb), veh 0 0 0 0 0 0 0 0 Ped-Bike Adj(A_pbT) 0.95 1.00 1.00 1.00 Parking Bus, Adj 1.00 1.00 1.00 1.00 1.00 Work Zone On Approach No Adj Sat Flow, veh/h/ln 1870 1870 1870 1870 1870 Adj Flow Rate, veh/h 575 74 128 1050 23 100 Peak Hour Factor 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 2 2 2 2 2 2
Traffic Volume (veh/h) 529 68 118 966 21 92 Future Volume (veh/h) 529 68 118 966 21 92 Initial Q (Qb), veh 0 0 0 0 0 0 0 0 Ped-Bike Adj(A_pbT) 0.95 1.00 1.00 1.00 Parking Bus, Adj 1.00 1.00 1.00 1.00 1.00 Work Zone On Approach No Adj Sat Flow, veh/h/ln 1870 1870 1870 1870 1870 1870 Adj Flow Rate, veh/h 575 74 128 1050 23 100 Peak Hour Factor 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 2 2 2 2 2 2
Future Volume (veh/h) 529 68 118 966 21 92 Initial Q (Qb), veh 0 0 0 0 0 0 0 0 Ped-Bike Adj(A_pbT) 0.95 1.00 1.00 1.00 Parking Bus, Adj 1.00 1.00 1.00 1.00 1.00 Work Zone On Approach No No No Adj Sat Flow, veh/h/ln 1870 1870 1870 1870 1870 1870 Adj Flow Rate, veh/h 575 74 128 1050 23 100 Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 Percent Heavy Veh, % 2 2 2 2 2 2 2 Cap, veh/h 1084 139 165 2116 156 139 Arrive On Green 0.34 0.34 0.09 0.60 0.09 0.09 Sat Flow, veh/h 3241 404 1781 3647 1781 1585 Grp Volume(v), veh/h 3241 404 1781 3647 1781 1585 Grp Volume(v), veh/h 324 325 128 1050 23 100 Grp Sat Flow(s), veh/h/1n1777 1774 1781 1777 1781 1585 Q Serve(g_s), s 4.1 4.2 2.0 4.8 0.3 1.7 Cycle Q Clear(g_c), s 4.1 4.2 2.0 4.8 0.3 1.7 Prop In Lane 0.23 1.00 1.00 1.00 Lane Grp Cap(c), veh/h 612 611 165 2116 156 139 V/C Ratio(X) 0.53 0.53 0.78 0.50 0.15 0.72 Avail Cap(c_a), veh/h 1170 1168 615 2116 156 139 V/C Ratio(X) 0.53 0.53 0.78 0.50 0.15 0.72 Avail Cap(c_a), veh/h 1170 1168 615 2116 156 139 V/C Ratio(X) 0.53 0.53 0.78 0.50 0.15 0.72 Avail Cap(c_a), veh/h 1170 1168 615 2116 156 139 V/C Ratio(X) 0.53 0.53 0.78 0.50 0.15 0.72 Avail Cap(c_a), veh/h 1170 1168 615 2116 156 139 Uniform Delay (d), s/veh 7.5 7.5 12.6 3.3 12.0 12.6 Incr Delay (d2), s/veh 0.7 0.7 7.7 0.2 0.4 6.8 Initial Q Delay(d3),s/veh 0.0 0.0 0.0 0.0 0.0 0.0 %ile BackOfQ(50%),veh/ln0.8 0.9 0.9 0.1 0.1 0.7 Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh 8.2 8.2 20.3 3.5 12.4 19.4 LnGrp LOS A A C A B B Approach LOS A B Fimer - Assigned Phs 1 2
Ped-Bike Adj(A_pbT) Parking Bus, Adj Parking Baro, 1870 Parking Baro,
Parking Bus, Adj 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Work Zone On Approach No Adj Sat Flow, veh/h/ln 1870 1870 1870 1870 1870 1870 Adj Flow Rate, veh/h 575 74 128 1050 23 100 Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 Percent Heavy Veh, % 2 2 2 2 2 2 2 Cap, veh/h 1084 139 165 2116 156 139 Arrive On Green 0.34 0.34 0.09 0.60 0.09 0.09 Sat Flow, veh/h 3241 404 1781 3647 1781 1585 Grp Volume(v), veh/h 3243 325 128 1050 23 100 Grp Sat Flow(s), veh/h/ln1777 1774 1781 1777 1781 1585 Q Serve(g_s), s 4.1 4.2 2.0 4.8 0.3 1.7 Cycle Q Clear(g_c), s 4.1 4.2 2.0 4.8 0.3 1.7 Prop In Lane 0.23 1.00 1.00 1.00 Lane Grp Cap(c), veh/h 612 611 165 2116 156 139 V/C Ratio(X) 0.53 0.53 0.78 0.50 0.15 0.72 Avail Cap(c_a), veh/h 1170 1168 615 4130 1129 1005 HCM Platoon Ratio 1.00 1.00 1.00 1.00 1.00 Upstream Filter(I) 1.00 1.00 1.00 1.00 1.00 Upstream Filter(I) 1.00 1.00 1.00 1.00 1.00 Uniform Delay (d), s/veh 7.5 7.5 12.6 3.3 12.0 12.6 Incr Delay (d2), s/veh 0.7 0.7 7.7 0.2 0.4 6.8 Initial Q Delay(d3), s/veh 0.0 0.0 0.0 0.0 0.0 %ile BackOfQ(50%), veh/h/lo.8 0.9 0.9 0.1 0.1 0.7 Unsig. Movement Delay, s/veh LnGrp Delay(d), s/veh 8.2 8.2 20.3 3.5 12.4 19.4 LnGrp LOS A A C A B Approach LOS A B Timer - Assigned Phs 1 2 6 8
Work Zone On Approach No No No No Adj Sat Flow, veh/h/ln 1870 1870 1870 1870 1870 Adj Flow Rate, veh/h 575 74 128 1050 23 100 Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 Percent Heavy Veh, % 2 2 2 2 2 2 2 Cap, veh/h 1084 139 165 2116 156 139 Arrive On Green 0.34 0.34 0.09 0.60 0.09 0.09 Sat Flow, veh/h 3241 404 1781 3647 1781 1585 Grp Volume(v), veh/h 324 325 128 1050 23 100 Grp Sat Flow(s), veh/h/h/In1777 1774 1781 1777 1781 1585 Grp Volume(v), veh/h 612 2.0 4.8 0.3 1.7 Prop In Lane 0.23 1.00 1.00 1.00
Adj Sat Flow, veh/h/ln 1870 22 2 <t< td=""></t<>
Adj Flow Rate, veh/h 575 74 128 1050 23 100 Peak Hour Factor 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 Cap, veh/h 1084 139 165 2116 156 139 Arrive On Green 0.34 0.34 0.09 0.60 0.09 0.09 Sat Flow, veh/h 3241 404 1781 3647 1781 1585 Grp Volume(v), veh/h 324 325 128 1050 23 100 Grp Sat Flow(s),veh/h/In1777 1774 1781 1777 1781 1585 Q Serve(g_s), s 4.1 4.2 2.0 4.8 0.3 1.7 Cycle Q Clear(g_c), s 4.1 4.2 2.0 4.8 0.3 1.7 Prop In Lane 0.23 1.00 1.00 1.00 1.00 1.00 Lane Grp Cap(c), veh/h 612 611 165 2116 156 <t< td=""></t<>
Peak Hour Factor 0.92 0.93
Percent Heavy Veh, % 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Cap, veh/h Arrive On Green O.34 O.34 O.09 O.60 O.09 O.09 Sat Flow, veh/h 3241 404 1781 3647 1781 1585 Grp Volume(v), veh/h 324 325 128 1050 23 100 Grp Sat Flow(s), veh/h/ln1777 1774 1781 1777 1781 1585 Q Serve(g_s), s 4.1 4.2 2.0 4.8 0.3 1.7 Cycle Q Clear(g_c), s 4.1 4.2 2.0 4.8 0.3 1.7 Prop In Lane O.23 1.00 Lane Grp Cap(c), veh/h 612 611 165 2116 156 139 V/C Ratio(X) O.53 0.53 0.78 0.50 0.15 0.72 Avail Cap(c_a), veh/h 1170 1168 615 4130 1129 1005 HCM Platoon Ratio 1.00 1.00 1.00 1.00 Upstream Filter(I) 1.00 1.00 1.00 1.00 1.00 Uniform Delay (d), s/veh 7.5 7.5 12.6 3.3 12.0 12.6 Incr Delay (d2), s/veh 0.7 0.7 7.7 0.2 0.4 6.8 Initial Q Delay(d3), s/veh 0.0 0.0 0.0 0.0 0.0 0.0 %ile BackOfQ(50%), veh/ln0.8 0.9 0.9 0.1 0.1 0.7 Unsig. Movement Delay, s/veh LnGrp Delay(d), s/veh 8.2 8.2 20.3 3.5 12.4 19.4 LnGrp LOS A A B Timer - Assigned Phs 1 2 6 8
Arrive On Green 0.34 0.34 0.09 0.60 0.09 0.09 Sat Flow, veh/h 3241 404 1781 3647 1781 1585 Grp Volume(v), veh/h 324 325 128 1050 23 100 Grp Sat Flow(s), veh/h/ln1777 1774 1781 1777 1781 1585 Q Serve(g_s), s 4.1 4.2 2.0 4.8 0.3 1.7 Cycle Q Clear(g_c), s 4.1 4.2 2.0 4.8 0.3 1.7 Prop In Lane 0.23 1.00 1.00 1.00 Lane Grp Cap(c), veh/h 612 611 165 2116 156 139 V/C Ratio(X) 0.53 0.53 0.78 0.50 0.15 0.72 Avail Cap(c_a), veh/h 1170 1168 615 4130 1129 1005 HCM Platoon Ratio 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 Uniform Delay (d), s/veh 7.5 7.5 12.6 3.3 12.0 12.6 Incr Delay (d2), s/veh 0.7 0.7 7.7 0.2 0.4 6.8 Initial Q Delay(d3), s/veh 0.0 0.0 0.0 0.0 0.0 0.0 %ile BackOfQ(50%), veh/ln0.8 0.9 0.9 0.1 0.1 0.7 Unsig. Movement Delay, s/veh LnGrp Delay(d), s/veh 8.2 8.2 20.3 3.5 12.4 19.4 LnGrp LOS A A C A B B Approach Vol, veh/h 649 1178 123 Approach LOS A A B Timer - Assigned Phs 1 2 6 8
Sat Flow, veh/h 3241 404 1781 3647 1781 1585 Grp Volume(v), veh/h 324 325 128 1050 23 100 Grp Sat Flow(s), veh/h/ln1777 1774 1781 1777 1781 1585 Q Serve(g_s), s 4.1 4.2 2.0 4.8 0.3 1.7 Cycle Q Clear(g_c), s 4.1 4.2 2.0 4.8 0.3 1.7 Prop In Lane 0.23 1.00 1.00 1.00 1.00 Lane Grp Cap(c), veh/h 612 611 165 2116 156 139 V/C Ratio(X) 0.53 0.53 0.78 0.50 0.15 0.72 Avail Cap(c_a), veh/h 1170 1168 615 4130 1129 1005 HCM Platoon Ratio 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 Uniform Delay (d2), s/veh
Grp Volume(v), veh/h 324 325 128 1050 23 100 Grp Sat Flow(s),veh/h/ln1777 1774 1781 1781 1585 Q Serve(g_s), s 4.1 4.2 2.0 4.8 0.3 1.7 Cycle Q Clear(g_c), s 4.1 4.2 2.0 4.8 0.3 1.7 Prop In Lane 0.23 1.00 1.00 1.00 Lane Grp Cap(c), veh/h 612 611 165 2116 156 139 V/C Ratio(X) 0.53 0.53 0.78 0.50 0.15 0.72 Avail Cap(c_a), veh/h 1170 1168 615 4130 1129 1005 HCM Platoon Ratio 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 Uniform Delay (d), s/veh 7.5 7.5 12.6 3.3 12.0 12.6 Incr Delay (d2), s/veh 0.7 0.7 7.7 0.2 0.4 6.8 Initial Q Delay(d3),s/veh 0.0 0.0 0.0 0.0 0.0 %ile BackOfQ(50%),veh/ln0.8 0.9 0.9 0.1 0.1 0.7 Unsig. Movement Delay, s/veh LnGrp Delay(d), s/veh 8.2 8.2 20.3 3.5 12.4 19.4 LnGrp LOS A A C A B B Approach Vol, veh/h 649 1178 123 Approach LOS A B Timer - Assigned Phs 1 2 6 8
Grp Sat Flow(s),veh/h/ln1777 1774 1781 1781 1585 Q Serve(g_s), s
Q Serve(g_s), s
Cycle Q Clear(g_c), s
Prop In Lane
Lane Grp Cap(c), veh/h 612 611 165 2116 156 139 V/C Ratio(X) 0.53 0.53 0.78 0.50 0.15 0.72 Avail Cap(c_a), veh/h 1170 1168 615 4130 1129 1005 HCM Platoon Ratio 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 Uniform Delay (d), s/veh 7.5 7.5 12.6 3.3 12.0 12.6 Incr Delay (d2), s/veh 0.7 0.7 7.7 0.2 0.4 6.8 Initial Q Delay(d3),s/veh 0.0 0.0 0.0 0.0 0.0 0.0 %ile BackOfQ(50%),veh/ln0.8 0.9 0.9 0.1 0.1 0.7 Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh 8.2 8.2 20.3 3.5 12.4 19.4 LnGrp LOS A A C A B B Approach Vol, veh/h 649 1178 123 Approach LOS A B Timer - Assigned Phs 1 2 6 8
V/C Ratio(X) 0.53 0.53 0.78 0.50 0.15 0.72 Avail Cap(c_a), veh/h 1170 1168 615 4130 1129 1005 HCM Platoon Ratio 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 Uniform Delay (d), s/veh 7.5 7.5 12.6 3.3 12.0 12.6 Incr Delay (d2), s/veh 0.7 0.7 7.7 0.2 0.4 6.8 Initial Q Delay(d3),s/veh 0.0 0.0 0.0 0.0 0.0 0.0 %ile BackOfQ(50%),veh/ln0.8 0.9 0.9 0.1 0.1 0.7 Unsig. Movement Delay, s/veh 8.2 8.2 20.3 3.5 12.4 19.4 LnGrp LOS A A C A B B Approach Vol, veh/h 649 1178 123 Approach LOS A A B Timer - Assigned Phs 1 2 6 8
Avail Cap(c_a), veh/h 1170 1168 615 4130 1129 1005 HCM Platoon Ratio 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 Uniform Delay (d), s/veh 7.5 7.5 12.6 3.3 12.0 12.6 Incr Delay (d2), s/veh 0.7 0.7 7.7 0.2 0.4 6.8 Initial Q Delay(d3),s/veh 0.0 0.0 0.0 0.0 0.0 %ile BackOfQ(50%),veh/ln0.8 0.9 0.9 0.1 0.1 0.7 Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh 8.2 8.2 20.3 3.5 12.4 19.4 LnGrp LOS A A C A B B Approach Vol, veh/h 649 1178 123 Approach Delay, s/veh 8.2 5.3 18.1 Approach LOS A B Timer - Assigned Phs 1 2 6 8
HCM Platoon Ratio 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 Uniform Delay (d), s/veh 7.5 7.5 12.6 3.3 12.0 12.6 Incr Delay (d2), s/veh 0.7 0.7 7.7 0.2 0.4 6.8 Initial Q Delay(d3),s/veh 0.0 0.0 0.0 0.0 0.0 0.0 %ile BackOfQ(50%),veh/ln0.8 0.9 0.9 0.1 0.1 0.7 Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh 8.2 8.2 20.3 3.5 12.4 19.4 LnGrp LOS A A C A B B Approach Vol, veh/h 649 1178 123 Approach Delay, s/veh 8.2 5.3 18.1 Approach LOS A B Timer - Assigned Phs 1 2 6 8
Upstream Filter(I) 1.00 1.00 1.00 1.00 1.00 1.00 Uniform Delay (d), s/veh 7.5 7.5 12.6 3.3 12.0 12.6 Incr Delay (d2), s/veh 0.7 0.7 7.7 0.2 0.4 6.8 Initial Q Delay(d3),s/veh 0.0 0.0 0.0 0.0 0.0 0.0 %ile BackOfQ(50%),veh/lr0.8 0.9 0.9 0.1 0.1 0.7 Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh 8.2 8.2 20.3 3.5 12.4 19.4 LnGrp LOS A A C A B B Approach Vol, veh/h 649 1178 123 Approach Delay, s/veh 8.2 5.3 18.1 Approach LOS A B Timer - Assigned Phs 1 2 6 8
Uniform Delay (d), s/veh 7.5 7.5 12.6 3.3 12.0 12.6 Incr Delay (d2), s/veh 0.7 0.7 7.7 0.2 0.4 6.8 Initial Q Delay(d3),s/veh 0.0 0.0 0.0 0.0 0.0 0.0 0.0 %ile BackOfQ(50%),veh/ln0.8 0.9 0.9 0.1 0.1 0.7 Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh 8.2 8.2 20.3 3.5 12.4 19.4 LnGrp LOS A A C A B B Approach Vol, veh/h 649 1178 123 Approach Delay, s/veh 8.2 5.3 18.1 Approach LOS A B B Timer - Assigned Phs 1 2 6 8
Incr Delay (d2), s/veh
Initial Q Delay(d3),s/veh 0.0 0.0 0.0 0.0 0.0 0.0 0.0 %ile BackOfQ(50%),veh/li0.8 0.9 0.9 0.1 0.1 0.7 Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh 8.2 8.2 20.3 3.5 12.4 19.4 LnGrp LOS A A C A B B Approach Vol, veh/h 649 1178 123 Approach Delay, s/veh 8.2 5.3 18.1 Approach LOS A B B Timer - Assigned Phs 1 2 6 8
%ile BackOfQ(50%),veh/ln0.8 0.9 0.9 0.1 0.1 0.7 Unsig. Movement Delay, s/veh 8.2 8.2 20.3 3.5 12.4 19.4 LnGrp LOS A A C A B B Approach Vol, veh/h 649 1178 123 Approach Delay, s/veh 8.2 5.3 18.1 Approach LOS A A B Timer - Assigned Phs 1 2 6 8
Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh 8.2 8.2 20.3 3.5 12.4 19.4 LnGrp LOS A A C A B B Approach Vol, veh/h 649 1178 123 Approach Delay, s/veh 8.2 5.3 18.1 Approach LOS A B Timer - Assigned Phs 1 2 6 8
LnGrp Delay(d),s/veh 8.2 8.2 20.3 3.5 12.4 19.4 LnGrp LOS A A C A B B Approach Vol, veh/h 649 1178 123 Approach Delay, s/veh 8.2 5.3 18.1 Approach LOS A A B Timer - Assigned Phs 1 2 6 8
LnGrp LOS A A C A B B Approach Vol, veh/h 649 1178 123 Approach Delay, s/veh 8.2 5.3 18.1 Approach LOS A A B Timer - Assigned Phs 1 2 6 8
Approach Vol, veh/h 649 1178 123 Approach Delay, s/veh 8.2 5.3 18.1 Approach LOS A A B Timer - Assigned Phs 1 2 6 8
Approach Delay, s/veh 8.2 5.3 18.1 Approach LOS A A B Timer - Assigned Phs 1 2 6 8
Approach LOS A A B Timer - Assigned Phs 1 2 6 8
Timer - Assigned Phs 1 2 6 8
· · · · · · · · · · · · · · · · · · ·
Phs Duration (G+Y+Rc), s7.1 14.3 21.4 7.0
Change Period (Y+Rc), s 4.5 4.5 4.5
Max Green Setting (Gmax9, & 18.7 33.0 18.0
Max Q Clear Time (g_c+114),0s 6.2 6.8 3.7
Green Ext Time (p_c), s 0.1 3.0 7.9 0.3
Intersection Summary
HCM 6th Ctrl Delay 7.1
HCM 6th LOS A

	۶	→	•	•	←	•	•	†	<u> </u>	>	↓	✓	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻሻ	^	7	ች	^	7	ሻሻ	ħβ		ች	^	7	
Traffic Volume (veh/h)	188	131	266	155	278	52	320	607	54	56	767	413	
Future Volume (veh/h)	188	131	266	155	278	52	320	607	54	56	767	413	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.94	1.00		0.98	1.00		0.98	
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	
Work Zone On Approac	h	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	204	142	289	168	302	57	348	660	59	61	834	449	
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	418	929	401	179	837	353	325	1191	106	108	1167	510	
Arrive On Green	0.12	0.26	0.26	0.10	0.24	0.24	0.09	0.36	0.36	0.06	0.33	0.33	
Sat Flow, veh/h	3456	3554	1535	1781	3554	1498	3456	3292	294	1781	3554	1553	
Grp Volume(v), veh/h	204	142	289	168	302	57	348	356	363	61	834	449	
Grp Sat Flow(s), veh/h/h		1777	1535	1781	1777	1498	1728	1777	1809	1781	1777	1553	
Q Serve(g_s), s	5.0	2.8	15.5	8.5	6.4	2.7	8.5	14.5	14.5	3.0	18.6	24.7	
Cycle Q Clear(g_c), s	5.0	2.8	15.5	8.5	6.4	2.7	8.5	14.5	14.5	3.0	18.6	24.7	
Prop In Lane	1.00	0	1.00	1.00	•	1.00	1.00		0.16	1.00		1.00	
Lane Grp Cap(c), veh/h		929	401	179	837	353	325	643	654	108	1167	510	
V/C Ratio(X)	0.49	0.15	0.72	0.94	0.36	0.16	1.07	0.55	0.55	0.56	0.71	0.88	
Avail Cap(c_a), veh/h	420	1254	541	179	1159	489	325	643	654	175	1218	532	
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/vel		25.7	30.4	40.4	28.9	27.5	41.0	23.0	23.0	41.3	26.6	28.7	
Incr Delay (d2), s/veh	1.1	0.1	3.5	48.7	0.3	0.3	70.2	1.0	1.0	1.7	1.9	15.3	
Initial Q Delay(d3),s/vel		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%),vel		1.1	5.8	6.0	2.7	1.0	6.6	5.8	6.0	1.3	7.7	10.7	
Unsig. Movement Delay			3.0	3.0		1.5	3.0	3.0	3.0	1.0			
LnGrp Delay(d),s/veh	38.2	25.8	33.9	89.1	29.2	27.7	111.1	24.1	24.1	43.0	28.6	44.0	
LnGrp LOS	D	C	C	F	C	C	F	C	C	D	C	D	
Approach Vol, veh/h		635			527		<u> </u>	1067			1344		
Approach Delay, s/veh		33.5			48.1			52.5			34.4		
Approach LOS		33.5 C			40.1			52.5 D			34.4 C		
					U			U			U		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc)), \$ 3.6	29.1	13.0	34.7	15.9	26.8	10.0	37.7					
Change Period (Y+Rc),	s 4.5	5.5	4.5	5.0	5.0	5.5	4.5	5.0					
Max Green Setting (Gm	nax9, \$	31.9	8.5	31.0	11.0	29.5	8.9	30.6					
Max Q Clear Time (g_c	+1110,5s	17.5	10.5	26.7	7.0	8.4	5.0	16.5					
Green Ext Time (p_c), s		1.9	0.0	2.6	0.3	2.4	0.0	3.6					
Intersection Summary													
HCM 6th Ctrl Delay			41.6										
HCM 6th LOS			D										

1: Cuyamaca Street & Princess Joann Road

Intersection						
Int Delay, s/veh	3.3					
		WED	NET	NDD	051	ODT
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	¥		^	7	<u> ነ</u>	^
Traffic Vol, veh/h	0	167	718	0	84	361
Future Vol, veh/h	0	167	718	0	84	361
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-		-	None
Storage Length	0	-	-	150	50	-
Veh in Median Storag	e, # 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	182	780	0	91	392
	Minor1		Major1		Major2	
Conflicting Flow All	1354	780	0	0	780	0
Stage 1	780	-	-	-	-	-
Stage 2	574	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	_
Pot Cap-1 Maneuver	165	395	-	-	837	-
Stage 1	452	-	-	_	-	_
Stage 2	563	-	_	_	_	_
Platoon blocked, %			_	_		_
Mov Cap-1 Maneuver	147	395	_	_	837	_
Mov Cap-1 Maneuver		-	_	_	-	_
Stage 1	452		-			
Stage 2	502	-	_	-	_	-
Staye 2	302	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	21.6		0		1.9	
HCM LOS	C					
J 200						
Minor Lane/Major Mvr	nt	NBT	NBRV	VBLn1	SBL	SBT
Capacity (veh/h)		-	-		837	-
HCM Lane V/C Ratio		-	-	0.46	0.109	-
HCM Control Delay (s	5)	-	-	21.6	9.8	-
HCM Lane LOS		-	-	С	Α	-
HCM 95th %tile Q(veh	۱)	-	-	2.3	0.4	-
	•					

Intersection	
Intersection Delay, s/veh	10.3
Intersection LOS	В

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		Ž		7	, j	†	7
Traffic Vol, veh/h	1	3	119	20	8	3	250	3	35	0	11	2
Future Vol, veh/h	1	3	119	20	8	3	250	3	35	0	11	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	3	129	22	9	3	272	3	38	0	12	2
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	1
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			3			3		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	3			3			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	3			3			1			1		
HCM Control Delay	8.5			8.8			11.4			8		
HCM LOS	Α			Α			В			Α		

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3	
Vol Left, %	100%	0%	0%	1%	65%	0%	0%	0%	
Vol Thru, %	0%	100%	0%	2%	26%	100%	100%	0%	
Vol Right, %	0%	0%	100%	97%	10%	0%	0%	100%	
Sign Control	Stop								
Traffic Vol by Lane	250	3	35	123	31	0	11	2	
LT Vol	250	0	0	1	20	0	0	0	
Through Vol	0	3	0	3	8	0	11	0	
RT Vol	0	0	35	119	3	0	0	2	
Lane Flow Rate	272	3	38	134	34	0	12	2	
Geometry Grp	7	7	7	7	7	7	7	7	
Degree of Util (X)	0.413	0.005	0.045	0.176	0.054	0	0.017	0.003	
Departure Headway (Hd)	5.471	4.969	4.266	4.752	5.783	5.267	5.267	4.562	
Convergence, Y/N	Yes								
Сар	658	720	839	755	619	0	678	782	
Service Time	3.201	2.698	1.995	2.476	3.516	3.01	3.01	2.305	
HCM Lane V/C Ratio	0.413	0.004	0.045	0.177	0.055	0	0.018	0.003	
HCM Control Delay	12	7.7	7.2	8.5	8.8	8	8.1	7.3	
HCM Lane LOS	В	Α	Α	Α	Α	N	Α	Α	
HCM 95th-tile Q	2	0	0.1	0.6	0.2	0	0.1	0	

									ļ			<u></u>
Intersection												
Intersection Delay, s/ve												
Intersection LOS	F											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBI	L	L SBT
Lane Configurations		4			4		۲	ĵ.		ř		ĵ»
Traffic Vol, veh/h	0	1	7	111	2	95	7	669	238	45		333
Future Vol, veh/h	0	1	7	111	2	95	7	669	238	45		333
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2		2
Mvmt Flow	0	1	8	121	2	103	8	727	259	49		362
Number of Lanes	0	1	0	0	1	0	1	1	0	1		1
Approach		EB		WB			NB			SB		
Opposing Approach		WB		EB			SB			NB		
Opposing Lanes		1		1			2			2		
Conflicting Approach Le	eft	SB		NB			EB			WB		
Conflicting Lanes Left		2		2			1			1		
Conflicting Approach R	ight	NB		SB			WB			EB		
Conflicting Lanes Right		2		2			1			1		
HCM Control Delay		11.3		15.3			280.9			18.3		
HCM LOS		В		С			F			С		
Lane	N	NBLn11	NBLn2	EBLn1V	VBLn1	SBLn1	SBLn2					
Vol Left, %		100%	0%	0%	53%	100%	0%					
Vol Thru, %		0%	74%	12%	1%	0%	99%					
Vol Right, %		0%	26%	88%	46%	0%	1%					
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane		7	907	8	208	45	335					
LT Vol		7	0	0	111	45	0					
Through Vol		0	669	1	2	0	333					
RT Vol		0	238	7	95	0	2					
Lane Flow Rate		8	986	9	226	49	364					
Geometry Grp		7	7	2	2	7	7					
Degree of Util (X)		0.014	1.577		0.401	0.089	0.611					
Departure Headway (He	d)	6.451	5.757			7.209	6.693					
Convergence, Y/N		Yes	Yes	Yes	Yes	Yes	Yes					
Cap		558	641	443	488	500	543					

0.014 1.538

283

9.2

0 52.2

4.153 3.459 6.129 5.424 4.909 4.393

11.3

В

0.1

0.02 0.463 0.098

15.3

C

1.9

10.6

В

0.3

0.67

19.3

C

4.1

Service Time

HCM Lane V/C Ratio

HCM Control Delay

HCM Lane LOS

HCM 95th-tile Q

	۶	→	•	•	←	•	•	†	/	>	ţ	✓	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		f)			4		ሻ	∱ }		ሻ	∱ }		
Traffic Volume (veh/h)	13	33	123	32	7	7	165	529	45	3	324	8	
Future Volume (veh/h)	13	33	123	32	7	7	165	529	45	3	324	8	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.98	1.00		0.96	1.00		0.95	
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	
Work Zone On Approac	:h	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	14	36	134	35	8	8	179	575	49	3	352	9	
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	537	71	264	282	64	31	298	1092	93	117	809	21	
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.17	0.33	0.33	0.07	0.23	0.23	
Sat Flow, veh/h	1388	340	1264	502	307	151	1781	3303	281	1781	3536	90	
Grp Volume(v), veh/h	14	0	170	51	0	0	179	309	315	3	176	185	
Grp Sat Flow(s), veh/h/lr	n1388	0	1604	960	0	0	1781	1777	1807	1781	1777	1849	
Q Serve(g_s), s	0.0	0.0	3.2	0.1	0.0	0.0	3.2	4.8	4.8	0.1	2.9	2.9	
Cycle Q Clear(g_c), s	0.2	0.0	3.2	3.3	0.0	0.0	3.2	4.8	4.8	0.1	2.9	2.9	
Prop In Lane	1.00		0.79	0.69		0.16	1.00		0.16	1.00		0.05	
Lane Grp Cap(c), veh/h	537	0	335	378	0	0	298	587	597	117	407	423	
V/C Ratio(X)	0.03	0.00	0.51	0.13	0.00	0.00	0.60	0.53	0.53	0.03	0.43	0.44	
Avail Cap(c_a), veh/h	1405	0	1337	1208	0	0	860	2521	2565	495	2158	2245	
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	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/vel	h 10.8	0.0	12.0	11.1	0.0	0.0	13.2	9.3	9.3	14.9	11.3	11.3	
Incr Delay (d2), s/veh	0.0	0.0	1.2	0.2	0.0	0.0	1.9	0.7	0.7	0.1	0.7	0.7	
Initial Q Delay(d3),s/veh	า 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%),vel	h/lr0.1	0.0	1.0	0.3	0.0	0.0	1.1	1.2	1.3	0.0	0.9	0.9	
Unsig. Movement Delay	, s/veh												
LnGrp Delay(d),s/veh	10.8	0.0	13.2	11.2	0.0	0.0	15.1	10.0	10.0	15.0	12.0	12.0	
LnGrp LOS	В	Α	В	В	Α	Α	В	В	В	В	В	В	
Approach Vol, veh/h		184			51			803			364		
Approach Delay, s/veh		13.0			11.2			11.1			12.0		
Approach LOS		В			В			В			В		
Timer - Assigned Phs	1	2		4	5	6		8					
Phs Duration (G+Y+Rc)), s6.7	15.8		11.6	10.2	12.3		11.6					
Change Period (Y+Rc),		4.5		4.5	4.5	4.5		4.5					
Max Green Setting (Gm		48.5		28.5	16.5	41.5		28.5					
Max Q Clear Time (g_c		6.8		5.2	5.2	4.9		5.3					
Green Ext Time (p_c), s		3.9		1.1	0.3	2.0		0.2					
Intersection Summary													
HCM 6th Ctrl Delay			11.6										
HCM 6th LOS			В										
I IOIVI UIII LUO			D										

Intersection					
Intersection Delay, s/ve	2 04.3				
Intersection LOS	F				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			4		7	ĥ		Ť	f)		
Traffic Vol, veh/h	1	1	5	102	8	87	13	834	109	45	415	0	
Future Vol, veh/h	1	1	5	102	8	87	13	834	109	45	415	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	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	1	1	5	111	9	95	14	907	118	49	451	0	
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0	
Approach	EB			WB			NB			SB			
Opposing Approach	WB			EB			SB			NB			
Opposing Lanes	1			1			2			2			
Conflicting Approach Le	eft SB			NB			EB			WB			
Conflicting Lanes Left	2			2			1			1			
Conflicting Approach Ri	gh N B			SB			WB			EB			
Conflicting Lanes Right	2			2			1			1			
HCM Control Delay	11.8			15.5			330.5			25.8			
HCM LOS	В			С			F			D			

Lane	NBLn11	NBLn2	EBLn1V	VBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	14%	52%	100%	0%
Vol Thru, %	0%	88%	14%	4%	0%	100%
Vol Right, %	0%	12%	71%	44%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	943	7	197	45	415
LT Vol	13	0	1	102	45	0
Through Vol	0	834	1	8	0	415
RT Vol	0	109	5	87	0	0
Lane Flow Rate	14	1025	8	214	49	451
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.026	1.694	0.015	0.389	0.089	0.755
Departure Headway (Hd)	6.539	5.949	8.65	7.709	7.272	6.76
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	551	625	416	471	496	541
Service Time	4.239	3.649	6.65	5.709	4.972	4.46
HCM Lane V/C Ratio	0.025	1.64	0.019	0.454	0.099	0.834
HCM Control Delay	9.4	334.9	11.8	15.5	10.7	27.4
HCM Lane LOS	А	F	В	С	В	D
HCM 95th-tile Q	0.1	59	0	1.8	0.3	6.6

	•	→	•	•	←	•	4	†	/	/	ţ	4	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		₽		7	ĵ.		ነ	∱ ∱		ነ	∱ ∱		
Traffic Volume (veh/h)	6	114	63	146	193	153	95	586	204	100	384	9	
Future Volume (veh/h)	6	114	63	146	193	153	95	586	204	100	384	9	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.97	
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	
Work Zone On Approach		No	4070	4070	No	4070	4070	No	4070	4070	No	4070	
	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	7	124	68	159	210	166	103	637	222	109	417	10	
	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	23	193	106	206	263	208	167	847	295	170	1173	28	
	0.01	0.17	0.17	0.12	0.27	0.27	0.09	0.33	0.33	0.10	0.33	0.33	
	1781 _	1130	619	1781	962	760	1781	2574	896	1781	3544	85	
Grp Volume(v), veh/h	7	0	192	159	0	376	103	439	420	109	209	218	
Grp Sat Flow(s), veh/h/ln		0	1749	1781	0	1722	1781	1777	1694	1781	1777	1852	
Q Serve(g_s), s	0.2	0.0	6.4	5.4	0.0	12.6	3.5	13.7	13.8	3.7	5.5	5.6	
Cycle Q Clear(g_c), s	0.2	0.0	6.4	5.4	0.0	12.6	3.5	13.7	13.8	3.7	5.5	5.6	
Prop In Lane	1.00	^	0.35	1.00	^	0.44	1.00	504	0.53	1.00	500	0.05	
Lane Grp Cap(c), veh/h	23	0	299	206	0	472	167	584	557	170	588	613	
	0.31	0.00	0.64	0.77	0.00	0.80	0.62	0.75	0.75	0.64	0.36	0.36	
Avail Cap(c_a), veh/h	214	0	660	500	0	926	386	899	857	272	785	818	
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	0.00	1.00	1.00	1.00 18.6	1.00 18.6	1.00 27.1	1.00	1.00 15.8	
Uniform Delay (d), s/veh	7.4	0.0	24.0	26.7 6.1	0.0	3.1	3.7	2.0	2.1	4.0	15.8 0.4	0.4	
Incr Delay (d2), s/veh Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	
%ile BackOfQ(50%),veh		0.0	2.7	2.6	0.0	5.2	1.5	5.1	4.9	1.6	2.0	2.1	
Unsig. Movement Delay,			2.1	2.0	0.0	5.2	1.0	5.1	4.3	1.0	2.0	۷.۱	
	37.8	0.0	26.3	32.8	0.0	24.1	30.9	20.6	20.7	31.2	16.2	16.2	
LnGrp LOS	D	Α	20.5 C	02.0 C	Α	C C	C	20.0 C	20.7 C	C C	В	В	
Approach Vol, veh/h		199			535			962			536	D	
Approach Delay, s/veh		26.7			26.7			21.8			19.2		
Approach LOS		20.7 C			20.7 C			21.0 C			19.2 B		
											Ь		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc),		25.0	11.7	15.2	10.3	25.1	5.3	21.6					
Change Period (Y+Rc),		4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gma	,,	31.5	17.5	23.5	13.5	27.5	7.5	33.5					
Max Q Clear Time (g_c+		15.8	7.4	8.4	5.5	7.6	2.2	14.6					
Green Ext Time (p_c), s	0.1	4.7	0.3	0.9	0.1	2.2	0.0	2.4					
Intersection Summary													
HCM 6th Ctrl Delay			22.8										
HCM 6th LOS			С										

Intersection					
Intersection Delay, s/ve	e h 91.3				
Intersection LOS	F				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			4		- 1	•	7	- 1	Þ		
Traffic Vol, veh/h	0	0	6	57	2	2	9	968	65	2	501	3	
Future Vol, veh/h	0	0	6	57	2	2	9	968	65	2	501	3	
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	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	0	7	62	2	2	10	1052	71	2	545	3	
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	0	
Approach		EB		WB			NB			SB			
Opposing Approach		WB		EB			SB			NB			
Opposing Lanes		1		1			2			3			
Conflicting Approach L	eft	SB		NB			EB			WB			
Conflicting Lanes Left		2		3			1			1			
Conflicting Approach R	ight	NB		SB			WB			EB			
Conflicting Lanes Right	t	3		2			1			1			
HCM Control Delay		10.9		13.2			266.3			60.6			
HCM LOS		В		В			F			F			

Lane	NBLn1	NBLn2	NBLn3	EBLn1\	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	93%	100%	0%
Vol Thru, %	0%	100%	0%	0%	3%	0%	99%
Vol Right, %	0%	0%	100%	100%	3%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	968	65	6	61	2	504
LT Vol	9	0	0	0	57	2	0
Through Vol	0	968	0	0	2	0	501
RT Vol	0	0	65	6	2	0	3
Lane Flow Rate	10	1052	71	7	66	2	548
Geometry Grp	7	7	7	7	7	8	8
Degree of Util (X)	0.016	1.586	0.093	0.013	0.148	0.004	0.973
Departure Headway (Hd)	5.93	5.425	4.719	8.11	8.943	7.811	7.302
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Сар	601	673	755	444	404	461	499
Service Time	3.689	3.184	2.477	5.81	6.643	5.511	5.002
HCM Lane V/C Ratio	0.017	1.563	0.094	0.016	0.163	0.004	1.098
HCM Control Delay	8.8	286	8	10.9	13.2	10.5	60.8
HCM Lane LOS	Α	F	Α	В	В	В	F
HCM 95th-tile Q	0	55.2	0.3	0	0.5	0	12.6

•	•	†	/	/	↓
Movement WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	7	ħβ		ኝ	^
Traffic Volume (veh/h) 87	20	952	161	29	632
Future Volume (veh/h) 87	20	952	161	29	632
Initial Q (Qb), veh 0	0	0	0	0	0
Ped-Bike Adj(A_pbT) 1.00	1.00		0.97	1.00	_
Parking Bus, Adj 1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach No	1.00	No	1.00	1.00	No
Adj Sat Flow, veh/h/ln 1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h 95	22	1035	175	32	687
Peak Hour Factor 0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, % 2	2	0.92	2	2	2
	125	1513	255	55	2348
Arrive On Green 0.08	0.08	0.50	0.50	0.03	0.66
Sat Flow, veh/h 1781	1585	3120	511	1781	3647
Grp Volume(v), veh/h 95	22	607	603	32	687
Grp Sat Flow(s), veh/h/ln1781	1585	1777	1760	1781	1777
Q Serve(g_s), s 1.8	0.4	9.0	9.0	0.6	2.8
Cycle Q Clear(g_c), s 1.8	0.4	9.0	9.0	0.6	2.8
Prop In Lane 1.00	1.00		0.29	1.00	
Lane Grp Cap(c), veh/h 140	125	888	880	55	2348
V/C Ratio(X) 0.68	0.18	0.68	0.69	0.59	0.29
Avail Cap(c_a), veh/h 934	831	1230	1218	232	3385
HCM Platoon Ratio 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
Uniform Delay (d), s/veh 15.5	14.9	6.6	6.6	16.5	2.5
Incr Delay (d2), s/veh 5.6	0.7	0.0	1.0	9.6	0.1
	0.7	0.9		0.0	0.1
Initial Q Delay(d3),s/veh 0.0			0.0		
%ile BackOfQ(50%),veh/lr0.8	0.2	1.6	1.6	0.3	0.0
Unsig. Movement Delay, s/ve				00.0	0 =
LnGrp Delay(d),s/veh 21.1	15.5	7.5	7.5	26.2	2.5
LnGrp LOS C	В	A	A	С	A
Approach Vol, veh/h 117		1210			719
Approach Delay, s/veh 20.1		7.5			3.6
Approach LOS C		Α			Α
• •	0				
Timer - Assigned Phs 1	2				6
Phs Duration (G+Y+Rc), s5.6	21.8				27.3
Change Period (Y+Rc), s 4.5	4.5				4.5
Max Green Setting (Gmax), 5	23.9				32.9
Max Q Clear Time (g_c+l12),6s	11.0				4.8
Green Ext Time (p_c), s 0.0	6.2				4.8
Intersection Summary					
HCM 6th Ctrl Delay		6.8			
HCM 6th LOS		Α			
HOW OUT LOS		А			

	۶	→	•	•	←	•	•	†	/	\	↓	✓	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4		*	4	7	ች	^			† }		
Traffic Volume (veh/h)	23	0	52	4	0	0	78	1085	0	0	682	16	
Future Volume (veh/h)	23	0	52	4	0	0	78	1085	0	0	682	16	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		1.00	1.00		1.00	1.00		0.96	
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	
Work Zone On Approac		No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	0	0	1870	1870	
Adj Flow Rate, veh/h	25	0	57	4	0	0	85	1179	0	0	741	17	
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	0	0	2	2	
Cap, veh/h	52	0	118	16	0	7	113	1836	0	0	1172	27	
Arrive On Green	0.11	0.00	0.11	0.00	0.00	0.00	0.06	0.52	0.00	0.00	0.33	0.33	
Sat Flow, veh/h	471	0	1075	3563	0	1585	1781	3647	0	0	3640	81	
Grp Volume(v), veh/h	82	0	0	4	0	0	85	1179	0	0	371	387	
Grp Sat Flow(s),veh/h/li		0	0	1781	0	1585	1781	1777	0	0	1777	1851	
Q Serve(g_s), s	1.8	0.0	0.0	0.0	0.0	0.0	1.7	8.8	0.0	0.0	6.5	6.5	
Cycle Q Clear(g_c), s	1.8	0.0	0.0	0.0	0.0	0.0	1.7	8.8	0.0	0.0	6.5	6.5	
Prop In Lane	0.30		0.70	1.00		1.00	1.00		0.00	0.00		0.04	
_ane Grp Cap(c), veh/h		0	0	16	0	7	113	1836	0	0	587	612	
//C Ratio(X)	0.48	0.00	0.00	0.26	0.00	0.00	0.75	0.64	0.00	0.00	0.63	0.63	
Avail Cap(c_a), veh/h	761	0	0	1509	0	672	219	2720	0	0	923	961	
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	
Jpstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	
Uniform Delay (d), s/vel		0.0	0.0	18.2	0.0	0.0	16.9	6.4	0.0	0.0	10.4	10.4	
Incr Delay (d2), s/veh	2.1	0.0	0.0	8.5	0.0	0.0	9.7	0.4	0.0	0.0	1.1	1.1	
nitial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),vel		0.0	0.0	0.0	0.0	0.0	0.9	1.5	0.0	0.0	1.8	1.9	
Jnsig. Movement Delay													
LnGrp Delay(d),s/veh	17.4	0.0	0.0	26.6	0.0	0.0	26.6	6.8	0.0	0.0	11.5	11.5	
LnGrp LOS	В	Α	Α	С	Α	Α	С	Α	Α	Α	В	В	
Approach Vol, veh/h		82			4			1264			758		
Approach Delay, s/veh		17.4			26.6			8.1			11.5		
Approach LOS		В			С			Α			В		
Timer - Assigned Phs		2		4	5	6		8					
Phs Duration (G+Y+Rc)	١	23.4		8.5	6.8	16.6		4.7					
Change Period (Y+Rc),		4.5		6.5 4.5	4.5	4.5		4.7					
Max Green Setting (Gm		28.0		18.0	4.5	19.0		15.5					
Max Q Clear Time (g_c		10.8		3.8	3.7	8.5		2.0					
Green Ext Time (p_c), s	, .	7.6		0.3	0.0	3.2		0.0					
, ,	•	7.0		0.3	0.0	J.Z		0.0					
Intersection Summary													
HCM 6th Ctrl Delay			9.7										
HCM 6th LOS			Α										
Notes													

User approved volume balancing among the lanes for turning movement.

	ᄼ	→	•	•	•	•	4	†	/	>	↓	✓	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		^	1	ሻሻ	ΦÞ		ሻሻ	^	7	*	ħβ		
Traffic Volume (veh/h)	334	685	273	318	317	68	258	656	438	39	382	190	
Future Volume (veh/h)	334	685	273	318	317	68	258	656	438	39	382	190	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	v	0.98	1.00	•	0.98	1.00	•	1.00	1.00	•	0.98	
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	
Work Zone On Approac		No	1.00	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	363	745	297	346	345	74	280	713	476	42	415	207	
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	299	1250	545	411	880	186	235	1071	666	53	604	298	
Arrive On Green	0.17	0.35	0.35	0.12	0.30	0.30	0.07	0.30	0.30	0.03	0.26	0.26	
Sat Flow, veh/h	1781	3554	1549	3456	2909	616	3456	3554	1585	1781	2292	1130	
Grp Volume(v), veh/h	363	745	297	346	209	210	280	713	476	42	321	301	
Grp Sat Flow(s),veh/h/li		1777	1549	1728	1777	1747	1728	1777	1585	1781	1777	1645	
Q Serve(g_s), s	16.8	17.2	15.4	9.8	9.3	9.5	6.8	17.5	24.9	2.3	16.2	16.5	
Cycle Q Clear(g_c), s	16.8	17.2	15.4	9.8	9.3	9.5	6.8	17.5	24.9	2.3	16.2	16.5	
Prop In Lane	1.00		1.00	1.00		0.35	1.00		1.00	1.00		0.69	
Lane Grp Cap(c), veh/h		1250	545	411	538	529	235	1071	666	53	468	433	
V/C Ratio(X)	1.21	0.60	0.54	0.84	0.39	0.40	1.19	0.67	0.71	0.79	0.68	0.70	
Avail Cap(c_a), veh/h	299	1250	545	442	538	529	235	1127	691	71	515	477	
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	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/vel	h 41.6	26.6	26.0	43.1	27.6	27.6	46.6	30.5	24.0	48.2	33.1	33.2	
Incr Delay (d2), s/veh	122.6	2.1	3.9	11.7	2.0	2.2	120.3	1.6	3.7	24.5	4.1	4.7	
Initial Q Delay(d3),s/vel	n 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%),vel	h/ 11 7.3	7.3	6.1	4.7	4.1	4.1	6.8	7.5	9.5	1.4	7.3	7.0	
Unsig. Movement Delay	y, s/veh	l											
LnGrp Delay(d),s/veh	164.2	28.7	29.9	54.8	29.6	29.8	166.9	32.1	27.7	72.7	37.2	38.0	
LnGrp LOS	F	С	С	D	С	С	F	С	С	Ε	D	D	
Approach Vol, veh/h		1405			765			1469			664		
Approach Delay, s/veh		64.0			41.1			56.4			39.8		
Approach LOS		Е			D			Е			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc)), \$6.1	41.5	11.0	31.4	21.0	36.6	7.2	35.3					
Change Period (Y+Rc),		6.3	* 4.2	* 5.1	* 4.2	* 6.3	* 4.2	5.1					
Max Green Setting (Gm		31.7	* 6.8	* 29	* 17	* 29	* 4	31.7					
Max Q Clear Time (g_c		19.2	8.8	18.5	18.8	11.5	4.3	26.9					
Green Ext Time (p_c), s		6.4	0.0	3.9	0.0	2.7	0.0	3.3					
ntersection Summary													
HCM 6th Ctrl Delay			53.6										
HCM 6th LOS			D										
Notes													

^{*} HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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Movement	EBT	EBR	WBL	WBT	NBL	NBR
	∱ }		*	^	ች	7
	1068	29	105	670	16	119
	1068	29	105	670	16	119
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	-	0.97	1.00		1.00	1.00
, , , , , , , , , , , , , , , , , , ,	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No	No	
	1870	1870	1870	1870	1870	1870
	1161	32	114	728	17	129
	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
	1768	49	150	2441	196	174
			0.08			0.11
	0.50	0.50		0.69	0.11	
·	3622	97	1781	3647	1781	1585
\ //	584	609	114	728	17	129
Grp Sat Flow(s), veh/h/ln1		1849	1781	1777	1781	1585
νο— γ·	10.8	10.8	2.8	3.6	0.4	3.5
Cycle Q Clear(g_c), s	10.8	10.8	2.8	3.6	0.4	3.5
Prop In Lane		0.05	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	890	926	150	2441	196	174
	0.66	0.66	0.76	0.30	0.09	0.74
	2026	2108	623	5656	824	734
	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		8.2	19.8	2.7	17.7	19.1
	0.2	0.2	7.6	0.1	0.2	6.0
Incr Delay (d2), s/veh						
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/		2.8	1.3	0.3	0.1	1.4
Unsig. Movement Delay,						
LnGrp Delay(d),s/veh	9.1	9.0	27.5	2.8	17.9	25.1
LnGrp LOS	Α	Α	С	Α	В	С
Approach Vol, veh/h 1	1193			842	146	
Approach Delay, s/veh	9.0			6.1	24.3	
Approach LOS	Α			Α	С	
		_				^
Timer - Assigned Phs	1	2				6
Phs Duration (G+Y+Rc),		26.7				34.9
Change Period (Y+Rc), s		4.5				4.5
Max Green Setting (Gma	a 1 k5,,. 5 s	50.5				70.5
Max Q Clear Time (g_c+l	114,8s	12.8				5.6
Green Ext Time (p_c), s		9.3				5.5
Intersection Summary						
			0.0			
HCM 6th Ctrl Delay			8.9			
HCM 6th LOS			Α			

	۶	→	•	•	←	•	•	†	/	/	↓	✓	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻሻ	^	7	ች	^	7	ሻሻ	ተ ኈ			^	7	
Traffic Volume (veh/h)	414	292	283	116	158	31	346	676	126	88	492	225	
Future Volume (veh/h)	414	292	283	116	158	31	346	676	126	88	492	225	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	1.00		0.98	1.00		0.96	
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	
Work Zone On Approac		No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	450	317	308	126	172	34	376	735	137	96	535	245	
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	575	999	433	159	703	299	466	952	177	134	923	393	
Arrive On Green	0.17	0.28	0.28	0.09	0.20	0.20	0.13	0.32	0.32	0.08	0.26	0.26	
Sat Flow, veh/h	3456	3554	1542	1781	3554	1512	3456	2981	555	1781	3554	1515	
Grp Volume(v), veh/h	450	317	308	126	172	34	376	438	434	96	535	245	
Grp Sat Flow(s), veh/h/l		1777	1542	1781	1777	1512	1728	1777	1760	1781	1777	1515	
Q Serve(g_s), s	10.3	5.8	14.9	5.7	3.4	1.5	8.8	18.5	18.5	4.4	10.9	11.8	
Cycle Q Clear(g_c), s	10.3	5.8	14.9	5.7	3.4	1.5	8.8	18.5	18.5	4.4	10.9	11.8	
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		1.00	
Lane Grp Cap(c), veh/h		999	433	159	703	299	466	568	562	134	923	393	
V/C Ratio(X)	0.78	0.32	0.71	0.79	0.24	0.11	0.81	0.77	0.77	0.72	0.58	0.62	
Avail Cap(c_a), veh/h	917	1594	692	322	1273	542	721	767	760	269	1329	567	
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/ve		23.5	26.8	37.0	28.0	27.3	34.8	25.5	25.5	37.5	26.7	27.1	
Incr Delay (d2), s/veh	2.9	0.2	2.6	3.4	0.2	0.2	1.9	3.4	3.4	2.7	0.6	1.6	
Initial Q Delay(d3),s/vel		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%),ve		2.3	5.4	2.6	1.4	0.5	3.6	7.7	7.6	1.9	4.4	4.2	
Unsig. Movement Delay													
LnGrp Delay(d),s/veh	36.0	23.7	29.4	40.4	28.2	27.5	36.7	28.9	28.9	40.2	27.3	28.7	
LnGrp LOS	D	С	С	D	С	С	D	С	С	D	С	С	
Approach Vol, veh/h		1075			332			1248			876		
Approach Delay, s/veh		30.5			32.8			31.3			29.1		
Approach LOS		С			С			С			С		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), \$ 1.9	28.8	15.7	26.5	18.8	21.9	10.7	31.5					
Change Period (Y+Rc),		5.5	4.5	5.0	5.0	5.5	4.5	5.0					
Max Green Setting (Gr		37.2	17.3	31.0	22.0	29.7	12.5	35.8					
Max Q Clear Time (g_c		16.9	10.8	13.8	12.3	5.4	6.4	20.5					
Green Ext Time (p_c),		3.6	0.4	4.0	1.4	1.3	0.0	4.7					
Intersection Summary													
HCM 6th Ctrl Delay			30.6										
HCM 6th LOS			C										
1.5101 001 200			J										

ATTACHMENT C EXISTING + CUMULATIVE PROJECTS + PROJECT (NO MAGNOLIA AVENUE EXTENSION) MITIGATED PEAK HOUR INTERSECTION AND ARTERIAL ANALYSIS WORKSHEETS

	۶	→	•	•	←	4	1	†	~	/	†	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	ተ ኈ		7	∱ ⊅	
Traffic Volume (veh/h)	0	1	12	233	0	46	3	326	68	89	647	0
Future Volume (veh/h)	0	1	12	233	0	46	3	326	68	89	647	0
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		0.97	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1	13	253	0	50	3	354	74	97	703	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	0	34	438	527	12	70	6	869	179	125	1298	0
Arrive On Green	0.00	0.30	0.30	0.30	0.00	0.30	0.00	0.30	0.30	0.07	0.37	0.00
Sat Flow, veh/h	0	114	1484	1157	39	236	1781	2916	601	1781	3647	0
Grp Volume(v), veh/h	0	0	14	303	0	0	3	214	214	97	703	0
Grp Sat Flow(s), veh/h/ln	0	0	1598	1433	0	0	1781	1777	1741	1781	1777	0
Q Serve(g_s), s	0.0	0.0	0.2	6.4	0.0	0.0	0.1	3.4	3.5	1.9	5.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.2	6.7	0.0	0.0	0.1	3.4	3.5	1.9	5.6	0.0
Prop In Lane	0.00	0	0.93	0.83	^	0.17	1.00	500	0.35	1.00	4000	0.00
Lane Grp Cap(c), veh/h	0	0	472	608	0	0	6	530	519	125	1298	0
V/C Ratio(X)	0.00	0.00	0.03	0.50	0.00	0.00	0.51	0.40	0.41	0.77	0.54	0.00
Avail Cap(c_a), veh/h	1.00	1.00	1882	1864	0	0	250	1495	1464	799	4086	1.00
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)	0.00	0.00	1.00 8.9	1.00 11.2	0.00	0.00	1.00 17.7	1.00 10.0	1.00 10.0	1.00 16.3	1.00 9.0	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.6	0.0	0.0	55.8	0.5	0.5	9.7	0.4	0.0
Incr Delay (d2), s/veh 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	0.4	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.8	0.0	0.0	0.0	1.0	1.0	1.0	1.5	0.0
Unsig. Movement Delay, s/veh		0.0	0.1	1.0	0.0	0.0	0.1	1.0	1.0	1.0	1.5	0.0
LnGrp Delay(d),s/veh	0.0	0.0	9.0	11.8	0.0	0.0	73.5	10.5	10.5	26.0	9.3	0.0
LnGrp LOS	Α	Α	3.0 A	В	Α	Α	75.5 E	В	В	20.0 C	9.5 A	Α
Approach Vol, veh/h		14			303			431			800	
Approach Delay, s/veh		9.0			11.8			11.0			11.3	
Approach LOS		3.0 A			В			В			В	
					Ь						D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	14.6		14.5	4.1	17.0		14.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	16.0	30.0		42.0	5.0	41.0		42.0				
Max Q Clear Time (g_c+l1), s	3.9	5.5		2.2	2.1	7.6		8.7				
Green Ext Time (p_c), s	0.2	2.5		0.0	0.0	5.3		2.1				
Intersection Summary												
HCM 6th Ctrl Delay			11.3									
HCM 6th LOS			В									

	۶	→	•	•	←	4	1	†	~	/	†	✓
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	∱ ኈ		*	∱ ∱	
Traffic Volume (veh/h)	0	1	7	264	4	45	5	358	48	82	823	1
Future Volume (veh/h)	0	1	7	264	4	45	5	358	48	82	823	1
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		0.98	1.00		0.99	1.00		0.99
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1	8	287	4	49	5	389	52	89	895	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	0	56	452	534	9	65	10	1055	140	114	1434	2
Arrive On Green	0.00	0.32	0.32	0.32	0.32	0.32	0.01	0.34	0.34	0.06	0.39	0.39
Sat Flow, veh/h	0	179	1430	1190	29	205	1781	3150	418	1781	3642	4
Grp Volume(v), veh/h	0	0	9	340	0	0	5	218	223	89	437	459
Grp Sat Flow(s),veh/h/ln	0	0	1608	1425	0	0	1781	1777	1791	1781	1777	1870
Q Serve(g_s), s	0.0	0.0	0.2	8.9	0.0	0.0	0.1	3.9	4.0	2.1	8.3	8.3
Cycle Q Clear(g_c), s	0.0	0.0	0.2	9.0	0.0	0.0	0.1	3.9	4.0	2.1	8.3	8.3
Prop In Lane	0.00		0.89	0.84		0.14	1.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	0	0	508	608	0	0	10	595	600	114	700	736
V/C Ratio(X)	0.00	0.00	0.02	0.56	0.00	0.00	0.52	0.37	0.37	0.78	0.62	0.62
Avail Cap(c_a), veh/h	0	0	1604	1581	0	0	169	1435	1446	508	1772	1865
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)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	9.9	13.0	0.0	0.0	20.9	10.6	10.6	19.4	10.3	10.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.8	0.0	0.0	37.4	0.4	0.4	10.8	0.9	0.9
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	0.0	0.0	0.1	2.5	0.0	0.0	0.1	1.2	1.2	1.1	2.5	2.6
Unsig. Movement Delay, s/veh		0.0	0.0	40.0	0.0	0.0	50.0	44.0	44.0	00.0	44.0	44.4
LnGrp Delay(d),s/veh	0.0	0.0	9.9	13.8	0.0	0.0	58.3	11.0	11.0	30.3	11.2	11.1
LnGrp LOS	Α	A	A	В	A	A	E	В	В	С	В	В
Approach Vol, veh/h		9			340			446			985	
Approach Delay, s/veh		9.9			13.8			11.5			12.9	
Approach LOS		А			В			В			В	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	18.1		17.3	4.2	20.6		17.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	12.0	34.0		42.0	4.0	42.0		42.0				
Max Q Clear Time (g_c+I1), s	4.1	6.0		2.2	2.1	10.3		11.0				
Green Ext Time (p_c), s	0.1	2.6		0.0	0.0	6.3		2.4				
Intersection Summary												
HCM 6th Ctrl Delay			12.7									
HCM 6th LOS			В									

	۶	→	•	•	—	•	1	†	~	/	+	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		7	ħβ		*	∱ ∱	
Traffic Volume (veh/h)	0	0	11	93	1	1	1	420	32	3	1066	0
Future Volume (veh/h)	0	0	11	93	1	1	1	420	32	3	1066	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	4.00	1.00	1.00	4.00	1.00	1.00	4.00	0.99	1.00	4.00	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
Work Zone On Approach	4070	No	4070	4070	No	4070	4070	No	4070	4070	No	4070
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	12	101	1	1	1	457	35	3	1159	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	0	0	162	327	1 0.10	1	5	1894	145	6	2020	0
Arrive On Green	0.00	0.00	0.10	0.10		0.10	0.00	0.57	0.57	0.00	0.57	0.00
Sat Flow, veh/h	0	0	1581	1284	13	13	1781	3344	255	1781	3647	0
Grp Volume(v), veh/h	0	0	12	103	0	0	1	242	250	3	1159	0
Grp Sat Flow(s),veh/h/ln	0	0	1581	1310	0	0	1781	1777	1823	1781	1777	0
Q Serve(g_s), s	0.0	0.0	0.3	2.6	0.0	0.0	0.0	2.5	2.5	0.1	7.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.3	2.9	0.0	0.0	0.0	2.5	2.5	0.1	7.6	0.0
Prop In Lane	0.00	٥	1.00	0.98	٥	0.01	1.00	1006	0.14	1.00	2020	0.00
Lane Grp Cap(c), veh/h	0	0	162	329	0.00	0	5	1006	1032	6	2020	0
V/C Ratio(X)	0.00	0.00	0.07 907	0.31 990	0.00	0.00	0.21 292	0.24 2961	0.24 3037	0.51 292	0.57 5921	0.00
Avail Cap(c_a), veh/h 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)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.00	0.00	14.9	16.1	0.00	0.00	18.2	4.0	4.0	18.2	5.1	0.00
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.5	0.0	0.0	19.6	0.1	0.1	55.8	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.4	0.4	0.0	1.2	0.0
Unsig. Movement Delay, s/veh		0.0	0.1	0.0	0.0	0.0	0.0	0.4	0.4	0.1	1.2	0.0
LnGrp Delay(d),s/veh	0.0	0.0	15.0	16.7	0.0	0.0	37.8	4.1	4.1	74.0	5.3	0.0
LnGrp LOS	Α	Α	В	В	Α	A	D	A	A	7 4.0 E	Α	A
Approach Vol, veh/h		12			103			493			1162	
Approach Delay, s/veh		15.0			16.7			4.2			5.5	
Approach LOS		В			В			Α.Α			A	
											, ,	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.1	24.7		7.8	4.0	24.8		7.8				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	61.0		21.0	6.0	61.0		21.0				
Max Q Clear Time (g_c+l1), s	2.1	4.5		2.3	2.0	9.6		4.9				
Green Ext Time (p_c), s	0.0	3.1		0.0	0.0	11.2		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			5.8									
HCM 6th LOS			Α									

	•	→	•	•	←	•	4	†	~	/	ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1/1	^	7	1,4	ħβ		ሻሻ	^	7	ሻ	^	7
Traffic Volume (veh/h)	157	339	219	346	694	31	210	282	190	58	617	507
Future Volume (veh/h)	157	339	219	346	694	31	210	282	190	58	617	507
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	171	368	238	376	754	34	228	307	207	63	671	551
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	237	1064	464	441	1240	56	293	1170	716	81	1031	452
Arrive On Green	0.07	0.30	0.30	0.13	0.36	0.36	0.08	0.33	0.33	0.05	0.29	0.29
Sat Flow, veh/h	3456	3554	1549	3456	3460	156	3456	3554	1559	1781	3554	1558
Grp Volume(v), veh/h	171	368	238	376	387	401	228	307	207	63	671	551
Grp Sat Flow(s),veh/h/ln	1728	1777	1549	1728	1777	1839	1728	1777	1559	1781	1777	1558
Q Serve(g_s), s	4.8	8.1	12.7	10.6	17.9	17.9	6.5	6.3	8.3	3.5	16.5	29.0
Cycle Q Clear(g_c), s	4.8	8.1	12.7	10.6	17.9	17.9	6.5	6.3	8.3	3.5	16.5	29.0
Prop In Lane	1.00	• • • • • • • • • • • • • • • • • • • •	1.00	1.00		0.08	1.00	0.0	1.00	1.00		1.00
Lane Grp Cap(c), veh/h	237	1064	464	441	637	659	293	1170	716	81	1031	452
V/C Ratio(X)	0.72	0.35	0.51	0.85	0.61	0.61	0.78	0.26	0.29	0.78	0.65	1.22
Avail Cap(c_a), veh/h	335	1064	464	484	637	659	318	1170	716	162	1031	452
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	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	27.4	29.0	42.7	26.3	26.3	44.8	24.6	17.0	47.2	31.1	35.5
Incr Delay (d2), s/veh	1.9	0.9	4.0	11.0	4.0	3.9	9.4	0.2	0.3	5.8	1.7	117.5
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	2.1	3.4	5.1	5.1	7.9	8.1	3.1	2.6	2.9	1.7	7.1	25.3
Unsig. Movement Delay, s/veh		0.1	0.1	0.1	7.0	0.1	0.1	2.0	2.0	•••		20.0
LnGrp Delay(d),s/veh	47.5	28.3	33.0	53.7	30.3	30.2	54.2	24.8	17.3	53.1	32.8	153.0
LnGrp LOS	D	C	C	D	C	C	D2	C	В	D	C	F
Approach Vol, veh/h		777			1164			742			1285	•
Approach Delay, s/veh		34.0			37.8			31.8			85.4	
Approach LOS		C C			57.0 D			C C			00.4 F	
											'	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	36.2	12.7	34.1	11.1	42.2	8.8	38.0				
Change Period (Y+Rc), s	* 4.2	6.3	* 4.2	* 5.1	* 4.2	* 6.3	* 4.2	5.1				
Max Green Setting (Gmax), s	* 14	28.1	* 9.2	* 29	* 9.7	* 33	* 9.1	29.0				
Max Q Clear Time (g_c+l1), s	12.6	14.7	8.5	31.0	6.8	19.9	5.5	10.3				
Green Ext Time (p_c), s	0.1	3.7	0.0	0.0	0.1	4.8	0.0	3.6				
Intersection Summary												
HCM 6th Ctrl Delay			51.3									
HCM 6th LOS			D									
Notos												

^{*} HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Arterial Level of Service: NB Cuyamaca Street

	Arterial	Flow	Running	Signal	Travel	Dist	Arterial	Arterial
Cross Street	Class	Speed	Time	Delay	Time (s)	(mi)	Speed	LOS
El Nopal	III	35	13.2	19.0	32.2	0.10	11.0	Е
Woodglen Vista Drive	III	35	31.1	14.7	45.8	0.26	20.4	С
Princess Joann Road	III	35	54.7	11.3	66.0	0.53	29.0	В
Street Y	Ш	35	70.6	8.6	79.2	0.69	31.2	Α
Total	III		169.6	53.6	223.2	1.58	25.4	В

Arterial Level of Service: SB Cuyamaca Street

	Arterial	Flow	Running	Signal	Travel	Dist	Arterial	Arterial
Cross Street	Class	Speed	Time	Delay	Time (s)	(mi)	Speed	LOS
Street A	III	35	19.6	11.6	31.2	0.15	17.7	D
Princess Joann Road	III	35	70.6	4.1	74.7	0.69	33.1	Α
Woodglen Vista Drive	III	35	54.7	15.6	70.3	0.53	27.2	В
El Nopal	III	35	31.1	13.9	45.0	0.26	20.8	С
Total	III		176.0	45.2	221.2	1.63	26.5	В

	۶	→	•	•	←	4	1	†	~	/	†	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	ተ ኈ		7	∱ ⊅	
Traffic Volume (veh/h)	0	1	7	111	2	95	7	669	238	45	333	2
Future Volume (veh/h)	0	1	7	111	2	95	7	669	238	45	333	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1	8	121	2	103	8	727	259	49	362	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	37	298	282	26	145	15	1159	413	74	1768	10
Arrive On Green	0.00	0.21	0.21	0.21	0.21	0.21	0.01	0.45	0.45	0.04	0.49	0.49
Sat Flow, veh/h	0	176	1411	698	123	688	1781	2548	908	1781	3623	20
Grp Volume(v), veh/h	0	0	9	226	0	0	8	507	479	49	177	187
Grp Sat Flow(s),veh/h/ln	0	0	1587	1509	0	0	1781	1777	1679	1781	1777	1866
Q Serve(g_s), s	0.0	0.0	0.2	4.6	0.0	0.0	0.2	8.9	8.9	1.1	2.3	2.3
Cycle Q Clear(g_c), s	0.0	0.0	0.2	5.6	0.0	0.0	0.2	8.9	8.9	1.1	2.3	2.3
Prop In Lane	0.00	٥	0.89	0.54 453	٥	0.46	1.00	000	0.54	1.00 74	867	0.01 911
Lane Grp Cap(c), veh/h	0.00	0.00	335 0.03	0.50	0.00	0.00	15 0.53	808 0.63	764 0.63	0.66	0.20	0.20
V/C Ratio(X) Avail Cap(c_a), veh/h	0.00	0.00	1160	1222	0.00	0.00	174	2121	2004	390	2337	2455
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)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.00	0.00	12.8	14.9	0.00	0.00	20.3	8.5	8.5	19.4	6.0	6.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.8	0.0	0.0	25.7	0.8	0.9	9.5	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	0.0	0.0	0.1	1.8	0.0	0.0	0.2	2.4	2.3	0.6	0.6	0.6
Unsig. Movement Delay, s/veh		0.0	V. 1	1.0	0.0	0.0	V. _		2.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0	12.9	15.8	0.0	0.0	46.0	9.3	9.4	28.9	6.1	6.1
LnGrp LOS	A	A	В	В	A	A	D	A	A	C	A	A
Approach Vol, veh/h		9			226			994			413	
Approach Delay, s/veh		12.9			15.8			9.7			8.8	
Approach LOS		В			В			Α			Α	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	22.7		12.7	4.3	24.0		12.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	9.0	49.0		30.0	4.0	54.0		30.0				
Max Q Clear Time (g_c+l1), s	3.1	10.9		2.2	2.2	4.3		7.6				
Green Ext Time (p_c), s	0.0	7.7		0.0	0.0	2.2		1.4				
Intersection Summary												
			10.3									
HCM 6th Ctrl Delay HCM 6th LOS			10.3 B									
I IOW OUI LOS			D									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	ተ ኈ		ሻ	∱ ∱	
Traffic Volume (veh/h)	1	1	5	102	8	87	13	834	109	45	415	0
Future Volume (veh/h)	1	1	5	102	8	87	13	834	109	45	415	0
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		0.98	1.00		0.97	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	1	5	111	9	95	14	907	118	49	451	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	115	79	233	269	35	135	26	1457	190	74	1741	0
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.01	0.46	0.46	0.04	0.49	0.00
Sat Flow, veh/h	70	394	1160	669	176	669	1781	3150	410	1781	3647	0
Grp Volume(v), veh/h	7	0	0	215	0	0	14	512	513	49	451	0
Grp Sat Flow(s),veh/h/ln	1624	0	0	1513	0	0	1781	1777	1783	1781	1777	0
Q Serve(g_s), s	0.0	0.0	0.0	4.3	0.0	0.0	0.3	8.9	8.9	1.1	3.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	5.3	0.0	0.0	0.3	8.9	8.9	1.1	3.0	0.0
Prop In Lane	0.14		0.71	0.52		0.44	1.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	428	0	0	438	0	0	26	822	825	74	1741	0
V/C Ratio(X)	0.02	0.00	0.00	0.49	0.00	0.00	0.55	0.62	0.62	0.66	0.26	0.00
Avail Cap(c_a), veh/h	1225	0	0	1195	0	0	175	2179	2187	393	4795	0
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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.1	0.0	0.0	15.1	0.0	0.0	20.0	8.3	8.3	19.2	6.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.9	0.0	0.0	16.9	8.0	0.8	9.5	0.1	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	0.0	0.0	0.0	1.7	0.0	0.0	0.2	2.3	2.3	0.6	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.1	0.0	0.0	15.9	0.0	0.0	36.8	9.0	9.0	28.7	6.1	0.0
LnGrp LOS	В	Α	Α	В	Α	Α	D	Α	Α	С	Α	A
Approach Vol, veh/h		7			215			1039			500	
Approach Delay, s/veh		13.1			15.9			9.4			8.4	
Approach LOS		В			В			Α			Α	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	22.9		12.2	4.6	24.0		12.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	9.0	50.0		29.0	4.0	55.0		29.0				
Max Q Clear Time (g_c+l1), s	3.1	10.9		2.1	2.3	5.0		7.3				
Green Ext Time (p_c), s	0.0	8.0		0.0	0.0	3.2		1.3				
Intersection Summary												
HCM 6th Ctrl Delay			9.9									
HCM 6th LOS			А									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	ተኈ		*	∱ ∱	
Traffic Volume (veh/h)	0	0	6	57	2	2	9	968	65	2	501	3
Future Volume (veh/h)	0	0	6	57	2	2	9	968	65	2	501	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	4.00	0.98	0.99		0.98	1.00	4.00	0.97	1.00	4.00	0.97
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
Work Zone On Approach	4070	No	4070	4070	No	4070	4070	No	4070	4070	No	4070
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h Peak Hour Factor	0.92	0 0.92	7 0.92	62 0.92	2 0.92	2 0.92	10 0.92	1052 0.92	71 0.92	2 0.92	545 0.92	0.92
Percent Heavy Veh, %	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Cap, veh/h	0	0	105	301	3	3	19	1878	127	6	1988	11
Arrive On Green	0.00	0.00	0.07	0.07	0.07	0.07	0.01	0.56	0.56	0.00	0.55	0.55
Sat Flow, veh/h	0.00	0.00	1550	1243	40	40	1781	3372	227	1781	3623	20
Grp Volume(v), veh/h	0	0	7	66	0	0	10	554	569	2	267	281
Grp Sat Flow(s), veh/h/ln	0	0	1550	1323	0	0	1781	1777	1822	1781	1777	1866
Q Serve(g_s), s	0.0	0.0	0.1	1.5	0.0	0.0	0.2	6.5	6.5	0.0	2.6	2.6
Cycle Q Clear(g_c), s	0.0	0.0	0.1	1.6	0.0	0.0	0.2	6.5	6.5	0.0	2.6	2.6
Prop In Lane	0.00	0.0	1.00	0.94	0.0	0.03	1.00	0.0	0.12	1.00	2.0	0.01
Lane Grp Cap(c), veh/h	0.00	0	105	306	0	0.00	1.00	990	1015	6	975	1024
V/C Ratio(X)	0.00	0.00	0.07	0.22	0.00	0.00	0.53	0.56	0.56	0.36	0.27	0.27
Avail Cap(c_a), veh/h	0.00	0.00	964	1089	0.00	0.00	332	3426	3513	332	3426	3598
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)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	14.0	14.8	0.0	0.0	15.8	4.6	4.6	16.0	3.9	3.9
Incr Delay (d2), s/veh	0.0	0.0	0.3	0.3	0.0	0.0	20.9	0.5	0.5	35.3	0.2	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	0.0	0.0	0.0	0.4	0.0	0.0	0.2	0.8	0.8	0.1	0.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	14.3	15.1	0.0	0.0	36.8	5.1	5.1	51.3	4.0	4.0
LnGrp LOS	Α	Α	В	В	Α	Α	D	Α	Α	D	Α	<u>A</u>
Approach Vol, veh/h		7			66			1133			550	
Approach Delay, s/veh		14.3			15.1			5.4			4.2	
Approach LOS		В			В			Α			Α	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.1	21.9		6.2	4.3	21.6		6.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	62.0		20.0	6.0	62.0		20.0				
Max Q Clear Time (g_c+l1), s	2.0	8.5		2.1	2.2	4.6		3.6				
Green Ext Time (p_c), s	0.0	9.5		0.0	0.0	3.5		0.2				
Intersection Summary												_
HCM 6th Ctrl Delay			5.4									
HCM 6th LOS			Α									

Arterial Level of Service: NB Cuyamaca Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Woodglen Vista Drive	III	35	31.1	17.4	48.5	0.26	19.3	С
Princess Joann Road	III	35	54.7	12.3	67.0	0.53	28.6	В
Street Y	III	35	70.6	14.7	85.3	0.69	29.0	В
Total	III		156.4	44.4	200.8	1.48	26.5	B

Arterial Level of Service: SB Cuyamaca Street

	Arterial	Flow	Running	Signal	Travel	Dist	Arterial	Arterial
Cross Street	Class	Speed	Time	Delay	Time (s)	(mi)	Speed	LOS
Street A	III	35	19.6	9.4	29.0	0.15	19.0	С
Princess Joann Road	III	35	70.6	3.1	73.7	0.69	33.5	Α
Woodglen Vista Drive	III	35	54.7	7.7	62.4	0.53	30.7	Α
Total	III		144.9	20.2	165.1	1.37	29.9	В

ATTACHMENT D MITIGATION PHASING PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS (NO MAGNOLIA AVENUE EXTENSION)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		7	†	7	7	f.	
Traffic Vol, veh/h	0	0	11	93	1	1	1	164	32	3	571	0
Future Vol, veh/h	0	0	11	93	1	1	1	164	32	3	571	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	12	101	1	1	1	178	35	3	621	0
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	0
Approach		EB		WB			NB			SB		
Opposing Approach		WB		EB			SB			NB		
Opposing Lanes		1		1			2			3		
Conflicting Approach Left		SB		NB			EB			WB		
Conflicting Lanes Left		2		3			1			1		
Conflicting Approach Right		NB		SB			WB			EB		
Conflicting Lanes Right		3		2			1			1		
HCM Control Delay		9.2		11.8			10.1			47		
HCM LOS		Α		В			В			Е		

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	
Vol Left, %	100%	0%	0%	0%	98%	100%	0%	
Vol Thru, %	0%	100%	0%	0%	1%	0%	100%	
Vol Right, %	0%	0%	100%	100%	1%	0%	0%	
Sign Control	Stop							
Traffic Vol by Lane	1	164	32	11	95	3	571	
LT Vol	1	0	0	0	93	3	0	
Through Vol	0	164	0	0	1	0	571	
RT Vol	0	0	32	11	1	0	0	
Lane Flow Rate	1	178	35	12	103	3	621	
Geometry Grp	7	7	7	7	7	8	8	
Degree of Util (X)	0.002	0.279	0.047	0.021	0.207	0.005	0.952	
Departure Headway (Hd)	6.131	5.625	4.916	6.302	7.21	6.027	5.523	
Convergence, Y/N	Yes							
Сар	585	640	729	567	498	597	664	
Service Time	3.858	3.352	2.643	4.053	4.953	3.727	3.223	
HCM Lane V/C Ratio	0.002	0.278	0.048	0.021	0.207	0.005	0.935	
HCM Control Delay	8.9	10.5	7.9	9.2	11.8	8.8	47.2	
HCM Lane LOS	Α	В	Α	Α	В	Α	Е	
HCM 95th-tile Q	0	1.1	0.1	0.1	8.0	0	13.4	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	^	7	ሻሻ	∱ ∱		ሻሻ	^	7	7	∱ β	
Traffic Volume (veh/h)	136	339	219	346	694	23	210	223	190	42	503	466
Future Volume (veh/h)	136	339	219	346	694	23	210	223	190	42	503	466
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	148	368	238	376	754	25	228	242	207	46	547	507
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	179	1084	473	411	1135	38	270	1226	727	59	533	467
Arrive On Green	0.10	0.31	0.31	0.12	0.32	0.32	0.08	0.35	0.35	0.03	0.30	0.30
Sat Flow, veh/h	1781	3554	1549	3456	3508	116	3456	3554	1559	1781	1777	1558
Grp Volume(v), veh/h	148	368	238	376	382	397	228	242	207	46	547	507
Grp Sat Flow(s), veh/h/ln	1781	1777	1549	1728	1777	1847	1728	1777	1559	1781	1777	1558
Q Serve(g_s), s	8.2	8.0	12.6	10.8	18.5	18.5	6.5	4.8	8.2	2.6	30.0	30.0
Cycle Q Clear(g_c), s	8.2	8.0	12.6	10.8	18.5	18.5	6.5	4.8	8.2	2.6	30.0	30.0
Prop In Lane	1.00	0.0	1.00	1.00	10.0	0.06	1.00	1.0	1.00	1.00	00.0	1.00
Lane Grp Cap(c), veh/h	179	1084	473	411	575	598	270	1226	727	59	533	467
V/C Ratio(X)	0.83	0.34	0.50	0.91	0.66	0.66	0.85	0.20	0.28	0.78	1.03	1.08
Avail Cap(c_a), veh/h	233	1087	474	411	575	598	270	1226	727	71	533	467
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	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	26.9	28.5	43.5	29.1	29.1	45.5	23.0	16.6	48.0	35.0	35.0
Incr Delay (d2), s/veh	13.5	0.9	3.8	22.9	5.5	5.4	20.3	0.1	0.3	29.8	45.8	66.5
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	4.2	3.4	5.0	5.8	8.4	8.7	3.5	2.0	2.9	1.6	19.2	19.5
Unsig. Movement Delay, s/veh		J. T	5.0	5.0	0.4	0.1	0.0	2.0	2.3	1.0	13.2	13.5
LnGrp Delay(d),s/veh	57.6	27.8	32.3	66.5	34.7	34.5	65.8	23.1	16.9	77.8	80.8	101.5
LnGrp LOS	57.0 E	C C	02.5 C	60.5 E	C	C	65.6 E	23.1 C	В	77.0 E	60.0 F	F
		754		<u> </u>	1155		<u> </u>	677	D	<u> </u>	1100	<u> </u>
Approach Vol, veh/h		35.1			45.0			35.6			90.2	
Approach Delay, s/veh											90.2 F	
Approach LOS		D			D			D			Г	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.1	36.8	12.0	35.1	14.2	38.7	7.5	39.6				
Change Period (Y+Rc), s	* 4.2	6.3	* 4.2	* 5.1	* 4.2	* 6.3	* 4.2	5.1				
Max Green Setting (Gmax), s	* 12	30.6	* 7.8	* 30	* 13	* 30	* 4	33.7				
Max Q Clear Time (g_c+l1), s	12.8	14.6	8.5	32.0	10.2	20.5	4.6	10.2				
Green Ext Time (p_c), s	0.0	4.1	0.0	0.0	0.0	3.9	0.0	3.2				
Intersection Summary												
			54.7									
HCM 6th L OS			54.7									
HCM 6th LOS			D									
Notes												

^{*} HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection		
Intersection Delay, s/veh	33.6	
Intersection LOS	D	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	ĵ₃		ሻ	ĵ₃	
Traffic Vol, veh/h	0	1	7	111	2	56	7	377	238	26	186	2
Future Vol, veh/h	0	1	7	111	2	56	7	377	238	26	186	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	8	121	2	61	8	410	259	28	202	2
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Approach		EB		WB			NB			SB		
Opposing Approach		WB		EB			SB			NB		
Opposing Lanes		1		1			2			2		
Conflicting Approach Left		SB		NB			EB			WB		
Conflicting Lanes Left		2		2			1			1		
Conflicting Approach Right		NB		SB			WB			EB		
Conflicting Lanes Right		2		2			1			1		
HCM Control Delay		9.4		12.1			47.4			11.3		
HCM LOS		Α		В			Е			В		

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2	
Vol Left, %	100%	0%	0%	66%	100%	0%	
Vol Thru, %	0%	61%	12%	1%	0%	99%	
Vol Right, %	0%	39%	88%	33%	0%	1%	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	7	615	8	169	26	188	
LT Vol	7	0	0	111	26	0	
Through Vol	0	377	1	2	0	186	
RT Vol	0	238	7	56	0	2	
Lane Flow Rate	8	668	9	184	28	204	
Geometry Grp	7	7	2	2	7	7	
Degree of Util (X)	0.013	0.963	0.015	0.315	0.05	0.335	
Departure Headway (Hd)	5.963	5.185	6.22	6.173	6.41	5.895	
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	
Сар	601	702	573	582	558	609	
Service Time	3.691	2.912	4.288	4.221	4.151	3.635	
HCM Lane V/C Ratio	0.013	0.952	0.016	0.316	0.05	0.335	
HCM Control Delay	8.8	47.8	9.4	12.1	9.5	11.6	
HCM Lane LOS	Α	Е	Α	В	Α	В	
HCM 95th-tile Q	0	14.3	0	1.3	0.2	1.5	

Intersection												
Intersection Delay, s/veh	34.8											
Intersection LOS	D											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	ĵ.		ሻ	ĵ.	
Traffic Vol, veh/h	1	1	5	102	8	36	13	498	109	19	246	0
Future Vol, veh/h	1	1	5	102	8	36	13	498	109	19	246	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	5	111	9	39	14	541	118	21	267	0
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			2			2		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	2			2			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	2			2			1			1		
HCM Control Delay	9.6			11.9			50			12.7		
HCM LOS	Α			В			Е			В		
Lane		NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2					
Vol Left, %		100%	0%	14%	70%	100%	0%					
Vol Thru, %		0%	82%	14%	5%	0%	100%					
Vol Right, %		0%	18%	71%	25%	0%	0%					
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane		13	607	7	146	19	246					
LT Vol		13	0	1	102	19	0					
Through Vol		0	498	1	8	0	246					
RT Vol		0	109	5	36	0	0					
Lane Flow Rate		14	660	8	159	21	267					
Geometry Grp		7	7	2	2	7	7					
Degree of Util (X)		0.023	0.974	0.014	0.281	0.036	0.433					
Departure Headway (Hd)		5.949	5.317	6.457	6.367	6.337	5.83					
Convergence, Y/N		Yes	Yes	Yes	Yes	Yes	Yes					
Cap		603	686	552	563	565	618					
Service Time		3.675	3.043	4.521	4.412	4.073	3.566					
HCM Lane V/C Ratio		0.023	0.962	0.014	0.282	0.037	0.432					
HCM Control Delay		8.8	50.9	9.6	11.9	9.3	13					
HOME		Λ.		٨	n	Α	Р					

Α

0

В

1.1

Α

0.1

В

2.2

0.1

14.6

HCM Lane LOS

HCM 95th-tile Q

ATTACHMENT E EXISTING + PROJECT (NO MAGNOLIA AVENUE EXTENSION – PROHIBITED SOUTHBOUND LEFTTURNS FROM CUYAMACA STREET) PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS

1: Cuyamaca Street & Princess Joann Road

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NDT	NBR	SBL	SBT
		WDK	NBT			
Lane Configurations	7	0.4	200		ች	†
Traffic Vol, veh/h	0	84	362	0	0	863
Future Vol, veh/h	0	84	362	0	0	863
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	-	-	150	50	-
Veh in Median Storage	e, # 0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	0	91	393	0	0	938
IVIVIIIL I IOW	U	31	555	U	U	330
Major/Minor	Minor1	N	Major1		Major2	
Conflicting Flow All	1331	393	0	0	393	0
Stage 1	393	-	-	-	-	-
Stage 2	938	<u>-</u>			_	
			-	-		-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518		-	-	2.218	-
Pot Cap-1 Maneuver	170	656	-	-	1166	-
Stage 1	682		-			-
Stage 2	381	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	170	656	-	-	1166	-
Mov Cap-2 Maneuver	170	-	_	_	-	_
Stage 1	682	_	_	_	_	_
Stage 2	381	_		_		_
Slaye Z	301	_	-	_	_	
Approach	WB		NB		SB	
HCM Control Delay, s			0		0	
HCM LOS	В		U		U	
I IOIVI LOS	Ď					
Minor Lane/Major Mvn	nt	NBT	NBRV	VBLn1	SBL	SBT
	111					
	iii.		_	656	1166	_
Capacity (veh/h)	iii.	-		000	1166	
Capacity (veh/h) HCM Lane V/C Ratio		-		0.139	-	-
Capacity (veh/h) HCM Lane V/C Ratio HCM Control Delay (s		- -		0.139 11.4	0	-
Capacity (veh/h) HCM Lane V/C Ratio)	-		0.139	-	-

Intersection		
Intersection Delay, s/veh	8.5	
Intersection LOS	Α	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		7	†	7	7	†	7
Traffic Vol, veh/h	0	0	54	31	4	0	116	4	8	0	2	0
Future Vol, veh/h	0	0	54	31	4	0	116	4	8	0	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	59	34	4	0	126	4	9	0	2	0
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	1
Approach		EB		WB			NB			SB		
Opposing Approach		WB		EB			SB			NB		
Opposing Lanes		1		1			3			3		
Conflicting Approach Left		SB		NB			EB			WB		
Conflicting Lanes Left		3		3			1			1		
Conflicting Approach Right		NB		SB			WB			EB		
Conflicting Lanes Right		3		3			1			1		
HCM Control Delay		7.3		8.4			9			7.6		
HCM LOS		Α		Α			Α			Α		

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3	
Vol Left, %	100%	0%	0%	0%	89%	0%	0%	0%	
Vol Thru, %	0%	100%	0%	0%	11%	100%	100%	100%	
Vol Right, %	0%	0%	100%	100%	0%	0%	0%	0%	
Sign Control	Stop								
Traffic Vol by Lane	116	4	8	54	35	0	2	0	
LT Vol	116	0	0	0	31	0	0	0	
Through Vol	0	4	0	0	4	0	2	0	
RT Vol	0	0	8	54	0	0	0	0	
Lane Flow Rate	126	4	9	59	38	0	2	0	
Geometry Grp	7	7	7	7	7	7	7	7	
Degree of Util (X)	0.182	0.006	0.01	0.069	0.057	0	0.003	0	
Departure Headway (Hd)	5.204	4.703	4.002	4.246	5.399	4.895	4.895	4.895	
Convergence, Y/N	Yes								
Cap	683	753	883	849	667	0	734	0	
Service Time	2.983	2.481	1.78	1.947	3.1	2.604	2.604	2.604	
HCM Lane V/C Ratio	0.184	0.005	0.01	0.069	0.057	0	0.003	0	
HCM Control Delay	9.2	7.5	6.8	7.3	8.4	7.6	7.6	7.6	
HCM Lane LOS	Α	Α	Α	Α	Α	N	Α	N	
HCM 95th-tile Q	0.7	0	0	0.2	0.2	0	0	0	

Intersection				
Intersection Delay, s/v	e208.7			
Intersection LOS	F			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			4		Ť	f)		Ť	f)		
Traffic Vol, veh/h	0	1	12	227	0	46	3	326	66	0	890	0	
Future Vol, veh/h	0	1	12	227	0	46	3	326	66	0	890	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	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	1	13	247	0	50	3	354	72	0	967	0	
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0	
Approach		EB		WB			NB			SB			
Opposing Approach		WB		EB			SB			NB			
Opposing Lanes		1		1			2			2			
Conflicting Approach Le	eft	SB		NB			EB			WB			
Conflicting Lanes Left		2		2			1			1			
Conflicting Approach R	ight	NB		SB			WB			EB			
Conflicting Lanes Right		2		2			1			1			
HCM Control Delay		12.4		21			29.4			348.8			
HCM LOS		В		С			D			F			

Lane	NBLn1	NBLn2	EBLn1V	VBLn1	SBLn1	SBLn2	
Vol Left, %	100%	0%	0%	83%	0%	0%	
Vol Thru, %	0%	83%	8%	0%	100%	100%	
Vol Right, %	0%	17%	92%	17%	0%	0%	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	3	392	13	273	0	890	
LT Vol	3	0	0	227	0	0	
Through Vol	0	326	1	0	0	890	
RT Vol	0	66	12	46	0	0	
Lane Flow Rate	3	426	14	297	0	967	
Geometry Grp	7	7	2	2	7	7	
Degree of Util (X)	0.006	0.761	0.029	0.565	0		
Departure Headway (Hd)	7.899	7.261	9.119	8.059	6.408	6.408	
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	
Cap	456	503	395	451	0	571	
Service Time	5.599	4.961	7.119	6.059	4.15	4.15	
HCM Lane V/C Ratio	0.007	0.847	0.035	0.659	0		
HCM Control Delay	10.6	29.5	12.4	21		348.8	
HCM Lane LOS	В	D	В	С	N	F	
HCM 95th-tile Q	0	6.6	0.1	3.4	0	56.7	

Movement EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBR SBR		٠	→	•	•	←	•	4	†	/	/	↓	1	
Traffic Volume (veh/h) 17			EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL		SBR	
Future Volume (vehrh) 17	Lane Configurations	Ť	₽			4		7	∱ ∱		ነ	ΦÞ		
Initial Q (Qb), veh	,		1								7			
Ped-Bike Adji(A, pbT) 1.00	, ,		-			13								
Parking Bus, Adj			0			0			0			0		
Work Zöne On Approach	, , , , , , , , , , , , , , , , , , ,													
Adj Sat Flow, veh/h/ln 1870 1870 1870 1870 1870 1870 1870 1870				1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Adj Flow Rate, veh/h 18 1 118 4 8 14 11 84 245 15 8 365 12 Peak Hour Factor 0.92 0.83 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.0 0.28 0.5 0.0 0.0 0.25 0.0 0.0 0.2 0.5 0.0 0.0 0.0 0.0 0.0														
Peak Hour Factor 0.92 0.														
Percent Heavy Veh,														
Cap, veh/h 614 4 433 346 98 55 181 951 58 198 1009 33 Arrive On Green 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.29 229 Stat Flow, veh/h 183 12 1412 691 319 179 1781 3397 207 1781 3483 114 Grp Sat Flow(s), veh/h/hn1381 10 1424 1189 0 0 0 84 127 133 8 185 192 Grp Sat Flow(s), veh/hr/hn1381 0 1424 1189 0 0 7781 1777 1826 1781 1777 1820 Q Seve(g_s), s 0.0 0 2.8 3.3 0.0 0.0 2.0 2.5 2.5 0.2 3.7 3.7 Prop In Lane 1.00 0.0 2.99 0.66 0.15 1.00 0.01 1.1 1.00 0.00 0.0														
Arrive On Green 0.31 0.02 0.04 0.04 0.02 0.02 0.02 0.02 0.02 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	-													
Sat Flow, veh/h														
Grp Volume(v), veh/h 18 0 119 73 0 0 84 127 133 8 185 192 Grp Sat Flow(s), veh/h/ln1381 0 1424 1189 0 10777 1826 1781 1777 1820 Q Serve(g_s), s 0.0 0.0 2.8 0.5 0.0 0.0 2.0 2.5 2.5 0.2 3.7 3.7 Cycle Q Clear(g_c), s 0.3 0.0 2.8 3.3 0.0 0.0 2.0 2.5 2.5 0.2 3.7 3.7 Prop In Lane 1.00 0.99 0.66 0.15 1.00 0.11 1.00 0.06 Lane Grp Cap(c), veh/h 614 0 437 498 0 0 181 498 512 198 515 527 V/C Ratio(X) 0.03 0.00 0.27 0.15 0.00 0.00 0.46 0.26 0.26 0.04 0.36 0.36 Avail Cap(c_a), veh/h 1226 0 1067 1085 0 0 618 1650 1696 488 1491 1527 HCM Platoon Ratio 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0														
Grp Sat Flow(s),veh/h/ln1381														
Q Serve(g_s), s														
Cycle Q Clear(g_c), s 0.3 0.0 2.8 3.3 0.0 0.0 2.0 2.5 2.5 0.2 3.7 3.7 Prop In Lane 1.00 0.99 0.66 0.15 1.00 0.11 1.00 0.06 Lane Grp Cap(c), veh/h 614 0 437 498 0 0 181 498 512 198 515 527 V/C Ratio(X) 0.03 0.00 0.27 0.15 0.00 0.00 0.46 0.26 0.26 0.04 0.36 0.36 Avail Cap(c_a), veh/h 1226 0 1067 1085 0 0 618 1650 1696 458 1491 1527 HCM Platoon Ratio 1.00	Grp Sat Flow(s), veh/h/ln	1381												
Prop In Lane 1.00 0.99 0.66 0.15 1.00 0.11 1.00 0.06 Lane Grp Cap(c), veh/h 614 0 437 498 0 0 0 181 498 512 198 515 527 V/C Ratio(X) 0.03 0.00 0.27 0.15 0.00 0.00 0.46 0.26 0.26 0.04 0.36 0.36 Avail Cap(c_a), veh/h 1226 0 1067 1085 0 0 618 1650 1696 458 1491 1527 HCM Platoon Ratio 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Q Serve(g_s), s													
Lane Grp Cap(c), veh/h 614	Cycle Q Clear(g_c), s		0.0			0.0			2.5			3.7		
V/C Ratio(X) 0.03 0.00 0.27 0.15 0.00 0.04 0.26 0.26 0.04 0.36 0.36 Avail Cap(c_a), veh/h 1226 0 1067 1085 0 0 618 1650 1696 458 1491 1527 HCM Platoon Ratio 1.00														
Avail Cap(c_a), veh/h 1226														
HCM Platoon Ratio			0.00											
Upstream Filter(I) 1.00 0.00 1.00 1.00 0.00 0.00 1.00 1.0	Avail Cap(c_a), veh/h													
Uniform Delay (d), s/veh 10.8														
Incr Delay (d2), s/veh	Upstream Filter(I)	1.00				0.00	0.00							
Initial Q Delay(d3),s/veh	• , , ,													
%ile BackOfQ(50%),veh/ln0.1 0.0 0.8 0.5 0.0 0.0 0.8 0.8 0.1 1.2 1.2 Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh 10.9 0.0 12.1 11.6 0.0 0.0 20.8 12.7 12.8 17.8 13.0 13.0 LnGrp LOS B A B B A C B B B B B Approach Vol, veh/h 137 73 344 385 Approach Delay, s/veh 11.9 11.6 14.7 13.1 Approach LOS B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B </td <td></td> <td></td> <td></td> <td></td> <td>0.1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>					0.1									
Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh 10.9 0.0 12.1 11.6 0.0 0.0 20.8 12.7 12.8 17.8 13.0 13.0 LnGrp LOS B A B B B A A C B B B B B Approach Vol, veh/h 137 73 344 385 Approach Delay, s/veh 11.9 11.6 14.7 13.1 Approach LOS B B B B B Timer - Assigned Phs 1 2 4 5 6 8 Phs Duration (G+Y+Rc), s9.5 17.0 18.2 9.0 17.4 18.2 Change Period (Y+Rc), s 4.5 4.5 4.5 4.5 4.5 4.5 Max Green Setting (Gmax), s 41.5 33.5 15.5 37.5 33.5 Max Q Clear Time (g_c+12, 2 4.5 4.8 4.0 5.7 5.3 Green Ext Time (p_c), s 0.0 1.4 0.9 0.1 2.1 0.4 Intersection Summary HCM 6th Ctrl Delay 13.4														
LnGrp Delay(d),s/veh 10.9 0.0 12.1 11.6 0.0 0.0 20.8 12.7 12.8 17.8 13.0 13.0 LnGrp LOS B A B B A C B <t< td=""><td></td><td></td><td></td><td>0.8</td><td>0.5</td><td>0.0</td><td>0.0</td><td>0.8</td><td>8.0</td><td>8.0</td><td>0.1</td><td>1.2</td><td>1.2</td><td></td></t<>				0.8	0.5	0.0	0.0	0.8	8.0	8.0	0.1	1.2	1.2	
LnGrp LOS B A B B A A C B B B B B Approach Vol, veh/h 137 73 344 385 Approach Delay, s/veh 11.9 11.6 14.7 13.1 Approach LOS B B B B B B B B B Fimer - Assigned Phs 1 2 4 5 6 8 Phs Duration (G+Y+Rc), s9.5 17.0 18.2 9.0 17.4 18.2 Change Period (Y+Rc), s 4.5 4.5 4.5 4.5 4.5 Max Green Setting (Gmax), s 41.5 33.5 15.5 37.5 33.5 Max Q Clear Time (g_c+l*12, 2x 4.5 4.8 4.0 5.7 5.3 Green Ext Time (p_c), s 0.0 1.4 0.9 0.1 2.1 0.4 Intersection Summary HCM 6th Ctrl Delay 13.4	Unsig. Movement Delay,													
Approach Vol, veh/h 137 73 344 385 Approach Delay, s/veh 11.9 11.6 14.7 13.1 Approach LOS B B B B B Timer - Assigned Phs 1 2 4 5 6 8 Phs Duration (G+Y+Rc), s9.5 17.0 18.2 9.0 17.4 18.2 Change Period (Y+Rc), s 4.5 4.5 4.5 4.5 4.5 Max Green Setting (Gmat/s), s 41.5 33.5 15.5 37.5 33.5 Max Q Clear Time (g_c+1/2), s 4.5 4.8 4.0 5.7 5.3 Green Ext Time (p_c), s 0.0 1.4 0.9 0.1 2.1 0.4 Intersection Summary HCM 6th Ctrl Delay 13.4		10.9		12.1	11.6		0.0	20.8		12.8			13.0	
Approach Delay, s/veh 11.9 11.6 14.7 13.1 Approach LOS B B B B B Timer - Assigned Phs 1 2 4 5 6 8 Phs Duration (G+Y+Rc), s9.5 17.0 18.2 9.0 17.4 18.2 Change Period (Y+Rc), s 4.5 4.5 4.5 4.5 4.5 Max Green Setting (Gmat/), s 41.5 33.5 15.5 37.5 33.5 Max Q Clear Time (g_c+l/1), s 4.5 4.8 4.0 5.7 5.3 Green Ext Time (p_c), s 0.0 1.4 0.9 0.1 2.1 0.4 Intersection Summary HCM 6th Ctrl Delay 13.4	LnGrp LOS	В		В	В		Α	С	В	В	В	В	В	
Approach LOS B B B B B Timer - Assigned Phs 1 2 4 5 6 8 Phs Duration (G+Y+Rc), s9.5 17.0 18.2 9.0 17.4 18.2 Change Period (Y+Rc), s 4.5 4.5 4.5 4.5 4.5 Max Green Setting (Gmat), s 41.5 33.5 15.5 37.5 33.5 Max Q Clear Time (g_c+l12, s 4.5 4.8 4.0 5.7 5.3 Green Ext Time (p_c), s 0.0 1.4 0.9 0.1 2.1 0.4 Intersection Summary HCM 6th Ctrl Delay 13.4	Approach Vol, veh/h		137			73			344			385		
Timer - Assigned Phs 1 2 4 5 6 8 Phs Duration (G+Y+Rc), s9.5 17.0 18.2 9.0 17.4 18.2 Change Period (Y+Rc), s 4.5 4.5 4.5 4.5 4.5 Max Green Setting (Gmak), \$ 41.5 33.5 15.5 37.5 33.5 Max Q Clear Time (g_c+12), \$ 4.5 4.8 4.0 5.7 5.3 Green Ext Time (p_c), s 0.0 1.4 0.9 0.1 2.1 0.4 Intersection Summary HCM 6th Ctrl Delay 13.4			11.9			11.6			14.7			13.1		
Phs Duration (G+Y+Rc), s9.5 17.0 18.2 9.0 17.4 18.2 Change Period (Y+Rc), s 4.5 4.5 4.5 4.5 4.5 Max Green Setting (Gmax), s 41.5 33.5 15.5 37.5 33.5 Max Q Clear Time (g_c+l12), s 4.5 4.8 4.0 5.7 5.3 Green Ext Time (p_c), s 0.0 1.4 0.9 0.1 2.1 0.4 Intersection Summary HCM 6th Ctrl Delay 13.4	Approach LOS		В			В			В			В		
Phs Duration (G+Y+Rc), s9.5 17.0 18.2 9.0 17.4 18.2 Change Period (Y+Rc), s 4.5 4.5 4.5 4.5 4.5 Max Green Setting (Gmat), s 41.5 33.5 15.5 37.5 33.5 Max Q Clear Time (g_c+l12, s 4.5 4.8 4.0 5.7 5.3 Green Ext Time (p_c), s 0.0 1.4 0.9 0.1 2.1 0.4 Intersection Summary HCM 6th Ctrl Delay 13.4	Timer - Assigned Phs	1	2		4	5	6		8					
Max Green Setting (Gmax), 5 41.5 33.5 15.5 37.5 33.5 Max Q Clear Time (g_c+l12), 2 4.5 4.8 4.0 5.7 5.3 Green Ext Time (p_c), s 0.0 1.4 0.9 0.1 2.1 0.4 Intersection Summary HCM 6th Ctrl Delay 13.4		, s9.5	17.0		18.2	9.0	17.4		18.2					
Max Q Clear Time (g_c+l12), \$ 4.5 4.8 4.0 5.7 5.3 Green Ext Time (p_c), \$ 0.0 1.4 0.9 0.1 2.1 0.4 Intersection Summary HCM 6th Ctrl Delay 13.4	Change Period (Y+Rc),	s 4.5	4.5		4.5	4.5	4.5		4.5					
Green Ext Time (p_c), s 0.0 1.4 0.9 0.1 2.1 0.4 Intersection Summary HCM 6th Ctrl Delay 13.4			41.5		33.5	15.5	37.5		33.5					
Green Ext Time (p_c), s 0.0 1.4 0.9 0.1 2.1 0.4 Intersection Summary HCM 6th Ctrl Delay 13.4	Max Q Clear Time (g_c+	112,2s	4.5		4.8	4.0	5.7		5.3					
HCM 6th Ctrl Delay 13.4			1.4		0.9	0.1	2.1		0.4					
HCM 6th Ctrl Delay 13.4	Intersection Summary													
·	•			13.4										
	HCM 6th LOS													

Intersection												
Intersection Delay, s/ve	B 78.8											
Intersection LOS	F											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	9	SBT
Lane Configurations		4			4		, j	f)		Ť		ĵ,
Traffic Vol, veh/h	0	1	7	258	4	45	5	355	46	0	114	1
Future Vol, veh/h	0	1	7	258	4	45	5	355	46	0	1141	Ī
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	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	1	8	280	4	49	5	386	50	0	1240	
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	
Approach		EB		WB			NB			SB		
Opposing Approach		WB		EB			SB			NB		
Opposing Lanes		1		1			2			2		
Conflicting Approach Lo	eft	SB		NB			EB			WB		
Conflicting Lanes Left		2		2			1			1		
Conflicting Approach R	ight	NB		SB			WB			EB		
Conflicting Lanes Right		2		2			1			1		
HCM Control Delay		13.9		26.3			36.1			597.9		
HCM LOS		В		D			Е			F		
Lane	N	NBLn11	NBLn2	EBLn1V	VBLn1	SBLn1	SBLn2					
Vol Left, %		100%	0%	0%	84%	0%	0%					
Vol Thru, %		0%	89%	12%	1%	100%	100%					
Vol Right, %		0%	11%	88%	15%	0%	0%					
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane		5	401	8	307	0	1142					
LT Vol		5	0	0	258	0	0					
Through Vol		0	355	1	4	0	1141					
RT Vol		0	46	7	45	0	1					
Lane Flow Rate		5	436	9	334	0	1241					
Geometry Grp		7	7	2	2	7	7					
Degree of Util (X)		0.011		0.019		0	2.282					
Departure Headway (H	d)	8.689	8.084	10.695	8.888	6.619	6.618					
Convergence, Y/N		Yes	Yes	Yes	Yes	Yes	Yes					
Сар		414	453	337	410	0	559					
Service Time		6.389	5.784	8.695	6.888	4.363	4.362					
HCM Lane V/C Ratio		0.012	0.962	0.027	0.815	0	2.22					
HCM Control Delay		11.5	36.4	13.9	26.3	9.4	597.9					
LICM Lana LOC		D	г	D	П	N I						

В

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7.3

В

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0 91.6

HCM Lane LOS

HCM 95th-tile Q

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	Ť	f)		ሻ	f)		ሻ	ħβ		ሻ	ħβ		
Traffic Volume (veh/h)	45	63	93	136	161	141	48	346	216	114	458	83	
Future Volume (veh/h)	45	63	93	136	161	141	48	346	216	114	458	83	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98	
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	
Work Zone On Approac		No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	49	68	101	148	175	153	52	376	235	124	498	90	
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	105	126	188	188	214	187	109	803	494	159	1230	221	
Arrive On Green	0.06	0.19	0.19	0.11	0.23	0.23	0.06	0.38	0.38	0.09	0.41	0.41	
Sat Flow, veh/h	1781	673	1000	1781	913	798	1781	2102	1293	1781	2997	539	
Grp Volume(v), veh/h	49	0	169	148	0	328	52	317	294	124	294	294	
Grp Sat Flow(s), veh/h/li		0	1673	1781	0	1711	1781	1777	1618	1781	1777	1759	
Q Serve(g_s), s	2.0	0.0	7.0	6.2	0.0	13.9	2.2	10.3	10.5	5.2	9.0	9.1	
Cycle Q Clear(g_c), s	2.0	0.0	7.0	6.2	0.0	13.9	2.2	10.3	10.5	5.2	9.0	9.1	
Prop In Lane	1.00		0.60	1.00		0.47	1.00		0.80	1.00		0.31	
Lane Grp Cap(c), veh/h		0	314	188	0	401	109	679	618	159	730	722	
V/C Ratio(X)	0.47	0.00	0.54	0.79	0.00	0.82	0.48	0.47	0.48	0.78	0.40	0.41	
Avail Cap(c_a), veh/h	197	0	512	430	0	747	197	679	618	360	730	722	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/vel		0.0	28.1	33.5	0.0	27.8	34.8	17.8	17.9	34.2	16.0	16.0	
Incr Delay (d2), s/veh	3.2	0.0	1.4	7.0	0.0	4.1	3.2	2.3	2.6	7.9	1.7	1.7	
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	
%ile BackOfQ(50%),vel		0.0	2.9	3.0	0.0	6.0	1.0	4.2	4.0	2.5	3.6	3.6	
Unsig. Movement Delay			00.0	40 F	0.0	24.0	20.4	00.4	00.5	10.1	47 C	477	
LnGrp Delay(d),s/veh	38.1	0.0	29.6	40.5	0.0	31.9	38.1	20.1	20.5	42.1	17.6	17.7	
LnGrp LOS	D	A	С	D	A 470	С	D	С	С	D	B 740	В	
Approach Vol, veh/h		218			476			663			712		
Approach Delay, s/veh		31.5			34.6			21.7			21.9		
Approach LOS		С			С			С			С		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc)		33.8	12.6	18.9	9.2	36.0	9.0	22.5					
Change Period (Y+Rc),	s 4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gm		24.5	18.5	23.5	8.5	31.5	8.5	33.5					
Max Q Clear Time (g_c		12.5	8.2	9.0	4.2	11.1	4.0	15.9					
Green Ext Time (p_c), s	0.2	2.8	0.3	0.8	0.0	3.3	0.0	2.0					
Intersection Summary													
HCM 6th Ctrl Delay			25.8										
HCM 6th LOS			С										

Intersection		
Intersection Delay, s/ve2	97.7	
Intersection LOS	F	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			4		7	†	7	Ť	ĵ,		
Traffic Vol, veh/h	0	0	11	90	1	1	1	415	29	3	1055	0	
Future Vol, veh/h	0	0	11	90	1	1	1	415	29	3	1055	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	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	0	12	98	1	1	1	451	32	3	1147	0	
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	0	
Approach		EB		WB			NB			SB			
Opposing Approach		WB		EB			SB			NB			
Opposing Lanes		1		1			2			3			
Conflicting Approach Lo	eft	SB		NB			EB			WB			
Conflicting Lanes Left		2		3			1			1			
Conflicting Approach R	ight	NB		SB			WB			EB			
Conflicting Lanes Right		3		2			1			1			
HCM Control Delay		11.5		14.5			21.8			441.3			
HCM LOS		В		В			С			F			

Lane	NBLn1	NBLn2	NBLn3	EBLn1\	VBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	98%	100%	0%
Vol Thru, %	0%	100%	0%	0%	1%	0%	100%
Vol Right, %	0%	0%	100%	100%	1%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	415	29	11	92	3	1055
LT Vol	1	0	0	0	90	3	0
Through Vol	0	415	0	0	1	0	1055
RT Vol	0	0	29	11	1	0	0
Lane Flow Rate	1	451	32	12	100	3	1147
Geometry Grp	7	7	7	7	7	8	8
Degree of Util (X)	0.002	0.704	0.043	0.023	0.215	0.006	1.936
Departure Headway (Hd)	6.884	6.373	5.659	8.606	9.295	6.582	6.078
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Сар	523	573	637	418	389	540	596
Service Time	4.584	4.073	3.359	6.306	6.995	4.372	3.868
HCM Lane V/C Ratio	0.002	0.787	0.05	0.029	0.257	0.006	1.924
HCM Control Delay	9.6	22.8	8.6	11.5	14.5	9.4	442.5
HCM Lane LOS	Α	С	Α	В	В	Α	F
HCM 95th-tile Q	0	5.6	0.1	0.1	0.8	0	74

	\checkmark	•	•	†	/	-	ţ
Movement	WBL	nent W	WBR	NBT	NBR	SBL	SBT
Lane Configurations	*		7	∱ ⊅		*	^
Traffic Volume (veh/h)	158		33	625	103	109	1577
Future Volume (veh/h)	158		33	625	103	109	1577
Initial Q (Qb), veh	0	, ,	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		0.99	1.00	
Parking Bus, Adj	1.00		1.00	1.00	1.00	1.00	1.00
Work Zone On Approac		, ,		No			No
	1870		1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	172		36	679	112	118	1714
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	247		220	1308	215	150	2237
Arrive On Green	0.14		0.14	0.43	0.43	0.08	0.63
Sat Flow, veh/h	1781		1585	3141	502	1781	3647
Grp Volume(v), veh/h	172	•	36	396	395	118	1714
Grp Sat Flow(s), veh/h/lr		\ //	1585	1777	1772	1781	1777
Q Serve(g_s), s	3.6		0.8	6.3	6.4	2.5	13.4
Cycle Q Clear(g_c), s	3.6		0.8	6.3	6.4	2.5	13.4
Prop In Lane	1.00	(O— /·	1.00	0.0	0.28	1.00	10.1
Lane Grp Cap(c), veh/h			220	763	761	150	2237
V/C Ratio(X)	0.70		0.16	0.52	0.52	0.79	0.77
Avail Cap(c_a), veh/h	826	` '	735	824	822	252	2563
HCM Platoon Ratio	1.00	1 \ — /-	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
Uniform Delay (d), s/veh			14.7	8.1	8.1	17.4	5.2
Incr Delay (d2), s/veh	3.5		0.3	0.5	0.6	8.7	1.3
Initial Q Delay(d3),s/veh		• • •	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh			0.0	1.5	1.5	1.2	1.5
Unsig. Movement Delay		, ,		1.0	1.0	1.4	1.0
LnGrp Delay(d),s/veh	19.4		15.1	8.7	8.7	26.2	6.4
LnGrp LOS	19.4 B	• • •	13.1 B	Α	Α	20.2 C	0.4 A
	208		D	791		U	1832
Approach Vol, veh/h							7.7
Approach LOS	18.7 B			8.7			
Approach LOS	В	IUI LUS		Α			Α
Timer - Assigned Phs	1	- Assigned Phs	2				6
Phs Duration (G+Y+Rc)	, s7.8	uration (G+Y+Rc), s	21.2				28.9
Change Period (Y+Rc),			4.5				4.5
Max Green Setting (Gm		, , ,	18.0				28.0
Max Q Clear Time (g_c-			8.4				15.4
Green Ext Time (p_c), s	, .	10-	3.3				9.0
Intersection Summary		` ,					
				0.0			
HCM 6th Ctrl Delay				8.8			
HCM 6th LOS		วแา LUS		Α			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4		1	स	7	ች	^			ħβ		
Traffic Volume (veh/h)	13	0	57	185	0	30	33	667	0	0	841	2	
Future Volume (veh/h)	13	0	57	185	0	30	33	667	0	0	841	2	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.84	1.00	•	1.00	1.00		1.00	1.00		0.95	
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	
Work Zone On Approac		No	1.00	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	0	0	1870	1870	
Adj Flow Rate, veh/h	14	0	62	201	0	33	36	725	0	0	914	2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	0.32	0.52	2	2	
Cap, veh/h	56	0	248	348	0	155	55	1568	0	0	1197	3	
Arrive On Green	0.22	0.00	0.22	0.10	0.00	0.10	0.03	0.44	0.00	0.00	0.33	0.33	
Sat Flow, veh/h	258	0.00	1141	3563	0.00	1585	1781	3647	0.00	0.00	3731	8	
Grp Volume(v), veh/h	76	0	0	201	0	33	36	725	0	0	446	470	
Grp Sat Flow(s), veh/h/li		0	0	1781	0	1585	1781	1777	0	0	1777	1868	
Q Serve(g_s), s	2.5	0.0	0.0	3.0	0.0	1.1	1.1	7.9	0.0	0.0	12.5	12.5	
Cycle Q Clear(g_c), s	2.5	0.0	0.0	3.0	0.0	1.1	1.1	7.9	0.0	0.0	12.5	12.5	
Prop In Lane	0.18		0.82	1.00		1.00	1.00		0.00	0.00		0.00	
Lane Grp Cap(c), veh/h		0	0	348	0	155	55	1568	0	0	585	615	
V/C Ratio(X)	0.25	0.00	0.00	0.58	0.00	0.21	0.66	0.46	0.00	0.00	0.76	0.76	
Avail Cap(c_a), veh/h	455	0	0	1030	0	458	129	2087	0	0	771	810	
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	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	
Uniform Delay (d), s/ve		0.0	0.0	23.9	0.0	23.0	26.5	10.9	0.0	0.0	16.6	16.6	
Incr Delay (d2), s/veh	0.4	0.0	0.0	1.5	0.0	0.7	12.6	0.2	0.0	0.0	3.3	3.1	
Initial Q Delay(d3),s/vel	n 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%),ve	h/lr0.8	0.0	0.0	1.2	0.0	0.4	0.6	2.4	0.0	0.0	4.7	4.9	
Unsig. Movement Delay	y, s/veh	1											
LnGrp Delay(d),s/veh	18.3	0.0	0.0	25.4	0.0	23.7	39.2	11.1	0.0	0.0	19.9	19.8	
LnGrp LOS	В	Α	Α	С	Α	С	D	В	Α	Α	В	В	
Approach Vol, veh/h		76			234			761			916		
Approach Delay, s/veh		18.3			25.2			12.4			19.8		
Approach LOS		В			C			В			В		
Timer - Assigned Phs		2		4	5	6		8					
Phs Duration (G+Y+Rc)), s	28.9		16.5	6.2	22.7		9.9					
Change Period (Y+Rc),	S	4.5		4.5	4.5	4.5		4.5					
Max Green Setting (Gm		32.5		18.0	4.0	24.0		16.0					
Max Q Clear Time (g_c		9.9		4.5	3.1	14.5		5.0					
Green Ext Time (p_c), s		4.8		0.3	0.0	3.8		0.6					
Intersection Summary													
HCM 6th Ctrl Delay			17.6										
HCM 6th LOS			В										
Notes													

User approved volume balancing among the lanes for turning movement.

	ᄼ	→	•	•	•	•	•	†	~	>	↓	✓	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		^	1	ሻሻ	∱ }		ሻሻ	^	7		ħβ		
Traffic Volume (veh/h)	151	308	200	327	650	30	197	275	179	383	609	498	
Future Volume (veh/h)	151	308	200	327	650	30	197	275	179	383	609	498	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	•	0.98	1.00	•	0.98	1.00	•	0.98	1.00	•	0.98	
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	
Nork Zone On Approac		No	1.00	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	164	335	217	355	707	33	214	299	195	416	662	541	
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	121	1048	457	270	1053	49	256	999	561	264	657	532	
Arrive On Green	0.07	0.30	0.30	0.08	0.31	0.31	0.07	0.28	0.28	0.15	0.35	0.35	
						161							
Sat Flow, veh/h	1781	3554	1549	3456	3454		3456	3554	1557	1781	1850	1499	
Grp Volume(v), veh/h	164	335	217	355	364	376	214	299	195	416	636	567	
Grp Sat Flow(s),veh/h/l		1777	1549	1728	1777	1838	1728	1777	1557	1781	1777	1571	
Q Serve(g_s), s	6.8	7.3	11.5	7.8	17.9	17.9	6.1	6.6	9.2	14.8	35.5	35.5	
Cycle Q Clear(g_c), s	6.8	7.3	11.5	7.8	17.9	17.9	6.1	6.6	9.2	14.8	35.5	35.5	
Prop In Lane	1.00		1.00	1.00		0.09	1.00		1.00	1.00		0.95	
_ane Grp Cap(c), veh/ł		1048	457	270	542	561	256	999	561	264	631	558	
V/C Ratio(X)	1.35	0.32	0.47	1.32	0.67	0.67	0.84	0.30	0.35	1.58	1.01	1.02	
Avail Cap(c_a), veh/h	121	1052	458	270	561	581	256	999	561	264	631	558	
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	
Jpstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00	
Jniform Delay (d), s/ve	h 46.6	27.4	28.9	46.1	30.4	30.4	45.7	28.2	23.5	42.6	32.3	32.3	
ncr Delay (d2), s/veh	203.7	8.0	3.5	165.2	6.1	5.9	19.9	0.2	0.5	277.5	37.8	42.4	
nitial Q Delay(d3),s/ve	h 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%),ve	h/lr9.8	3.1	4.6	9.4	8.2	8.5	3.3	2.8	3.4	26.7	21.1	19.4	
Jnsig. Movement Dela		1											
_nGrp Delay(d),s/veh		28.2	32.4	211.3	36.5	36.3	65.6	28.5	24.0	320.1	70.0	74.7	
_nGrp LOS	F	С	С	F	D	D	E	С	С	F	F	F	
Approach Vol, veh/h	•	716			1095		_	708		•	1619		
Approach Delay, s/veh		80.4			93.1			38.5			135.9		
Approach LOS		F			55.1			D D			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Ro	;), \$2.0	35.8	11.6	40.6	11.0	36.8	19.0	33.2					
Change Period (Y+Rc)		6.3	* 4.2	* 5.1	* 4.2	* 6.3	* 4.2	5.1					
Max Green Setting (Gr		29.6	* 7.4	* 36	* 6.8	* 32	* 15	28.0					
Max Q Clear Time (g_c		13.5	8.1	37.5	8.8	19.9	16.8	11.2					
Green Ext Time (p_c),		3.7	0.0	0.0	0.0	4.1	0.0	3.3					
ntersection Summary													
HCM 6th Ctrl Delay			98.3										
HCM 6th LOS			F										
Notes			•										

^{*} HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	∱ }		*	^		7	
Traffic Volume (veh/h)	850	67	116	886	21	90	
Future Volume (veh/h)	850	67	116	886	21	90	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)		0.96	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approac				No	No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	924	73	126	963	23	98	
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	1385	109	163	2287	154	137	
Arrive On Green	0.42	0.42	0.09	0.64	0.09	0.09	
Sat Flow, veh/h	3417	263	1781	3647	1781	1585	
Grp Volume(v), veh/h	494	503	126	963	23	98	
			1781		1781		
Grp Sat Flow(s), veh/h/l		1809		1777		1585	
Q Serve(g_s), s	7.5	7.5	2.3	4.4	0.4	2.0	
Cycle Q Clear(g_c), s	7.5	7.5	2.3	4.4	0.4	2.0	
Prop In Lane	744	0.15	1.00	0007	1.00	1.00	
Lane Grp Cap(c), veh/h		754	163	2287	154	137	
V/C Ratio(X)	0.67	0.67	0.77	0.42	0.15	0.72	
Avail Cap(c_a), veh/h	998	1016	524	3522	963	857	
HCM Platoon Ratio	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	
Uniform Delay (d), s/ve	h 7.8	7.8	14.8	2.9	14.1	14.8	
Incr Delay (d2), s/veh	1.0	1.0	7.6	0.1	0.4	6.8	
Initial Q Delay(d3),s/vel	n 0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),ve		1.7	1.0	0.0	0.1	0.8	
Unsig. Movement Delay							
LnGrp Delay(d),s/veh	8.9	8.9	22.4	3.0	14.5	21.7	
LnGrp LOS	A	A	С	A	В	С	
Approach Vol, veh/h	997			1089	121		
Approach Delay, s/veh	8.9			5.3	20.3		
Approach LOS	Α			Α	С		
Timer - Assigned Phs	1	2				6	
Phs Duration (G+Y+Rc		18.4				25.9	
Change Period (Y+Rc),	s 4.5	4.5				4.5	
Max Green Setting (Gm	nax9,,&	18.7				33.0	
Max Q Clear Time (g_c	+114,3s	9.5				6.4	
Green Ext Time (p_c),	, .	4.1				7.1	
Intersection Summary							
HCM 6th Ctrl Delay			7.7				
HCM 6th LOS			Α				

	۶	→	•	•	←	•	4	†	<u> </u>	>	ţ	✓	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	1/1	^	7	ሻ	^	7	14	ħβ		ሻ	^	7	
Traffic Volume (veh/h)	358	113	405	131	229	46	308	584	44	53	604	401	
Future Volume (veh/h)	358	113	405	131	229	46	308	584	44	53	604	401	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	1.00		0.98	1.00		0.98	
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	
Work Zone On Approac		No	40=0	40=0	No	10=0	10=0	No	40-0	40=0	No	40=0	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	389	123	440	142	249	50	335	635	48	58	657	436	
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	472	2	2	426	202	2	2	2	2	2	
Cap, veh/h	392 0.11	1092 0.31	473 0.31	167 0.09	1004 0.28	426 0.28	303 0.09	1138 0.34	86 0.34	102 0.06	1101 0.31	481 0.31	
Arrive On Green Sat Flow, veh/h	3456	3554	1539	1781	3554	1509	3456	3342	252	1781	3554	1552	
Grp Volume(v), veh/h	389	123	440	142	249	50	335	337	346	58	657	436	
Grp Sat Flow(s), veh/h/lr		1777	1539	1781	1777	1509	1728	1777	1818	1781	1777	1552	
Q Serve(g_s), s	10.9	2.4	26.9	7.6	5.2	2.4	8.5	15.0	15.0	3.1	15.2	26.1	
Cycle Q Clear(g_c), s	10.9	2.4	26.9	7.6	5.2	2.4	8.5	15.0	15.0	3.1	15.2	26.1	
Prop In Lane	1.00	۷.٦	1.00	1.00	0.2	1.00	1.00	10.0	0.14	1.00	10.2	1.00	
Lane Grp Cap(c), veh/h		1092	473	167	1004	426	303	605	619	102	1101	481	
V/C Ratio(X)	0.99	0.11	0.93	0.85	0.25	0.12	1.11	0.56	0.56	0.57	0.60	0.91	
Avail Cap(c_a), veh/h	392	1170	507	167	1082	459	303	605	619	164	1137	496	
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	า 42.9	24.1	32.6	43.2	26.8	25.8	44.2	26.0	26.0	44.5	28.3	32.1	
Incr Delay (d2), s/veh	43.1	0.1	23.4	30.2	0.2	0.1	82.9	1.1	1.1	1.9	8.0	20.0	
Initial Q Delay(d3),s/veh	า 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%),vel	n/In6.8	1.0	12.5	4.7	2.2	8.0	7.0	6.2	6.4	1.4	6.3	11.9	
Unsig. Movement Delay													
LnGrp Delay(d),s/veh	86.0	24.1	56.0	73.4	27.0	25.9	127.1	27.1	27.2	46.4	29.1	52.0	
LnGrp LOS	F	С	Е	E	С	С	F	С	С	D	С	D	
Approach Vol, veh/h		952			441			1018			1151		
Approach Delay, s/veh		64.2			41.8			60.1			38.7		
Approach LOS		Е			D			Е			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc)	, \$3.6	35.3	13.0	35.0	16.0	32.9	10.0	38.0					
Change Period (Y+Rc),		5.5	4.5	5.0	5.0	5.5	4.5	5.0					
Max Green Setting (Gm		31.9	8.5	31.0	11.0	29.5	8.9	30.6					
Max Q Clear Time (g_c-	, .	28.9	10.5	28.1	12.9	7.2	5.1	17.0					
Green Ext Time (p_c), s	0.0	0.9	0.0	1.6	0.0	2.0	0.0	3.3					
Intersection Summary													
HCM 6th Ctrl Delay			52.0										
HCM 6th LOS			D										

1: Cuyamaca Street & Princess Joann Road

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
		MOL				
Lane Configurations	Y	107	710	*	<u>ነ</u>	115
Traffic Vol, veh/h	0	167	718	0	0	445
Future Vol, veh/h	0	167	718	0	0	445
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	-	-	150	50	-
Veh in Median Storage	e, # 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	182	780	0	0	484
manic low		102	, 00			107
Major/Minor	Minor1	N	//ajor1	<u> </u>	//ajor2	
Conflicting Flow All	1264	780	0	0	780	0
Stage 1	780	-	-	-	-	-
Stage 2	484	_	_	_	_	-
Critical Hdwy	6.42	6.22	_	-	4.12	_
Critical Hdwy Stg 1	5.42	- 0.22	_	_	- 1.12	_
Critical Hdwy Stg 2	5.42	_	_	_	_	-
Follow-up Hdwy	3.518		-		2.218	-
Pot Cap-1 Maneuver	187	395	-	-	837	-
Stage 1	452	-	-	-	-	-
Stage 2	620	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver		395	-	-	837	-
Mov Cap-2 Maneuver	187	-	-	-	-	-
Stage 1	452	-	-	-	-	-
Stage 2	620	-	-	-	-	-
	3_3					
Approach	WB		NB		SB	
HCM Control Delay, s	21.6		0		0	
HCM LOS	С					
3 2 2						
NAC 1 /NA - 1 - NA	. 1	NET	NIDDY	VDL 4	051	ODT
Minor Lane/Major Mvn	nt	NBT	NBKV	VBLn1	SBL	SBT
Capacity (veh/h)		-	-	395	837	-
HCM Lane V/C Ratio		-	-	0.46	-	-
HCM Control Delay (s)	-	-	21.6	0	-
HCM Lane LOS		-	-	С	Α	-
HCM 95th %tile Q(veh	1)	_	_	2.3	0	_
Jili ootii 70tiio Q(Voi	7				- 0	

Intersection		
Intersection Delay, s/veh	10.1	
Intersection LOS	В	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		,	†	7	, J	†	7
Traffic Vol, veh/h	1	3	34	20	0	3	248	3	34	0	6	2
Future Vol, veh/h	1	3	34	20	0	3	248	3	34	0	6	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	3	37	22	0	3	270	3	37	0	7	2
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	1
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			3			3		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	3			3			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	3			3			1			1		
HCM Control Delay	7.7			8.7			10.6			7.5		
HCM LOS	Α			Α			В			Α		

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3	
Vol Left, %	100%	0%	0%	3%	87%	0%	0%	0%	
Vol Thru, %	0%	100%	0%	8%	0%	100%	100%	0%	
Vol Right, %	0%	0%	100%	89%	13%	0%	0%	100%	
Sign Control	Stop								
Traffic Vol by Lane	248	3	34	38	23	0	6	2	
LT Vol	248	0	0	1	20	0	0	0	
Through Vol	0	3	0	3	0	0	6	0	
RT Vol	0	0	34	34	3	0	0	2	
Lane Flow Rate	270	3	37	41	25	0	7	2	
Geometry Grp	7	7	7	7	7	7	7	7	
Degree of Util (X)	0.386	0.004	0.041	0.055	0.04	0	0.009	0.003	
Departure Headway (Hd)	5.156	4.655	3.954	4.751	5.72	4.963	4.963	4.261	
Convergence, Y/N	Yes								
Cap	693	761	894	758	629	0	723	842	
Service Time	2.929	2.428	1.727	2.454	3.425	2.677	2.677	1.975	
HCM Lane V/C Ratio	0.39	0.004	0.041	0.054	0.04	0	0.01	0.002	
HCM Control Delay	11.2	7.4	6.9	7.7	8.7	7.7	7.7	7	
HCM Lane LOS	В	Α	Α	Α	Α	N	Α	Α	
HCM 95th-tile Q	1.8	0	0.1	0.2	0.1	0	0	0	

-												
Intersection												
Intersection Delay, s/ve	e l 180.9											
Intersection LOS	F											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	Þ		ነ	Þ	
Traffic Vol, veh/h	0	1	7	108	2	95	7	668	232	0	459	2
Future Vol, veh/h	0	1	7	108	2	95	7	668	232	0	459	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	8	117	2	103	8	726	252	0	499	2
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Approach		EB		WB			NB			SB		
Opposing Approach		WB		EB			SB			NB		
Opposing Lanes		1		1			2			2		
Conflicting Approach L	.eft	SB		NB			EB			WB		
Conflicting Lanes Left		2		2			1			1		
Conflicting Approach R	Right	NB		SB			WB			EB		
Conflicting Lanes Right	t	2		2			1			1		
HCM Control Delay		11.7		15.9			293.5			35.7		
HCM LOS		В		С			F			Е		
Lane	1	NBLn11	NBLn2	EBLn ₁ 1V	VBLn1	SBLn1	SBLn2					
Vol Left, %		100%	0%	0%	53%	0%	0%					
Vol Thru, %		0%	74%	12%	1%	100%	100%					
Vol Right, %		0%	26%	88%	46%	0%	0%					
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane		7	900	8	205	0	461					
LT Vol		7	0	0	108	0	0					
Through Vol		0	668	1	2	0	459					
RT Vol		0	232	7	95	0	2					
		_		_		_						

501

Yes

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35.7

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0 0.926

6.749 6.746

Yes

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978

Yes

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0.014 1.605 0.018 0.409

8

6.597 5.905

0.015 1.562

0

9.4 295.7

Yes

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2

8.547

Yes

421

0.021

11.7

В

0.1

223

7.667

Yes

472

0.472

15.9

C

2

4.3 3.607 6.547 5.667 4.449 4.446

2

Lane Flow Rate

Geometry Grp Degree of Util (X)

Service Time

Cap

Convergence, Y/N

HCM Lane V/C Ratio

HCM Control Delay

HCM Lane LOS

HCM 95th-tile Q

Departure Headway (Hd)

	۶	→	•	•	←	•	•	†	<i>></i>	>	ţ	✓	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	7	ĵ.			4			ħβ			∱ }		
Traffic Volume (veh/h)	13	32	79	31	7	7	163	514	44	3	230	8	
Future Volume (veh/h)	13	32	79	31	7	7	163	514	44	3	230	8	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.98	1.00		0.96	1.00		0.96	
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	
Work Zone On Approac	h	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	14	35	86	34	8	8	177	559	48	3	250	9	
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	514	93	229	305	71	37	300	1078	92	132	811	29	
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.17	0.33	0.33	0.07	0.23	0.23	
Sat Flow, veh/h	1387	470	1156	630	358	188	1781	3301	283	1781	3493	125	
Grp Volume(v), veh/h	14	0	121	50	0	0	177	300	307	3	127	132	
Grp Sat Flow(s), veh/h/li	n1387	0	1626	1177	0	0	1781	1777	1807	1781	1777	1841	
Q Serve(g_s), s	0.0	0.0	2.2	0.0	0.0	0.0	3.1	4.6	4.6	0.1	2.0	2.0	
Cycle Q Clear(g_c), s	0.2	0.0	2.2	2.2	0.0	0.0	3.1	4.6	4.6	0.1	2.0	2.0	
Prop In Lane	1.00		0.71	0.68		0.16	1.00		0.16	1.00		0.07	
Lane Grp Cap(c), veh/h	514	0	322	413	0	0	300	580	590	132	413	427	
V/C Ratio(X)	0.03	0.00	0.38	0.12	0.00	0.00	0.59	0.52	0.52	0.02	0.31	0.31	
Avail Cap(c_a), veh/h	1415	0	1378	1305	0	0	874	2563	2606	503	2193	2272	
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	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/vel	h 10.9	0.0	11.7	11.1	0.0	0.0	12.9	9.2	9.2	14.4	10.7	10.7	
Incr Delay (d2), s/veh	0.0	0.0	0.7	0.1	0.0	0.0	1.9	0.7	0.7	0.1	0.4	0.4	
Initial Q Delay(d3),s/vel	า 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%),vel	h/lr0.1	0.0	0.7	0.3	0.0	0.0	1.0	1.2	1.2	0.0	0.6	0.6	
Unsig. Movement Delay													
LnGrp Delay(d),s/veh	10.9	0.0	12.4	11.3	0.0	0.0	14.8	9.9	9.9	14.5	11.1	11.1	
LnGrp LOS	В	Α	В	В	Α	Α	В	Α	Α	В	В	В	
Approach Vol, veh/h		135			50			784			262		
Approach Delay, s/veh		12.3			11.3			11.0			11.1		
Approach LOS		В			В			В			В		
Timer - Assigned Phs	1	2		4	5	6		8					
Phs Duration (G+Y+Rc)), s7.0	15.5		11.2	10.2	12.3		11.2					
Change Period (Y+Rc),		4.5		4.5	4.5	4.5		4.5					
Max Green Setting (Gm		48.5		28.5	16.5	41.5		28.5					
Max Q Clear Time (g_c		6.6		4.2	5.1	4.0		4.2					
Green Ext Time (p_c), s		3.8		0.7	0.3	1.4		0.2					
Intersection Summary													
HCM 6th Ctrl Delay			11.2										
HCM 6th LOS			В										
I IOW OUI LOO			ט										

Intersection					
Intersection Delay, s/ve	e 2 09.3				
Intersection LOS	F				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			4		ř	f)		*	f)		
Traffic Vol, veh/h	1	1	5	99	8	87	13	827	106	0	579	0	
Future Vol, veh/h	1	1	5	99	8	87	13	827	106	0	579	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	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	1	1	5	108	9	95	14	899	115	0	629	0	
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0	
Approach	EB			WB			NB			SB			
Opposing Approach	WB			EB			SB			NB			
Opposing Lanes	1			1			2			2			
Conflicting Approach Le	eft SB			NB			EB			WB			
Conflicting Lanes Left	2			2			1			1			
Conflicting Approach R	igh N B			SB			WB			EB			
Conflicting Lanes Right	2			2			1			1			
HCM Control Delay	12.3			16.2			329.3			80.3			
HCM LOS	В			С			F			F			

Lane	NBLn1	NBLn2	EBLn1V	VBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	14%	51%	0%	0%
Vol Thru, %	0%	89%	14%	4%	100%	100%
Vol Right, %	0%	11%	71%	45%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	933	7	194	0	579
LT Vol	13	0	1	99	0	0
Through Vol	0	827	1	8	0	579
RT Vol	0	106	5	87	0	0
Lane Flow Rate	14	1014	8	211	0	629
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.026	1.69	0.016	0.402	0	1.056
Departure Headway (Hd)	6.76	6.169	9.154	7.964	6.801	6.801
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Сар	533	598	393	455	0	541
Service Time	4.46	3.869	7.154	5.964	4.501	4.501
HCM Lane V/C Ratio	0.026	1.696	0.02	0.464	0	1.163
HCM Control Delay	9.6	333.8	12.3	16.2	9.5	80.3
HCM Lane LOS	Α	F	В	С	N	F
HCM 95th-tile Q	0.1	56.8	0	1.9	0	16.4

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	Ĭ	(î		Ť	f)		Ť	ħβ		Ť	ħβ		
Traffic Volume (veh/h)	6	69	60	142	190	150	92	570	283	54	287	9	
Future Volume (veh/h)	6	69	60	142	190	150	92	570	283	54	287	9	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.97	
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	
Work Zone On Approac	h	No			No			No			No		
•	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	7	75	65	154	207	163	100	620	308	59	312	10	
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	23	157	136	200	261	205	165	810	402	128	1170	37	
Arrive On Green	0.01	0.17	0.17	0.11	0.27	0.27	0.09	0.35	0.35	0.07	0.33	0.33	
Sat Flow, veh/h	1781	918	796	1781	963	759	1781	2288	1136	1781	3511	112	
Grp Volume(v), veh/h	7	0	140	154	0	370	100	482	446	59	157	165	
Grp Sat Flow(s), veh/h/lr	1781	0	1714	1781	0	1722	1781	1777	1647	1781	1777	1847	
Q Serve(g_s), s	0.2	0.0	4.6	5.2	0.0	12.4	3.3	14.9	14.9	2.0	4.0	4.0	
Cycle Q Clear(g_c), s	0.2	0.0	4.6	5.2	0.0	12.4	3.3	14.9	14.9	2.0	4.0	4.0	
Prop In Lane	1.00		0.46	1.00		0.44	1.00		0.69	1.00		0.06	
Lane Grp Cap(c), veh/h	23	0	293	200	0	466	165	629	583	128	592	615	
V/C Ratio(X)	0.31	0.00	0.48	0.77	0.00	0.79	0.61	0.77	0.77	0.46	0.27	0.27	
Avail Cap(c_a), veh/h	216	0	650	503	0	931	388	904	838	273	789	820	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	130.3	0.0	23.2	26.7	0.0	21.0	27.0	17.7	17.7	27.6	15.1	15.1	
Incr Delay (d2), s/veh	7.3	0.0	1.2	6.1	0.0	3.1	3.5	2.4	2.6	2.6	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	n/ln0.1	0.0	1.9	2.5	0.0	5.1	1.5	5.6	5.2	0.9	1.4	1.5	
Unsig. Movement Delay	, s/veh												
LnGrp Delay(d),s/veh	37.6	0.0	24.4	32.9	0.0	24.1	30.5	20.2	20.4	30.1	15.3	15.3	
LnGrp LOS	D	Α	С	С	Α	С	С	С	С	С	В	В	
Approach Vol, veh/h		147			524			1028			381		
Approach Delay, s/veh		25.0			26.7			21.3			17.6		
Approach LOS		С			С			С			В		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc)	s9 N	26.4	11.5	15.1	10.2	25.1	5.3	21.3					
Change Period (Y+Rc),		4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gm		31.5	17.5	23.5	13.5	27.5	7.5	33.5					
Max Q Clear Time (g_c-	, ,	16.9	7.2	6.6	5.3	6.0	2.2	14.4					
Green Ext Time (p_c), s		5.0	0.3	0.7	0.1	1.6	0.0	2.4					
Intersection Summary		3.0	7.0	J.,			J. •						
HCM 6th Ctrl Delay			22.2										
HCM 6th LOS			22.2 C										
LICINI OUI EOS			C										

Intersection												
Intersection Delay, s/vel	h 83.7											
Intersection LOS	F											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ች		7	ች	\$	
Traffic Vol, veh/h	0	0	6	54	2	2	9	958	63	2	494	3
Future Vol, veh/h	0	0	6	54	2	2	9	958	63	2	494	3
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	7	59	2	2	10	1041	68	2	537	3
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	0
Annragah		EB		WB			NB			SB		
Approach		WB										
Opposing Approach		ννΒ 1		EB 1			SB			NB 3		
Opposing Lanes	.tı	SB		NB			2 EB			WB		
Conflicting Approach Le Conflicting Lanes Left	ei L	2		3			1			vv D		
Conflicting Approach Rig	aht	NB		SB			WB			EB		
Conflicting Lanes Right		3		2			1			1		
HCM Control Delay		10.8		13			255.9			56.5		
HCM LOS		В		В			F			50.5 F		
TIOWI LOO		U		U			'			•		
Lane	1		NBLn21									
Vol Left, %		100%	0%	0%	0%	93%	100%	0%				
Vol Thru, %		0%	100%	0%	0%	3%	0%	99%				
Vol Right, %		0%	0%	100%	100%	3%	0%	1%				
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop	Stop				
Traffic Vol by Lane		9	958	63	6	58	2	497				
LT Vol		9	0	0	0	54	2	0				
Through Vol		0	958	0	0	2	0	494				
RT Vol		0	0	63	6	2	0	3				

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0.14 0.004 0.956

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1.56 0.089 0.013

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0.016

Lane Flow Rate

Geometry Grp

Degree of Util (X)

€	•	•	†	/	/	↓
Movement WBL	WBR	WBR	NBT	NBR	SBL	SBT
Lane Configurations	7		ħβ		ኝ	^
Traffic Volume (veh/h) 80	20		1309	156	28	970
Future Volume (veh/h) 80	20		1309	156	28	970
Initial Q (Qb), veh 0	0		0	0	0	0
Ped-Bike Adj(A_pbT) 1.00	1.00			0.97	1.00	
Parking Bus, Adj 1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach No			No			No
Adj Sat Flow, veh/h/ln 1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h 87	22		1423	170	30	1054
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 129	115		1771	210	51	2482
Arrive On Green 0.07	0.07		0.56	0.56	0.03	0.70
Sat Flow, veh/h 1781	1585		3282	377	1781	3647
Grp Volume(v), veh/h 87	22		787	806	30	1054
Grp Sat Flow(s), veh/h/ln1781	1585		1777	1789	1781	1777
Q Serve(g_s), s 1.9	0.5		13.9	14.3	0.7	5.0
Cycle Q Clear(g_c), s 1.9	0.5		13.9	14.3	0.7	5.0
Prop In Lane 1.00	1.00			0.21	1.00	
Lane Grp Cap(c), veh/h 129	115		987	994	51	2482
V/C Ratio(X) 0.68	0.19		0.80	0.81	0.59	0.42
Avail Cap(c_a), veh/h 821	731	731	1082	1089	204	2978
HCM Platoon Ratio 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
Uniform Delay (d), s/veh 17.8	17.1	17.1	7.0	7.1	18.8	2.5
Incr Delay (d2), s/veh 6.1	0.8	0.8	3.9	4.4	10.6	0.1
Initial Q Delay(d3),s/veh 0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr0.9	0.2		3.2	3.4	0.4	0.0
Unsig. Movement Delay, s/ve			J.L	J. 1	J. 1	3.0
LnGrp Delay(d),s/veh 23.8	17.9		10.9	11.5	29.4	2.7
LnGrp LOS C	17.9 B		В	11.3 B	23.4 C	Α.
	ט	U		D	U	
Approach Vol, veh/h 109			1593			1084
Approach Delay, s/veh 22.6			11.2			3.4
Approach LOS C			В			Α
Timer - Assigned Phs 1	2					6
Phs Duration (G+Y+Rc), s5.6	26.3					31.9
Change Period (Y+Rc), s 4.5	4.5	4.5				4.5
Max Green Setting (Gmax), 5						32.9
Max Q Clear Time (g_c+l12),78						7.0
Green Ext Time (p_c), s 0.0	5.5					8.0
Intersection Summary						
•			0.6			
HCM 6th Ctrl Delay			8.6			
HCM 6th LOS			Α			

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			4	7	ች	^			ħβ		
Traffic Volume (veh/h)	23	0	51	4	0	0	84	1144	0	0	577	8	
Future Volume (veh/h)	23	0	51	4	0	0	84	1144	0	0	577	8	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00	•	1.00	1.00		1.00	1.00		0.96	
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	
Work Zone On Approach		No	1.00	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00	
	1870	1870	1870	1870	1870	1870	1870	1870	0	0	1870	1870	
Adj Flow Rate, veh/h	25	0	55	4	0	0	91	1243	0	0	627	9	
	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	0.02	0.02	2	2	
Cap, veh/h	52	0	115	16	0	7	117	1860	0	0	1206	17	
	0.11	0.00	0.11	0.00	0.00	0.00	0.07	0.52	0.00	0.00	0.34	0.34	
Sat Flow, veh/h	483	0.00	1063	3563	0.00	1585	1781	3647	0.00	0.00	3677	51	
Grp Volume(v), veh/h	80	0	0	4	0	0	91	1243	0	0	311	325	
Grp Sat Flow(s),veh/h/ln		0	0	1781	0	1585	1781	1777	0	0	1777	1858	
Q Serve(g_s), s	1.8	0.0	0.0	0.0	0.0	0.0	1.9	9.5	0.0	0.0	5.2	5.2	
Cycle Q Clear(g_c), s	1.8	0.0	0.0	0.0	0.0	0.0	1.9	9.5	0.0	0.0	5.2	5.2	
	0.31	0.0	0.69	1.00	0.0	1.00	1.00	3.5	0.00	0.00	J.Z	0.03	
Lane Grp Cap(c), veh/h	167	0	0.03	1.00	0	7	117	1860	0.00	0.00	598	625	
	0.48	0.00	0.00	0.26	0.00	0.00	0.78	0.67	0.00	0.00	0.52	0.52	
Avail Cap(c_a), veh/h	751	0.00	0.00	1489	0.00	662	216	2683	0.00	0.00	910	952	
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	
	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	
Upstream Filter(I)		0.00	0.00	18.4	0.00	0.00	17.1	6.5	0.00	0.00	9.9	9.9	
Uniform Delay (d), s/veh	2.1	0.0	0.0	8.5	0.0	0.0	10.6	0.5	0.0	0.0	0.7	0.7	
Incr Delay (d2), s/veh		0.0	0.0	0.0		0.0	0.0	0.4	0.0	0.0	0.7	0.7	
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	1.4		
%ile BackOfQ(50%),veh			0.0	0.0	0.0	0.0	0.9	1.0	0.0	0.0	1.4	1.5	
Unsig. Movement Delay,			0.0	26.0	0.0	0.0	27.6	6.0	0.0	0.0	10.6	10.6	
LnGrp Delay(d),s/veh	17.7	0.0	0.0	26.9	0.0		27.6	6.9	0.0	0.0	10.6	10.6	
LnGrp LOS	В	A	A	С	A	A	С	A 4004	A	A	В	В	
Approach Vol, veh/h		80			4			1334			636		
Approach Delay, s/veh		17.7			26.9			8.3			10.6		
Approach LOS		В			С			Α			В		
Timer - Assigned Phs		2		4	5	6		8					
Phs Duration (G+Y+Rc),	. S	23.9		8.5	6.9	17.0		4.7					
Change Period (Y+Rc),		4.5		4.5	4.5	4.5		4.5					
Max Green Setting (Gma		28.0		18.0	4.5	19.0		15.5					
Max Q Clear Time (g_c+		11.5		3.8	3.9	7.2		2.0					
Green Ext Time (p_c), s		7.9		0.3	0.0	2.8		0.0					
Intersection Summary				3.0	3.0			3.0					
HCM 6th Ctrl Delay			9.4										
HCM 6th LOS			9.4 A										
Notes			,,										

User approved volume balancing among the lanes for turning movement.

	ᄼ	→	\rightarrow	•	•	•	•	†	/	-	↓	4	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	^	7	ሻሻ	↑ ↑	WEIN	75	^	7	ሻ	†	ODIT	
Traffic Volume (veh/h)	329	633	254	302	281	67	238	646	415	205	372	185	
Future Volume (veh/h)	329	633	254	302	281	67	238	646	415	205	372	185	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	U	0.98	1.00		0.98	1.00	· ·	1.00	1.00	J	0.98	
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	
Work Zone On Approac		No	1.00	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	358	688	276	328	305	73	259	702	451	223	404	201	
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	264	1143	498	366	795	187	294	982	606	175	664	326	
Arrive On Green	0.15	0.32	0.32	0.11	0.28	0.28	0.09	0.28	0.28	0.10	0.29	0.29	
	1781	3554	1548	3456	2844	669	3456	3554	1585	1781	2296	1127	
Sat Flow, veh/h													
Grp Volume(v), veh/h	358	688	276	328	189	189	259	702	451	223	311	294	
Grp Sat Flow(s),veh/h/l		1777	1548	1728	1777	1736	1728	1777	1585	1781	1777	1646	
Q Serve(g_s), s	14.8	16.3	14.7	9.4	8.6	8.8	7.4	17.8	24.6	9.8	15.1	15.4	
Cycle Q Clear(g_c), s	14.8	16.3	14.7	9.4	8.6	8.8	7.4	17.8	24.6	9.8	15.1	15.4	
Prop In Lane	1.00	4440	1.00	1.00	407	0.39	1.00	000	1.00	1.00	= 4.4	0.68	
_ane Grp Cap(c), veh/h		1143	498	366	497	486	294	982	606	175	514	476	
V/C Ratio(X)	1.36	0.60	0.55	0.90	0.38	0.39	0.88	0.71	0.74	1.28	0.61	0.62	
Avail Cap(c_a), veh/h	264	1143	498	366	508	497	294	995	612	175	522	484	
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	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/ve		28.5	28.0	44.2	29.0	29.1	45.3	32.6	26.7	45.1	30.6	30.7	
Incr Delay (d2), s/veh		2.3	4.4	22.3	2.1	2.3	24.5	2.7	5.3	161.5	2.5	2.9	
nitial Q Delay(d3),s/vel		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%),ve		7.0	5.9	5.0	3.8	3.9	4.1	7.8	9.7	12.1	6.6	6.3	
Jnsig. Movement Delay													
_nGrp Delay(d),s/veh		30.9	32.4	66.5	31.2	31.4	69.7	35.3	31.9	206.6	33.1	33.6	
LnGrp LOS	F	С	С	Е	С	С	Е	D	С	F	С	С	
Approach Vol, veh/h		1322			706			1412			828		
Approach Delay, s/veh		84.1			47.6			40.5			80.0		
Approach LOS		F			D			D			F		
Timer - Assigned Phs	1	2	3	1	5	6	7	8					
	1 440			24.0			-						
Phs Duration (G+Y+Rc		38.5	12.7	34.0	19.0	34.3	14.0	32.7					
Change Period (Y+Rc),		6.3	* 4.2	* 5.1	* 4.2	* 6.3	* 4.2	5.1					
Max Green Setting (Gr		31.8	* 8.5	* 29	* 15	* 29	* 9.8	28.0					
Max Q Clear Time (g_c	, .	18.3	9.4	17.4	16.8	10.8	11.8	26.6					
Green Ext Time (p_c),	5 0.0	6.3	0.0	4.2	0.0	2.4	0.0	1.0					
Intersection Summary													
HCM 6th Ctrl Delay			62.9										
HCM 6th LOS			Е										
Notes													

^{*} HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

	-	•	•	•	4	/	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	∱ }		ሻ	^	ሻ	7	
Traffic Volume (veh/h)	1144	28	103	658	16	117	
	1144	28	103	658	16	117	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)		0.97	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approac				No	No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	1243	30	112	715	17	127	
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	1846	45	147	2487	192	171	
Arrive On Green	0.52	0.52	0.08	0.70	0.11	0.11	
Sat Flow, veh/h	3636	85	1781	3647	1781	1585	
Grp Volume(v), veh/h	623	650	112	715	17	127	
Grp Sat Flow(s), veh/h/l		1851	1781	1777	1781	1585	
Q Serve(g_s), s	12.1	12.1	2.9	3.5	0.4	3.6	
Cycle Q Clear(g_c), s	12.1	12.1	2.9	3.5	0.4	3.6	
,	12.1	0.05	1.00	3.5	1.00	1.00	
Prop In Lane	000			0407			
Lane Grp Cap(c), veh/h		965	147	2487	192	171	
V/C Ratio(X)	0.67	0.67	0.76	0.29	0.09	0.74	
Avail Cap(c_a), veh/h	1915	1995	589	5347	779	693	
HCM Platoon Ratio	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	
Uniform Delay (d), s/ve		8.3	21.0	2.6	18.8	20.3	
Incr Delay (d2), s/veh	0.9	0.8	7.8	0.1	0.2	6.2	
Initial Q Delay(d3),s/vel	h 0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),ve	h/lr3.0	3.1	1.3	0.3	0.2	1.5	
Unsig. Movement Delay	y, s/veh						
LnGrp Delay(d),s/veh	9.1	9.1	28.8	2.7	19.0	26.4	
LnGrp LOS	Α	Α	С	Α	В	С	
Approach Vol, veh/h	1273			827	144		
Approach Delay, s/veh				6.2	25.6		
Approach LOS	A			A	C		
••	- /\			- '			
Timer - Assigned Phs	1	2				6	
Phs Duration (G+Y+Rc	, .	28.9				37.3	
Change Period (Y+Rc)	s 4.5	4.5				4.5	
Max Green Setting (Gn	na 1 k5,,.5s	50.5				70.5	
Max Q Clear Time (g_c		14.1				5.5	
Green Ext Time (p_c),	, .	10.3				5.4	
Intersection Summary							
			0.4				
HCM 6th Ctrl Delay			9.1				
HCM 6th LOS			Α				

	•	→	*	•	←	•	4	†	<i>></i>	/	ļ	4	
Movement I	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻሻ	^	7		^	7	77	∱ ∱		ሻ	^	7	
	492	239	349	102	133	27	336	659	100	81	398	215	
	492	239	349	102	133	27	336	659	100	81	398	215	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
, , , , , , , , , , , , , , , , , , ,	1.00	4.00	0.97	1.00	4.00	0.95	1.00	4.00	0.98	1.00	4.00	0.95	
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	1070	1070	No	1070	1070	No	1070	1070	No	1070	
	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
	535	260	379	111	145	29	365	716	109	88	433	234	
	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, %	658	1094	475	2 141	678	288	454	946	144	130	882	376	
	0.19	0.31	0.31	0.08	0.19	0.19	0.13	0.31	0.31	0.07	0.25	0.25	
	0.19 3456	3554	1544	1781	3554	1510	3456	3084	469	1781	3554	1513	
								412				234	
	535	260	379	111	145	29	365		413	88	433	1513	
Grp Sat Flow(s), veh/h/ln1		1777	1544	1781	1777	1510 1.3	1728 8.6	1777	1777 17.6	1781	1777	11.5	
(O= 7)	12.4 12.4	4.6 4.6	18.8 18.8	5.1 5.1	2.9	1.3	8.6	17.5 17.5	17.6	4.0	8.7 8.7	11.5	
(0-):	1.00	4.0	1.00	1.00	2.9	1.00	1.00	17.5	0.26	1.00	0.1	1.00	
	658	1094	475	141	678	288	454	545	545	130	882	376	
	0.81	0.24	0.80	0.78	0.21	0.10	0.80	0.76	0.76	0.68	0.49	0.62	
. ,	909	1580	686	319	1261	536	714	760	760	266	1316	560	
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
	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/veh3		21.6	26.6	37.8	28.6	27.9	35.3	26.2	26.2	37.8	26.9	28.0	
Incr Delay (d2), s/veh	4.4	0.1	4.8	3.6	0.2	0.2	1.6	2.8	2.8	2.3	0.4	1.7	
2 ()	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/l		1.8	7.0	2.3	1.2	0.5	3.5	7.3	7.3	1.8	3.5	4.1	
Unsig. Movement Delay,			7.0	2.0		0.0	0.0	1.0	1.0	1.0	0.0		
	36.9	21.8	31.4	41.4	28.8	28.1	36.9	29.0	29.0	40.1	27.4	29.7	
LnGrp LOS	D	С	С	D	С	С	D	С	С	D	С	С	
Approach Vol, veh/h		1174			285			1190			755		
Approach Delay, s/veh		31.7			33.6			31.4			29.6		
Approach LOS		С			С			С			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc),	<u> </u> 161 1	31.3	15.5	25.8	20.9	21.5	10.6	30.7					
Change Period (Y+Rc), s		5.5	4.5	5.0	5.0	5.5	4.5	5.0					
Max Green Setting (Gmat		37.2	17.3	31.0	22.0	29.7	12.5	35.8					
Max Q Clear Time (g_c+l		20.8	10.6	13.5	14.4	4.9	6.0	19.6					
Green Ext Time (p_c), s		3.3	0.4	3.3	1.5	1.1	0.0	4.5					
,	0.1	0.0	0.4	0.0	1.0	1.1	0.0	7.0					
Intersection Summary			0/-										
HCM 6th Ctrl Delay			31.3										
HCM 6th LOS			С										

ATTACHMENT F EXISTING + CUMULATIVE PROJECTS + PROJECT (NO MAGNOLIA AVENUE EXTENSION – PROHIBITED SOUTHBOUND LEFT-TURNS FROM CUYAMACA STREET) PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS

Intersection						
Int Delay, s/veh	0.7					
	WDI	WDD	NDT	NDD	CDI	CDT
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y	•	↑	7	ች	↑
Traffic Vol, veh/h	0	84	362	0	0	863
Future Vol, veh/h	0	84	362	0	0	863
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	-	-	150	50	-
Veh in Median Storag	e, # 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	91	393	0	0	938
	Minor1		Major1		Major2	
Conflicting Flow All	1331	393	0	0	393	0
Stage 1	393	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	170	656	-	_	1166	-
Stage 1	682	-	-	-	-	-
Stage 2	381	_	_	_	_	-
Platoon blocked, %	301		_	_		_
Mov Cap-1 Maneuver	170	656	_	_	1166	_
Mov Cap-1 Maneuver		- 000	_		1100	_
	682		-	-		
Stage 1		-	-	-	-	-
Stage 2	381	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s			0		0	
HCM LOS	В		- 0		U	
TIOWI LOO	U					
Minor Lane/Major Mvr	nt	NBT	NBRV	VBLn1	SBL	SBT
Capacity (veh/h)		-	-	656	1166	-
HCM Lane V/C Ratio		_	_	0.139	-	_
HCM Control Delay (s)	-	-	11.4	0	-
HCM Lane LOS	,	_	_	В	A	_
HCM 95th %tile Q(veh	1)	_	_	0.5	0	_
TION JOHN JUHO Q(VEI	'/	_	_	0.0	J	

Intersection			
Intersection Delay, s/veh	8.5	_	 _
Intersection LOS	Α		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		,	†	7	¥	†	7
Traffic Vol, veh/h	0	0	55	32	8	0	117	4	8	0	7	0
Future Vol, veh/h	0	0	55	32	8	0	117	4	8	0	7	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	60	35	9	0	127	4	9	0	8	0
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	1
Approach		EB		WB			NB			SB		
Opposing Approach		WB		EB			SB			NB		
Opposing Lanes		1		1			3			3		
Conflicting Approach Left		SB		NB			EB			WB		
Conflicting Lanes Left		3		3			1			1		
Conflicting Approach Right		NB		SB			WB			EB		
Conflicting Lanes Right		3		3			1			1		
HCM Control Delay		7.3		8.4			9			7.7		
HCM LOS		Α		Α			Α			Α		

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3	
Vol Left, %	100%	0%	0%	0%	80%	0%	0%	0%	
Vol Thru, %	0%	100%	0%	0%	20%	100%	100%	100%	
Vol Right, %	0%	0%	100%	100%	0%	0%	0%	0%	
Sign Control	Stop								
Traffic Vol by Lane	117	4	8	55	40	0	7	0	
LT Vol	117	0	0	0	32	0	0	0	
Through Vol	0	4	0	0	8	0	7	0	
RT Vol	0	0	8	55	0	0	0	0	
Lane Flow Rate	127	4	9	60	43	0	8	0	
Geometry Grp	7	7	7	7	7	7	7	7	
Degree of Util (X)	0.184	0.006	0.01	0.071	0.065	0	0.01	0	
Departure Headway (Hd)	5.219	4.718	4.017	4.268	5.373	4.916	4.916	4.916	
Convergence, Y/N	Yes								
Сар	680	749	878	844	670	0	731	0	
Service Time	3.006	2.505	1.803	1.969	3.076	2.626	2.626	2.626	
HCM Lane V/C Ratio	0.187	0.005	0.01	0.071	0.064	0	0.011	0	
HCM Control Delay	9.2	7.5	6.8	7.3	8.4	7.6	7.7	7.6	
HCM Lane LOS	Α	Α	Α	Α	Α	N	Α	N	
HCM 95th-tile Q	0.7	0	0	0.2	0.2	0	0	0	

Intersection					
Intersection Delay, s/ve	e 2 11.5				
Intersection LOS	F				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			4		- ሻ	ĵ.		- 1	ß		
Traffic Vol, veh/h	0	1	12	233	0	46	3	326	68	0	891	0	
Future Vol, veh/h	0	1	12	233	0	46	3	326	68	0	891	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	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	1	13	253	0	50	3	354	74	0	968	0	
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0	
Approach		EB		WB			NB			SB			
Opposing Approach		WB		EB			SB			NB			
Opposing Lanes		1		1			2			2			
Conflicting Approach Le	eft	SB		NB			EB			WB			
Conflicting Lanes Left		2		2			1			1			
Conflicting Approach R	ight	NB		SB			WB			EB			
Conflicting Lanes Right		2		2			1			1			
HCM Control Delay		12.5		21.6			30.2			354.6			
HCM LOS		В		С			D			F			

Lane	NBLn1	NBLn2	EBLn1V	VBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	84%	0%	0%
Vol Thru, %	0%	83%	8%	0%	100%	100%
Vol Right, %	0%	17%	92%	16%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	394	13	279	0	891
LT Vol	3	0	0	233	0	0
Through Vol	0	326	1	0	0	891
RT Vol	0	68	12	46	0	0
Lane Flow Rate	3	428	14	303	0	968
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.006	0.768	0.029	0.578	0	1.735
Departure Headway (Hd)	7.954	7.313	9.201	8.087	6.448	6.448
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	453	497	391	449	0	571
Service Time	5.654	5.013	7.201	6.087	4.19	4.19
HCM Lane V/C Ratio	0.007	0.861	0.036	0.675	0	
HCM Control Delay	10.7	30.3	12.5	21.6	9.2	354.6
HCM Lane LOS	В	D	В	С	N	F
HCM 95th-tile Q	0	6.7	0.1	3.6	0	57.3

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		ĵ.			4		ሻ	ħβ		ሻ	ħβ		
Traffic Volume (veh/h)	17	1	111	45	13	10	78	232	14	7	348	11	
Future Volume (veh/h)	17	1	111	45	13	10	78	232	14	7	348	11	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.90	0.93		0.98	1.00		0.97	1.00		0.82	
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	
Work Zone On Approac	:h	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	18	1	121	49	14	11	85	252	15	8	378	12	
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	614	4	432	344	95	53	181	950	56	203	1016	32	
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.10	0.28	0.28	0.11	0.29	0.29	
Sat Flow, veh/h	1381	12	1412	688	311	175	1781	3403	201	1781	3488	110	
Grp Volume(v), veh/h	18	0	122	74	0	0	85	131	136	8	192	198	
Grp Sat Flow(s), veh/h/li	n1381	0	1423	1174	0	0	1781	1777	1828	1781	1777	1822	
Q Serve(g_s), s	0.0	0.0	2.9	0.5	0.0	0.0	2.0	2.6	2.6	0.2	3.8	3.9	
Cycle Q Clear(g_c), s	0.3	0.0	2.9	3.5	0.0	0.0	2.0	2.6	2.6	0.2	3.8	3.9	
Prop In Lane	1.00		0.99	0.66		0.15	1.00		0.11	1.00		0.06	
Lane Grp Cap(c), veh/h	614	0	436	493	0	0	181	496	510	203	518	531	
V/C Ratio(X)	0.03	0.00	0.28	0.15	0.00	0.00	0.47	0.26	0.27	0.04	0.37	0.37	
Avail Cap(c_a), veh/h	1221	0	1062	1073	0	0	615	1642	1689	456	1484	1521	
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	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/vel	h 10.9	0.0	11.8	11.6	0.0	0.0	19.0	12.6	12.6	17.7	12.6	12.7	
Incr Delay (d2), s/veh	0.0	0.0	0.3	0.1	0.0	0.0	1.9	0.3	0.3	0.1	0.4	0.4	
Initial Q Delay(d3),s/vel	n 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%),vel	h/lr0.1	0.0	0.8	0.5	0.0	0.0	0.8	8.0	0.9	0.1	1.2	1.3	
Unsig. Movement Delay	/, s/veh												
LnGrp Delay(d),s/veh	10.9	0.0	12.2	11.8	0.0	0.0	20.9	12.9	12.9	17.8	13.1	13.1	
LnGrp LOS	В	Α	В	В	Α	Α	С	В	В	В	В	В	
Approach Vol, veh/h		140			74			352			398		
Approach Delay, s/veh		12.0			11.8			14.8			13.2		
Approach LOS		В			В			В			В		
Timer - Assigned Phs	1	2		4	5	6		8					
Phs Duration (G+Y+Rc)), s9.6	17.0		18.3	9.1	17.6		18.3					
Change Period (Y+Rc),		4.5		4.5	4.5	4.5		4.5					
Max Green Setting (Gm		41.5		33.5	15.5	37.5		33.5					
Max Q Clear Time (g_c		4.6		4.9	4.0	5.9		5.5					
Green Ext Time (p_c), s		1.5		0.9	0.1	2.2		0.4					
Intersection Summary													
HCM 6th Ctrl Delay			13.5										
HCM 6th LOS			В										
TION OUT LOO													

Intersection												
Intersection Delay, s/ve												
Intersection LOS	F											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Configurations		4			4		ሻ	f)			ĵ.	
Traffic Vol, veh/h	0	1	7	264	4	45	5	358	48	0	1148	
Future Vol, veh/h	0	1	7	264	4	45	5	358	48	0	1148	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	8	287	4	49	5	389	52	0	1248	1
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Approach		EB		WB			NB			SB		
Opposing Approach		WB		EB			SB			NB		
Opposing Lanes		1		1			2			2		
Conflicting Approach Le	eft	SB		NB			EB			WB		
Conflicting Lanes Left		2		2			1			1		
Conflicting Approach R	ight	NB		SB			WB			EB		
Conflicting Lanes Right	t	2		2			1			1		
HCM Control Delay		14.1		27.3			37.9			611.9		
HCM LOS		В		D			Е			F		
Lane	١	NBLn11	NBLn2	EBLn1V	VBLn1	SBLn1	SBLn2					
Vol Left, %		100%	0%	0%	84%	0%	0%					
Vol Thru, %		0%	88%	12%	1%	100%	100%					
Vol Right, %		0%	12%	88%	14%	0%	0%					
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane		5	406	8	313	0	1149					
LT Vol		5	0	0	264	0	0					
Through Vol		0	358	1	4	0	1148					
RT Vol		0	48	7	45	0	1					
Lane Flow Rate		5	441	9	340	0	1249					
Geometry Grp		7	7	2	2	7	7					
Degree of Util (X)		0.011	0.817	0.019	0.654	0	2.313					
Departure Headway (H	d)	8.776	8.169	10.852	8.942	6.669	6.668					
Convergence, Y/N		Yes	Yes	Yes	Yes	Yes	Yes					
Сар		410	446	332	408	0	550					
Service Time		6.476	5.869	8.852	6.942	4.416	4.415					
HCM Lane V/C Ratio			0.989				2.271					
HCM Control Delay		11.6	38.2	14.1	27.3	9.4	611.9					
HOM Lana LOC		D	г	Р		N I	г					

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HCM Lane LOS

HCM 95th-tile Q

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	Ť	ĵ.		*	f)		7	ħβ		7	ħβ		
Traffic Volume (veh/h)	46	64	96	140	164	145	51	356	218	118	472	85	
Future Volume (veh/h)	46	64	96	140	164	145	51	356	218	118	472	85	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98	
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	
Work Zone On Approac	h	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	50	70	104	152	178	158	55	387	237	128	513	92	
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	106	128	190	193	216	192	112	799	482	164	1220	218	
Arrive On Green	0.06	0.19	0.19	0.11	0.24	0.24	0.06	0.38	0.38	0.09	0.41	0.41	
Sat Flow, veh/h	1781	673	1000	1781	906	804	1781	2119	1279	1781	3001	535	
Grp Volume(v), veh/h	50	0	174	152	0	336	55	324	300	128	303	302	
Grp Sat Flow(s), veh/h/lr	1781	0	1673	1781	0	1710	1781	1777	1621	1781	1777	1759	
Q Serve(g_s), s	2.1	0.0	7.3	6.4	0.0	14.4	2.3	10.7	11.0	5.4	9.4	9.5	
Cycle Q Clear(g_c), s	2.1	0.0	7.3	6.4	0.0	14.4	2.3	10.7	11.0	5.4	9.4	9.5	
Prop In Lane	1.00		0.60	1.00		0.47	1.00		0.79	1.00		0.30	
Lane Grp Cap(c), veh/h	106	0	318	193	0	409	112	670	611	164	722	715	
V/C Ratio(X)	0.47	0.00	0.55	0.79	0.00	0.82	0.49	0.48	0.49	0.78	0.42	0.42	
Avail Cap(c_a), veh/h	195	0	507	425	0	739	195	670	611	356	722	715	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	135.3	0.0	28.4	33.7	0.0	27.9	35.1	18.4	18.4	34.4	16.4	16.5	
Incr Delay (d2), s/veh	3.2	0.0	1.5	7.0	0.0	4.2	3.3	2.5	2.8	7.8	1.8	1.8	
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	n/ln1.0	0.0	3.0	3.1	0.0	6.2	1.1	4.4	4.2	2.6	3.8	3.8	
Unsig. Movement Delay	, s/veh												
LnGrp Delay(d),s/veh	38.5	0.0	29.8	40.7	0.0	32.1	38.5	20.9	21.3	42.2	18.2	18.3	
LnGrp LOS	D	Α	С	D	Α	С	D	С	С	D	В	В	
Approach Vol, veh/h		224			488			679			733		
Approach Delay, s/veh		31.7			34.8			22.5			22.5		
Approach LOS		С			С			С			С		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc)	\$ 1.6	33.7	12.9	19.2	9.4	36.0	9.1	23.0					
Change Period (Y+Rc),		4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gm		24.5	18.5	23.5	8.5	31.5	8.5	33.5					
Max Q Clear Time (g_c-		13.0	8.4	9.3	4.3	11.5	4.1	16.4					
Green Ext Time (p_c), s		2.9	0.4	0.8	0.0	3.4	0.0	2.0					
Intersection Summary	V.2	0	3.0	3.0	5.5	J. 1	J.0						
			20.2										
HCM 6th Ctrl Delay			26.3										
HCM 6th LOS			С										

Intersection						
Intersection Delay, s/vo	eh 306					
Intersection LOS	F					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			4		7		7	*	ĥ		
Traffic Vol, veh/h	0	0	11	93	1	1	1	420	32	3	1066	0	
Future Vol, veh/h	0	0	11	93	1	1	1	420	32	3	1066	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	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	0	12	101	1	1	1	457	35	3	1159	0	
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	0	
Approach		EB		WB			NB			SB			
Opposing Approach		WB		EB			SB			NB			
Opposing Lanes		1		1			2			3			
Conflicting Approach L	eft	SB		NB			EB			WB			
Conflicting Lanes Left		2		3			1			1			
Conflicting Approach R	light	NB		SB			WB			EB			
Conflicting Lanes Right	t	3		2			1			1			
HCM Control Delay		11.6		14.7			22.5			455			
HCM LOS		В		В			С			F			

Lane	NBLn11	NBLn21	NBLn3	EBLn1V	VBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	98%	100%	0%
Vol Thru, %	0%	100%	0%	0%	1%	0%	100%
Vol Right, %	0%	0%	100%	100%	1%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	420	32	11	95	3	1066
LT Vol	1	0	0	0	93	3	0
Through Vol	0	420	0	0	1	0	1066
RT Vol	0	0	32	11	1	0	0
Lane Flow Rate	1	457	35	12	103	3	1159
Geometry Grp	7	7	7	7	7	8	8
Degree of Util (X)	0.002	0.715	0.048	0.023	0.222	0.006	1.967
Departure Headway (Hd)	6.93	6.42	5.705	8.688	9.351	6.615	6.111
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	519	566	632	415	386	537	603
Service Time	4.63	4.12	3.405	6.388	7.051	4.41	3.905
HCM Lane V/C Ratio	0.002	0.807	0.055	0.029	0.267	0.006	1.922
HCM Control Delay	9.6	23.6	8.7	11.6	14.7	9.5	456.3
HCM Lane LOS	Α	С	Α	В	В	Α	F
HCM 95th-tile Q	0	5.8	0.2	0.1	0.8	0	75.8

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Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		7	∱ }		*	^
Traffic Volume (veh/h)	163	34	644	111	111	1599
Future Volume (veh/h)	163	34	644	111	111	1599
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approac	h No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	177	37	700	121	121	1738
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	253	225	1295	224	154	2236
Arrive On Green	0.14	0.14	0.43	0.43	0.09	0.63
Sat Flow, veh/h	1781	1585	3117	522	1781	3647
Grp Volume(v), veh/h	177	37	411	410	121	1738
Grp Sat Flow(s), veh/h/li		1585	1777	1768	1781	1777
Q Serve(g_s), s	3.7	0.8	6.8	6.8	2.6	14.0
Cycle Q Clear(g_c), s	3.7	0.8	6.8	6.8	2.6	14.0
Prop In Lane	1.00	1.00	0.0	0.30	1.00	14.0
Lane Grp Cap(c), veh/h		225	761	758	154	2236
	0.70	0.16	0.54	0.54	0.78	0.78
V/C Ratio(X)						
Avail Cap(c_a), veh/h	814	725	812	808	249	2527
HCM Platoon Ratio	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
Uniform Delay (d), s/vel		14.8	8.4	8.4	17.6	5.3
Incr Delay (d2), s/veh	3.5	0.3	0.6	0.6	8.5	1.4
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),vel		0.3	1.7	1.7	1.2	1.6
Unsig. Movement Delay					22.1	
LnGrp Delay(d),s/veh	19.6	15.2	9.0	9.0	26.1	6.7
LnGrp LOS	В	В	Α	A	С	Α
Approach Vol, veh/h	214		821			1859
Approach Delay, s/veh	18.8		9.0			8.0
Approach LOS	В		Α			Α
Timer - Assigned Phs	1	2				6
Phs Duration (G+Y+Rc)	\ c7 Q	21.4				29.3
Change Period (Y+Rc),		4.5				4.5
Max Green Setting (Gm		18.0				28.0
Max Q Clear Time (g_c	, ,					16.0
Green Ext Time (p_c), s		3.3				8.8
" '	5 0.0	0.0				0.0
Intersection Summary						
HCM 6th Ctrl Delay			9.1			
HCM 6th LOS			Α			
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4		*	स	7	ች	^			ħβ		
Traffic Volume (veh/h)	13	0	58	189	0	31	33	691	0	0	868	2	
Future Volume (veh/h)	13	0	58	189	0	31	33	691	0	0	868	2	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.84	1.00		1.00	1.00		1.00	1.00	•	0.95	
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	
Work Zone On Approac		No	1.00	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	0	0	1870	1870	
Adj Flow Rate, veh/h	14	0	63	205	0	34	36	751	0	0	943	2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	0.32	0.92	2	2	
Cap, veh/h	55	0	247	351	0	156	55	1582	0	0	1217	3	
Arrive On Green	0.22	0.00	0.22	0.10	0.00	0.10	0.03	0.45	0.00	0.00	0.33	0.33	
	254		1142				1781	3647			3731	0.33	
Sat Flow, veh/h		0		3563	0	1585			0	0			
Grp Volume(v), veh/h	77	0	0	205	0	34	36	751	0	0	461	484	
Grp Sat Flow(s), veh/h/l		0	0	1781	0	1585	1781	1777	0	0	1777	1869	
Q Serve(g_s), s	2.6	0.0	0.0	3.1	0.0	1.1	1.1	8.4	0.0	0.0	13.1	13.1	
Cycle Q Clear(g_c), s	2.6	0.0	0.0	3.1	0.0	1.1	1.1	8.4	0.0	0.0	13.1	13.1	
Prop In Lane	0.18		0.82	1.00		1.00	1.00		0.00	0.00		0.00	
Lane Grp Cap(c), veh/h		0	0	351	0	156	55	1582	0	0	594	625	
V/C Ratio(X)	0.26	0.00	0.00	0.58	0.00	0.22	0.66	0.47	0.00	0.00	0.78	0.78	
Avail Cap(c_a), veh/h	447	0	0	1014	0	451	127	2054	0	0	759	798	
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	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	
Uniform Delay (d), s/vel	h 18.3	0.0	0.0	24.2	0.0	23.3	27.0	11.0	0.0	0.0	16.8	16.8	
Incr Delay (d2), s/veh	0.4	0.0	0.0	1.5	0.0	0.7	12.8	0.2	0.0	0.0	3.9	3.7	
Initial Q Delay(d3),s/vel	h 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%),ve	h/ln0.8	0.0	0.0	1.3	0.0	0.4	0.6	2.6	0.0	0.0	5.0	5.3	
Unsig. Movement Delay	y, s/veh	1											
LnGrp Delay(d),s/veh	18.7	0.0	0.0	25.8	0.0	24.0	39.8	11.2	0.0	0.0	20.7	20.5	
LnGrp LOS	В	Α	Α	С	Α	С	D	В	Α	Α	С	С	
Approach Vol, veh/h		77			239			787			945		
Approach Delay, s/veh		18.7			25.5			12.5			20.6		
Approach LOS		В			C			В			C		
Timer - Assigned Phs		2		4	5	6		8					
Phs Duration (G+Y+Rc), s	29.5		16.7	6.2	23.3		10.0					
Change Period (Y+Rc),	, .	4.5		4.5	4.5	4.5		4.5					
Max Green Setting (Gm		32.5		18.0	4.0	24.0		16.0					
Max Q Clear Time (g_c		10.4		4.6	3.1	15.1		5.1					
Green Ext Time (p_c),		5.0		0.3	0.0	3.7		0.6					
Intersection Summary													
HCM 6th Ctrl Delay			18.0										
HCM 6th LOS			В										
Notes													

User approved volume balancing among the lanes for turning movement.

	ᄼ	→	\searrow	•	•	•	4	†	/	>	↓	✓	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	^	7	ሻሻ	↑ ↑	WEIN	ሻሻ	^	7	ኘ	†	ODIT	
Traffic Volume (veh/h)	157	339	219	346	694	31	210	282	190	384	617	507	
Future Volume (veh/h)	157	339	219	346	694	31	210	282	190	384	617	507	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00	•	0.98	1.00	•	0.98	
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	
Work Zone On Approac		No	1.00	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	171	368	238	376	754	34	228	307	207	417	671	551	
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	121	1048	457	270	1055	48	270	999	561	264	648	527	
Arrive On Green	0.07	0.30	0.30	0.08	0.31	0.31	0.08	0.28	0.28	0.15	0.35	0.35	
Sat Flow, veh/h	1781	3554	1549	3456	3460	156	3456	3554	1557	1781	1847	1501	
	171	368	238	376	387	401	228	307	207	417	645	577	
Grp Volume(v), veh/h													
Grp Sat Flow(s),veh/h/l		1777	1549	1728	1777	1839	1728	1777	1557	1781	1777	1571	
Q Serve(g_s), s	6.8	8.1	12.8	7.8	19.4	19.4	6.5	6.8	9.8	14.8	35.1	35.1	
Cycle Q Clear(g_c), s	6.8	8.1	12.8	7.8	19.4	19.4	6.5	6.8	9.8	14.8	35.1	35.1	
Prop In Lane	1.00	4040	1.00	1.00	E40	0.08	1.00	000	1.00	1.00	004	0.96	
ane Grp Cap(c), veh/h		1048	457	270	542	561	270	999	561	264	624	551	
//C Ratio(X)	1.41	0.35	0.52	1.39	0.71	0.71	0.85	0.31	0.37	1.58	1.03	1.05	
vail Cap(c_a), veh/h	121	1052	458	270	561	581	270	999	561	264	624	551	
ICM 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	0.92	0.92	0.92	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/ve		27.7	29.4	46.1	30.9	30.9	45.5	28.3	23.7	42.6	32.5	32.5	
ncr Delay (d2), s/veh		0.9	4.2	197.3	7.2	7.0	20.3	0.2	0.6	279.2	45.3	50.9	
nitial Q Delay(d3),s/vel		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%),ve		3.5	5.2	10.6	9.0	9.3	3.5	2.9	3.6	26.8	22.2	20.5	
Jnsig. Movement Delay	•												
_nGrp Delay(d),s/veh		28.6	33.6	243.4	38.1	37.9	65.8	28.5	24.3	321.8	77.8	83.3	
_nGrp LOS	F	С	С	F	D	D	E	С	С	F	F	F	
Approach Vol, veh/h		777			1164			742			1639		
Approach Delay, s/veh		84.0			104.3			38.8			141.8		
Approach LOS		F			F			D			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc	1 12 0	35.8	12.0	40.2	11.0	36.8	19.0	33.2					
Change Period (Y+Rc),		6.3	* 4.2	* 5.1	* 4.2	* 6.3	* 4.2	5.1					
Max Green Setting (Gr		29.6	* 7.8	* 35	* 6.8	* 32	* 15	28.0					
Max Q Clear Time (g_c		14.8	8.5	37.1	8.8	21.4	16.8	11.8					
Green Ext Time (p_c), s	, .	3.9	0.0	0.0	0.0	4.1	0.0	3.4					
" '	3 0.0	0.3	0.0	0.0	0.0	4.1	0.0	J. 4					
Intersection Summary			400.0										
HCM 6th Ctrl Delay			103.6										
HCM 6th LOS			F										
Notes													

^{*} HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

	→	•	•	•	•	/
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	∱ }			^	ሻ	7
Traffic Volume (veh/h)	879	68	118	942	21	92
Future Volume (veh/h)	879	68	118	942	21	92
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.96	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approac				No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	955	74	128	1024	23	100
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	1401	109	166	2298	157	139
Arrive On Green	0.42	0.42	0.09	0.65	0.09	0.09
Sat Flow, veh/h	3423	258	1781	3647	1781	1585
Grp Volume(v), veh/h	510	519	128	1024	23	100
Grp Sat Flow(s), veh/h/li		1810	1781	1777	1781	1585
Q Serve(g_s), s	7.9	7.9	2.4	4.9	0.4	2.1
Cycle Q Clear(g_c), s	7.9	7.9	2.4	4.9	0.4	2.1
Prop In Lane		0.14	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		762	166	2298	157	139
V/C Ratio(X)	0.68	0.68	0.77	0.45	0.15	0.72
Avail Cap(c_a), veh/h	980	998	515	3457	945	841
HCM Platoon Ratio	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
Uniform Delay (d), s/vel	h 8.0	8.0	15.0	3.0	14.3	15.1
Incr Delay (d2), s/veh	1.3	1.2	7.4	0.1	0.4	6.7
Initial Q Delay(d3),s/vel		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),vel		1.8	1.1	0.0	0.2	0.9
Unsig. Movement Delay						
LnGrp Delay(d),s/veh	9.2	9.2	22.4	3.1	14.7	21.8
LnGrp LOS	3.2 A	Α.Σ	C	Α	В	C C
	1029		U	1152	123	
Approach Vol, veh/h						
Approach Delay, s/veh	9.2			5.3	20.5	
Approach LOS	Α			Α	С	
Timer - Assigned Phs	1	2				6
Phs Duration (G+Y+Rc)), s7.7	18.8				26.4
Change Period (Y+Rc),	s 4.5	4.5				4.5
Max Green Setting (Gm		18.7				33.0
Max Q Clear Time (g_c		9.9				6.9
Green Ext Time (p_c), s	, .	4.1				7.7
Intersection Summary						
			7.8			
HCM 6th Ctrl Delay						
HCM 6th LOS			Α			

	۶	→	•	•	•	•	•	†	/	>	ļ	✓	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻሻ	^	7	ች	^	7	ሻሻ	†		ሻ	^	7	
Traffic Volume (veh/h)	367	131	412	155	278	52	320	607	54	56	620	413	
Future Volume (veh/h)	367	131	412	155	278	52	320	607	54	56	620	413	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0_0	0	
Ped-Bike Adj(A_pbT)	1.00	· ·	0.97	1.00		0.95	1.00	J	0.98	1.00	· ·	0.98	
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	
Work Zone On Approac		No	1.00	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	399	142	448	168	302	57	348	660	59	61	674	449	
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	379	1027	445	186	992	421	362	1168	104	102	1091	476	
Arrive On Green	0.11	0.29	0.29	0.10	0.28	0.28	0.10	0.35	0.35	0.06	0.31	0.31	
Sat Flow, veh/h	3456	3554	1538	1781	3554	1508	3456	3292	294	1781	3554	1552	
	399	142	448	168	302	57	348	356	363	61	674	449	
Grp Volume(v), veh/h Grp Sat Flow(s),veh/h/l		1777	1538	1781	1777	1508	1728	1777	1809	1781	1777	1552	
		3.0	29.0	9.4	6.7	2.8	10.1	16.2	16.3	3.4	16.3	28.3	
Q Serve(g_s), s	11.0		29.0	9.4	6.7	2.8			16.3	3.4	16.3		
Cycle Q Clear(g_c), s		3.0			0.7		10.1	16.2			10.3	28.3	
Prop In Lane	1.00	1007	1.00	1.00	000	1.00	1.00	620	0.16	1.00	1001	1.00	
_ane Grp Cap(c), veh/h		1027	445	186	992	421	362	630	642	102	1091	476	
V/C Ratio(X)	1.05	0.14	1.01	0.90	0.30	0.14	0.96	0.56	0.57	0.60	0.62	0.94	
Avail Cap(c_a), veh/h	379	1027	445	186	1027	436	362	630	642	195	1098	480	
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/ve		26.4	35.7	44.4	28.5	27.1	44.7	26.1	26.1	46.2	29.7	33.9	
ncr Delay (d2), s/veh	60.8	0.1	44.6	38.5	0.2	0.2	37.0	1.2	1.2	2.1	1.0	27.1	
Initial Q Delay(d3),s/vel		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%),ve		1.2	15.8	6.0	2.8	1.0	6.0	6.7	6.9	1.5	6.8	13.7	
Unsig. Movement Delay	•		00.0	20.0	00.7	07.0	04.7	07.0	07.0	40.0	00.0	04.0	
LnGrp Delay(d),s/veh		26.5	80.3	82.9	28.7	27.3	81.7	27.3	27.3	48.3	30.8	61.0	
_nGrp LOS	<u> </u>	С	F	F	С	С	F	С	С	D	С	E	
Approach Vol, veh/h		989			527			1067			1184		
Approach Delay, s/veh		82.7			45.8			45.0			43.1		
Approach LOS		F			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc	•	34.5	15.0	35.8	16.0	33.5	10.2	40.6					
Change Period (Y+Rc)		5.5	4.5	5.0	5.0	5.5	4.5	5.0					
Max Green Setting (Gr		29.0	10.5	31.0	11.0	29.0	11.0	30.5					
Max Q Clear Time (g_c		31.0	12.1	30.3	13.0	8.7	5.4	18.3					
Green Ext Time (p_c), :		0.0	0.0	0.4	0.0	2.4	0.0	3.3					
" ,	S 0.0	0.0	0.0	0.4	0.0	2.4	0.0	ა.ა					
Intersection Summary			T A A										
HCM 6th Ctrl Delay			54.4										
HCM 6th LOS			D										
Notes													

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

Intersection						
Int Delay, s/veh	2.7					
•		14/55	NET	NDD	051	057
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	¥		^	7		
Traffic Vol, veh/h	0	167	718	0	0	445
Future Vol, veh/h	0	167	718	0	0	445
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	-	-	150	50	-
Veh in Median Storage	e, # 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	182	780	0	0	484
Maile =/N4in 4	N 41: 4		1-1-4		4-1-0	
	Minor1		Major1		Major2	
Conflicting Flow All	1264	780	0	0	780	0
Stage 1	780	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	187	395	-	-	837	-
Stage 1	452	-	-	-	-	-
Stage 2	620	-	_	_	_	_
Platoon blocked, %			_	_		_
Mov Cap-1 Maneuver	187	395	_	_	837	-
Mov Cap-1 Maneuver	187	-	_	_	-	_
Stage 1	452	-	_	_		-
_	620		_	-	_	_
Stage 2	020	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	21.6		0		0	
HCM LOS	C					
	3					
Minor Lane/Major Mvn	nt	NBT	NBRV		SBL	SBT
Capacity (veh/h)		-	-	395	837	-
HCM Lane V/C Ratio		-	-	0.46	-	-
HCM Control Delay (s)		-	-	21.6	0	-
HCM Lane LOS		-	-	С	Α	-
HCM 95th %tile Q(veh)	-	_	2.3	0	_
70417	/					

Intersection		
Intersection Delay, s/veh	10.1	
Intersection LOS	В	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	†	7	ሻ	†	7
Traffic Vol, veh/h	1	3	35	20	8	3	250	3	35	0	11	2
Future Vol, veh/h	1	3	35	20	8	3	250	3	35	0	11	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	3	38	22	9	3	272	3	38	0	12	2
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	1
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			3			3		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	3			3			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	3			3			1			1		
HCM Control Delay	7.8			8.7			10.7			7.7		
HCM LOS	Α			Α			В			Α		

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3	
Vol Left, %	100%	0%	0%	3%	65%	0%	0%	0%	
Vol Thru, %	0%	100%	0%	8%	26%	100%	100%	0%	
Vol Right, %	0%	0%	100%	90%	10%	0%	0%	100%	
Sign Control	Stop								
Traffic Vol by Lane	250	3	35	39	31	0	11	2	
LT Vol	250	0	0	1	20	0	0	0	
Through Vol	0	3	0	3	8	0	11	0	
RT Vol	0	0	35	35	3	0	0	2	
Lane Flow Rate	272	3	38	42	34	0	12	2	
Geometry Grp	7	7	7	7	7	7	7	7	
Degree of Util (X)	0.391	0.004	0.042	0.056	0.053	0	0.017	0.003	
Departure Headway (Hd)	5.176	4.676	3.975	4.781	5.655	4.999	4.999	4.297	
Convergence, Y/N	Yes								
Cap	688	756	888	753	637	0	718	835	
Service Time	2.962	2.461	1.759	2.487	3.361	2.713	2.713	2.011	
HCM Lane V/C Ratio	0.395	0.004	0.043	0.056	0.053	0	0.017	0.002	
HCM Control Delay	11.3	7.5	6.9	7.8	8.7	7.7	7.8	7	
HCM Lane LOS	В	Α	Α	Α	Α	N	Α	Α	
HCM 95th-tile Q	1.9	0	0.1	0.2	0.2	0	0.1	0	

Intersection												
Intersection Delay, s/ve	MQEE											
Intersection Delay, sive	enoo.o F											
IIILEISECLIOII LOS	Г											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT		NBR		
Lane Configurations		4			4			₽			ሻ	
Traffic Vol, veh/h	0	1	7	111	2	95	7	669		238		
Future Vol, veh/h	0	1	7	111	2	95	7	669		238		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0	.92	.92 0.92	.92 0.92 0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2		2		
Mvmt Flow	0	1	8	121	2	103	8	727	259		0	0 499
Number of Lanes	0	1	0	0	1	0	1	1	0		1	1 1
Approach		EB		WB			NB				SB	
Opposing Approach		WB		EB			SB				NB	
Opposing Lanes		1		1			2				2	
Conflicting Approach Lo	eft	SB		NB			EB				WB	
Conflicting Lanes Left		2		2			1				1	
Conflicting Approach R	ight	NB		SB			WB			E	В	В
Conflicting Lanes Right		2		2			1				1	
HCM Control Delay		11.8		16.1			300.9			36.2	2	2
HCM LOS		В		С			F			Е		
Lane	N	NBLn11	NBLn2	EBLn1V	VBLn1	SBLn1	SBLn2					
Vol Left, %		100%	0%	0%	53%	0%	0%					
Vol Thru, %		0%	74%	12%	1%	100%	100%					
Vol Right, %		0%	26%	88%	46%	0%	0%					
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane		7	907	8	208	0	461					
LT Vol		7	0	0	111	0	0					
Through Vol		0	669	1	2	0	459					
RT Vol		0	238	7	95	0	2					
Lane Flow Rate		8	986	9	226	0	501					
Geometry Grp		7	7	2	2	7	7					
Degree of Util (X)		0.014	1.622	0.018	0.416	0	0.845					
Departure Headway (H	d)	6.618	5.922		7.699	6.785	6.782					
Convergence, Y/N	,	Yes	Yes	Yes	Yes	Yes	Yes					
Сар		544	621	418	470	0	536					
Service Time			3.625	6.607			4.482					
HCM Lane V/C Ratio				0.022			0.935					

36.2

Ε

8.8

9.5

Ν

9.4 303.2

0 54.1

11.8

В

0.1

16.1

2

HCM Control Delay

HCM Lane LOS

HCM 95th-tile Q

Movement EBL EBL EBR WBL WBR NBL NBT NBR SBL SBR Lane Configurations 7 7 165 529 45 3 240 8 Future Volume (veh/h) 13 33 81 32 7 7 165 529 45 3 240 8	
Traffic Volume (veh/h) 13 33 81 32 7 7 165 529 45 3 240 8	
Traffic Volume (veh/h) 13 33 81 32 7 7 165 529 45 3 240 8	
Future Volume (veh/h) 13 33 81 32 7 7 165 529 45 3 240 8	
Initial Q (Qb), veh 0 0 0 0 0 0 0 0 0 0	
Ped-Bike Adj(A_pbT) 0.99 0.97 0.99 0.98 1.00 0.96 1.00 0.96	
Parking Bus, Adj 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	
Work Zone On Approach No No No No	
Adj Sat Flow, veh/h/ln 1870 1870 1870 1870 1870 1870 1870 1870	
Adj Flow Rate, veh/h 14 36 88 35 8 8 179 575 49 3 261 9	
Peak Hour Factor 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 2 2 2 2 2 2	
Cap, veh/h 515 94 230 305 69 36 301 1099 93 121 811 28	
Arrive On Green 0.20 0.20 0.20 0.20 0.20 0.20 0.17 0.33 0.33 0.07 0.23 0.23	
Sat Flow, veh/h 1387 472 1154 628 347 181 1781 3303 281 1781 3499 120	
Grp Volume(v), veh/h 14 0 124 51 0 0 179 309 315 3 132 138	
Grp Sat Flow(s),veh/h/ln1387 0 1627 1156 0 0 1781 1777 1807 1781 1777 1842	
Q Serve(g_s), s 0.0 0.0 2.2 0.1 0.0 0.0 3.1 4.7 4.8 0.1 2.1 2.1	
Cycle Q Clear(g_c), s 0.2 0.0 2.2 2.3 0.0 0.0 3.1 4.7 4.8 0.1 2.1 2.1	
Prop In Lane 1.00 0.71 0.69 0.16 1.00 0.16 1.00 0.07	
Lane Grp Cap(c), veh/h 515 0 324 410 0 0 301 591 601 121 412 427	
V/C Ratio(X) 0.03 0.00 0.38 0.12 0.00 0.00 0.60 0.52 0.52 0.02 0.32 0.32	
Avail Cap(c_a), veh/h 1412 0 1375 1295 0 0 872 2557 2600 502 2188 2268	
HCM Platoon Ratio 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	
Upstream Filter(I) 1.00 0.00 1.00 1.00 0.00 1.00 1.00 1.0	
Uniform Delay (d), s/veh 10.9 0.0 11.7 11.2 0.0 0.0 12.9 9.1 9.1 14.7 10.7 10.8	
Incr Delay (d2), s/veh 0.0 0.0 0.7 0.1 0.0 0.0 1.9 0.7 0.7 0.1 0.4 0.4	
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.	
%ile BackOfQ(50%),veh/lr0.1 0.0 0.7 0.3 0.0 0.0 1.0 1.2 1.2 0.0 0.6 0.6	
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh 10.9 0.0 12.4 11.3 0.0 0.0 14.8 9.8 9.8 14.8 11.2 11.2	
LnGrp LOS B A B B A A B B B B	
Approach Vol, veh/h 138 51 803 273	
Approach Delay, s/veh 12.3 11.3 10.9 11.2	
Approach LOS B B B	
Timer - Assigned Phs 1 2 4 5 6 8	
Phs Duration (G+Y+Rc), s6.8 15.7 11.2 10.2 12.3 11.2	
Change Period (Y+Rc), s 4.5 4.5 4.5 4.5 4.5	
Max Green Setting (Gmax9, 5 48.5 28.5 16.5 41.5 28.5	
Max Q Clear Time (g_c+l12),1s 6.8 4.2 5.1 4.1 4.3	
Green Ext Time (p_c), s 0.0 3.9 0.8 0.3 1.5 0.2	
Intersection Summary	
HCM 6th Ctrl Delay 11.2	
HCM 6th LOS B	

Intersection						
Intersection Delay, s/v	/e 2 16.6					
Intersection LOS	F					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			4		ř	f)		Ĭ	î,		
Traffic Vol, veh/h	1	1	5	102	8	87	13	834	109	0	583	0	
Future Vol, veh/h	1	1	5	102	8	87	13	834	109	0	583	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	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	1	1	5	111	9	95	14	907	118	0	634	0	
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0	
Approach	EB			WB			NB			SB			
Opposing Approach	WB			EB			SB			NB			
Opposing Lanes	1			1			2			2			
Conflicting Approach Le	eft SB			NB			EB			WB			
Conflicting Lanes Left	2			2			1			1			
Conflicting Approach R	igh N B			SB			WB			EB			
Conflicting Lanes Right	2			2			1			1			
HCM Control Delay	12.4			16.4			340.3			83.9			
HCM LOS	В			C			F			F			

Lane	NBLn11	NBLn2	EBLn1V	VBLn1	SBLn1	SBLn2	
Vol Left, %	100%	0%	14%	52%	0%	0%	
Vol Thru, %	0%	88%	14%	4%	100%	100%	
Vol Right, %	0%	12%	71%	44%	0%	0%	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	13	943	7	197	0	583	
LT Vol	13	0	1	102	0	0	
Through Vol	0	834	1	8	0	583	
RT Vol	0	109	5	87	0	0	
Lane Flow Rate	14	1025	8	214	0	634	
Geometry Grp	7	7	2	2	7	7	
Degree of Util (X)	0.026	1.715	0.016	0.409	0	1.067	
Departure Headway (Hd)	6.788	6.196	9.243	8.01	6.845	6.845	
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	
Cap	531	595	390	452	0	532	
Service Time	4.488	3.896	7.243	6.01	4.545	4.545	
HCM Lane V/C Ratio	0.026	1.723	0.021	0.473	0		
HCM Control Delay	9.7	344.9	12.4	16.4	9.5	83.9	
HCM Lane LOS	Α	F	В	С	N	F	
HCM 95th-tile Q	0.1	58.3	0	2	0	16.9	

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Movement E	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	Ť	₽		ነ	₽		ነ	∱ ∱		7	∱ ∱		
Traffic Volume (veh/h)	6	72	63	146	193	153	95	586	288	58	300	9	
Future Volume (veh/h)	6	72	63	146	193	153	95	586	288	58	300	9	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
, ,	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.97	
• •	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No			No			No			No		
	870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	7	78	68	159	210	166	103	637	313	63	326	10	
	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	23	156	136	205	262	207	164	821	403	132	1192	36	
	0.01	0.17	0.17	0.12	0.27	0.27	0.09	0.36	0.36	0.07	0.34	0.34	
Sat Flow, veh/h 1	781	916	798	1781	962	760	1781	2297	1129	1781	3517	108	
Grp Volume(v), veh/h	7	0	146	159	0	376	103	493	457	63	164	172	
Grp Sat Flow(s), veh/h/ln1	781	0	1714	1781	0	1722	1781	1777	1649	1781	1777	1848	
Q Serve(g_s), s	0.2	0.0	4.9	5.5	0.0	12.9	3.5	15.7	15.7	2.2	4.3	4.3	
Cycle Q Clear(g_c), s	0.2	0.0	4.9	5.5	0.0	12.9	3.5	15.7	15.7	2.2	4.3	4.3	
Prop In Lane 1	1.00		0.47	1.00		0.44	1.00		0.68	1.00		0.06	
Lane Grp Cap(c), veh/h	23	0	292	205	0	469	164	635	589	132	602	626	
	0.31	0.00	0.50	0.77	0.00	0.80	0.63	0.78	0.78	0.48	0.27	0.27	
Avail Cap(c_a), veh/h	210	0	634	491	0	908	378	881	817	266	769	800	
	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	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh 3	31.1	0.0	23.9	27.3	0.0	21.5	27.8	18.2	18.2	28.2	15.3	15.3	
Incr Delay (d2), s/veh	7.4	0.0	1.3	6.1	0.0	3.2	3.9	3.0	3.2	2.7	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/l		0.0	2.0	2.6	0.0	5.3	1.6	6.0	5.6	0.9	1.5	1.6	
Unsig. Movement Delay,	s/veh												
	38.5	0.0	25.2	33.4	0.0	24.7	31.7	21.1	21.3	30.9	15.5	15.5	
LnGrp LOS	D	Α	С	С	Α	С	С	С	С	С	В	В	
Approach Vol, veh/h		153			535			1053			399		
Approach Delay, s/veh		25.9			27.3			22.2			18.0		
Approach LOS		С			С			С			В		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc),	s9.2	27.2	11.8	15.3	10.4	26.0	5.3	21.8					
Change Period (Y+Rc), s		4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax	x9,,5s	31.5	17.5	23.5	13.5	27.5	7.5	33.5					
Max Q Clear Time (g_c+l	14,2s	17.7	7.5	6.9	5.5	6.3	2.2	14.9					
Green Ext Time (p_c), s	0.0	5.0	0.3	0.7	0.1	1.7	0.0	2.4					
Intersection Summary													
HCM 6th Ctrl Delay			23.0										
HCM 6th LOS			С										

Intersection													
Intersection Delay, s/ve	1 91.3												
Intersection LOS	F												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			4		ች		7	ሻ	ĵ.		
Traffic Vol, veh/h	0	0	6	57	2	2	9	968	65	2	501	3	
Future Vol, veh/h	0	0	6	57	2	2	9	968	65	2	501	3	
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	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	0	7	62	2	2	10	1052	71	2	545	3	
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	0	
Approach		EB		WB			NB			SB			
Opposing Approach		WB		EB			SB			NB			
Opposing Lanes		1		1			2			3			
Conflicting Approach Le	eft	SB		NB			EB			WB			
Conflicting Lanes Left		2		3			1			1			
Conflicting Approach R		NB		SB			WB			EB			
Conflicting Lanes Right		3		2			1			1			
HCM Control Delay		10.9		13.2			266.3			60.6			
HCM LOS		В		В			F			F			
Lane	١	NBLn11	NBLn21	NBLn3	EBLn1V	VBLn1	SBLn1	SBLn2					
Vol Left, %		100%	0%	0%	0%	93%	100%	0%					
Vol Thru, %		0%	100%	0%	0%	3%	0%	99%					
Vol Right, %		0%	0%	100%	100%	3%	0%	1%					
Sign Control		Stop	Stop	Stop	Stop	Stop	Stop	Stop					

Movement WBL WBR NBT NBR SBL SE Lane Configurations Traffic Volume (veh/h) 87 20 1336 161 29 95 Future Volume (veh/h) 87 20 1336 161 29 95 Initial Q (Qb), veh 0 0 0 0 0 0 0 Ped-Bike Adj(A_pbT) 1.00
Lane Configurations Image: Configuration of the properties of
Traffic Volume (veh/h) 87 20 1336 161 29 98 Future Volume (veh/h) 87 20 1336 161 29 98 Initial Q (Qb), veh 0 0 0 0 0 0 Ped-Bike Adj(A_pbT) 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 Work Zone On Approach No <
Future Volume (veh/h) 87 20 1336 161 29 98 Initial Q (Qb), veh 0 1 0
Initial Q (Qb), veh 0 0 0 0 0 Ped-Bike Adj(A_pbT) 1.00 1.00 1.00 1.00 1.00 Parking Bus, Adj 1.00
Ped-Bike Adj(A_pbT) 1.00 1.00 0.97 1.00 Parking Bus, Adj 1.00 <
Parking Bus, Adj 1.00 1.0
Work Zone On Approach No 187
Adj Sat Flow, veh/h/ln 1870 <
Adj Flow Rate, veh/h 95 22 1452 175 32 107 Peak Hour Factor 0.92
Peak Hour Factor 0.92 0.93 0.73 0.73 0.73 0.73 0.7
Percent Heavy Veh, % 2 2 2 2 2 Cap, veh/h 139 124 1768 211 53 247 Arrive On Green 0.08 0.08 0.55 0.55 0.03 0.7 Sat Flow, veh/h 1781 1585 3279 380 1781 364
Cap, veh/h 139 124 1768 211 53 247 Arrive On Green 0.08 0.08 0.55 0.55 0.03 0.7 Sat Flow, veh/h 1781 1585 3279 380 1781 364
Arrive On Green 0.08 0.08 0.55 0.55 0.03 0.7 Sat Flow, veh/h 1781 1585 3279 380 1781 364
Sat Flow, veh/h 1781 1585 3279 380 1781 364
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Grp Volume(v), veh/h 95 22 803 824 32 107
Grp Sat Flow(s), veh/h/ln1781 1585 1777 1789 1781 177
Q Serve(g_s), s 2.1 0.5 14.7 15.2 0.7 5
Cycle Q Clear(g_c), s 2.1 0.5 14.7 15.2 0.7 5
Prop In Lane 1.00 1.00 0.21 1.00
Lane Grp Cap(c), veh/h 139 124 986 993 53 247
V/C Ratio(X) 0.68 0.18 0.81 0.83 0.60 0.4
Avail Cap(c_a), veh/h 805 716 1060 1067 200 291
HCM Platoon Ratio 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
Uniform Delay (d), s/veh 18.0 17.3 7.2 7.4 19.2 2
Incr Delay (d2), s/veh 5.7 0.7 4.7 5.3 10.4 0
Initial Q Delay(d3),s/veh 0.0 0.0 0.0 0.0 0.0 0
%ile BackOfQ(50%),veh/ln1.0 0.2 3.7 4.0 0.4 0
Unsig. Movement Delay, s/veh
LnGrp Delay(d),s/veh 23.7 17.9 11.9 12.7 29.6 2
Lingrip Delay(d),5/Veril 23.7 17.9 11.9 12.7 29.0 2 Lingrip LOS C B B B C
•
Approach Vol, veh/h 117 1627 11
Approach Delay, s/veh 22.6 12.3 3
Approach LOS C B
Timer - Assigned Phs 1 2
Phs Duration (G+Y+Rc), s5.7 26.7 32
Change Period (Y+Rc), s 4.5 4.5 4.5
Max Green Setting (Gmax), \$ 23.9 32
Max Q Clear Time (g_c+l12),7s 17.2 7
Green Ext Time (p_c), s 0.0 5.0 8
W = 7 ²
Intersection Summary
HCM 6th Ctrl Delay 9.3
HCM 6th LOS A

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4		ሻ	स	7	*	^			ΦÞ		
Traffic Volume (veh/h)	23	0	52	4	0	0	86	1169	0	0	606	8	
Future Volume (veh/h)	23	0	52	4	0	0	86	1169	0	0	606	8	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00	*	1.00	1.00		1.00	1.00		0.96	
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	
Work Zone On Approac		No	1.00	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	0	0	1870	1870	
Adj Flow Rate, veh/h	25	0	57	4	0	0	93	1271	0	0	659	9	
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	0.52	0.52	2	2	
Cap, veh/h	52	0	118	16	0	7	118	1876	0	0	1228	17	
Arrive On Green	0.11	0.00	0.11	0.00	0.00	0.00	0.07	0.53	0.00	0.00	0.34	0.34	
Sat Flow, veh/h	471	0.00	1075	3563	0.00	1585	1781	3647	0.00	0.00	3680	49	
Grp Volume(v), veh/h	82	0	0	4704	0	0	93	1271	0	0	326	342	
Grp Sat Flow(s),veh/h/l		0	0	1781	0	1585	1781	1777	0	0	1777	1859	
Q Serve(g_s), s	1.9	0.0	0.0	0.0	0.0	0.0	1.9	9.9	0.0	0.0	5.6	5.6	
Cycle Q Clear(g_c), s	1.9	0.0	0.0	0.0	0.0	0.0	1.9	9.9	0.0	0.0	5.6	5.6	
Prop In Lane	0.30		0.70	1.00		1.00	1.00		0.00	0.00		0.03	
Lane Grp Cap(c), veh/h		0	0	16	0	7	118	1876	0	0	608	636	
V/C Ratio(X)	0.48	0.00	0.00	0.26	0.00	0.00	0.79	0.68	0.00	0.00	0.54	0.54	
Avail Cap(c_a), veh/h	738	0	0	1465	0	652	213	2639	0	0	895	937	
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	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	
Uniform Delay (d), s/vel		0.0	0.0	18.7	0.0	0.0	17.3	6.5	0.0	0.0	10.0	10.0	
Incr Delay (d2), s/veh	2.1	0.0	0.0	8.5	0.0	0.0	11.2	0.4	0.0	0.0	0.7	0.7	
Initial Q Delay(d3),s/vel	n 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%),ve	h/ln0.7	0.0	0.0	0.0	0.0	0.0	1.0	1.7	0.0	0.0	1.5	1.6	
Unsig. Movement Delay	y, s/veh	l											
LnGrp Delay(d),s/veh	17.9	0.0	0.0	27.2	0.0	0.0	28.5	7.0	0.0	0.0	10.7	10.7	
LnGrp LOS	В	Α	Α	С	Α	Α	С	Α	Α	Α	В	В	
Approach Vol, veh/h		82			4			1364			668		
Approach Delay, s/veh		17.9			27.2			8.4			10.7		
Approach LOS		В			С			Α			В		
Timer - Assigned Phs		2		4	5	6		8					
Phs Duration (G+Y+Rc)), s	24.4		8.6	7.0	17.4		4.7					
Change Period (Y+Rc),	S	4.5		4.5	4.5	4.5		4.5					
Max Green Setting (Gm		28.0		18.0	4.5	19.0		15.5					
Max Q Clear Time (g_c		11.9		3.9	3.9	7.6		2.0					
Green Ext Time (p_c), s		8.0		0.3	0.0	2.9		0.0					
Intersection Summary													
HCM 6th Ctrl Delay			9.6										
HCM 6th LOS			Α										
Notes													

User approved volume balancing among the lanes for turning movement.

	ᄼ	→	•	•	•	•	4	†	/	-	↓	✓	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ች	^	7	ሻሻ	ΦÞ		ሻሻ	^	7	*	† }		
Traffic Volume (veh/h)	334	685	273	318	317	68	258	656	438	207	382	190	
Future Volume (veh/h)	334	685	273	318	317	68	258	656	438	207	382	190	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00	•	0.98	1.00	•	1.00	1.00	•	0.98	
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	
Work Zone On Approac		No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	363	745	297	346	345	74	280	713	476	225	415	207	
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	264	1116	486	380	803	170	301	995	618	175	667	329	
Arrive On Green	0.15	0.31	0.31	0.11	0.28	0.28	0.09	0.28	0.28	0.10	0.29	0.29	
Sat Flow, veh/h	1781	3554	1548	3456	2908	616	3456	3554	1585	1781	2293	1130	
Grp Volume(v), veh/h	363	745	297	346	209	210	280	713	476	225	320	302	
Grp Sat Flow(s), veh/h/l		1777	1548	1728	1777	1747	1728	1777	1585	1781	1777	1646	
Q Serve(g_s), s	14.8	18.2	16.3	9.9	9.7	9.9	8.0	18.1	26.2	9.8	15.6	15.9	
Cycle Q Clear(g_c), s	14.8	18.2	16.3	9.9	9.7	9.9	8.0	18.1	26.2	9.8	15.6	15.9	
Prop In Lane	1.00	10.2	1.00	1.00	9.1	0.35	1.00	10.1	1.00	1.00	15.0	0.69	
•		1116	486	380	490	482	301	995	618	175	517	479	
Lane Grp Cap(c), veh/h												0.63	
V/C Ratio(X)	1.38	0.67	0.61	0.91	0.43	0.44	0.93	0.72	0.77	1.29	0.62		
Avail Cap(c_a), veh/h	264	1116	486	380	508	500	301	995	618	175	519	481	
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	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/ve		29.8	29.1	44.0	29.7	29.8	45.4	32.4	26.6	45.1	30.7	30.8	
Incr Delay (d2), s/veh		3.2	5.6	24.3	2.6	2.8	33.9	2.7	6.3	166.0	2.8	3.2	
Initial Q Delay(d3),s/vel		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%),ve		7.9	6.6	5.4	4.3	4.4	4.8	7.9	10.5	12.3	6.9	6.5	
Unsig. Movement Delay			24.0	00.0	20.2	20.0	70.0	25.4	20.0	044.4	22.4	24.0	
LnGrp Delay(d),s/veh		32.9	34.8	68.3	32.3	32.6	79.2	35.1	32.9		33.4	34.0	
LnGrp LOS	F	С	С	E	<u>C</u>	С	E	D	С	F	С	С	
Approach Vol, veh/h		1405			765			1469			847		
Approach Delay, s/veh		85.3			48.7			42.8			80.8		
Approach LOS		F			D			D			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), \$5.2	37.7	12.9	34.2	19.0	33.9	14.0	33.1					
Change Period (Y+Rc),		6.3	* 4.2	* 5.1	* 4.2	* 6.3	* 4.2	5.1					
Max Green Setting (Gr		31.4	* 8.7	* 29	* 15	* 29	* 9.8	28.0					
Max Q Clear Time (g_c		20.2	10.0	17.9	16.8	11.9	11.8	28.2					
Green Ext Time (p_c),		6.0	0.0	4.1	0.0	2.7	0.0	0.0					
Intersection Summary													
HCM 6th Ctrl Delay			64.3										
HCM 6th LOS			E										
Notes													

^{*} HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

	• >	*	•	•	~	/
Movement EB	BT EE	BR	WBL	WBT	NBL	NBR
Lane Configurations 🛉			ች	^	ች	7
Traffic Volume (veh/h) 121		29	105	695	16	119
Future Volume (veh/h) 121		29	105	695	16	119
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		.97	1.00		1.00	1.00
Parking Bus, Adj 1.0		.00	1.00	1.00	1.00	1.00
Work Zone On Approach N				No	No	
Adj Sat Flow, veh/h/ln 187		370	1870	1870	1870	1870
Adj Flow Rate, veh/h 131		32	114	755	17	129
Peak Hour Factor 0.9		.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h 190		46	150	2527	195	173
Arrive On Green 0.5			0.08	0.71	0.11	0.11
Sat Flow, veh/h 363			1781	3647	1781	1585
Grp Volume(v), veh/h 66		88	114	755	17	129
Grp Sat Flow(s), veh/h/ln177			1781	1777	1781	1585
Q Serve(g_s), s 13		3.7	3.1	3.9	0.4	4.0
Cycle Q Clear(g_c), s 13		3.7	3.1	3.9	0.4	4.0
Prop In Lane		.05	1.00		1.00	1.00
Lane Grp Cap(c), veh/h 95		94	150	2527	195	173
V/C Ratio(X) 0.6	69 O.	.69	0.76	0.30	0.09	0.75
Avail Cap(c_a), veh/h 179	93 18	368	552	5005	730	649
HCM Platoon Ratio 1.0	00 1.	.00	1.00	1.00	1.00	1.00
Upstream Filter(I) 1.0		.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh 8		8.5	22.4	2.7	20.0	21.6
		0.9	7.6	0.1	0.2	6.2
Initial Q Delay(d3),s/veh 0		0.0	0.0	0.0	0.2	0.2
%ile BackOfQ(50%),veh/lr8		3.6	1.5	0.0	0.0	1.6
		J.U	1.5	0.5	U.Z	1.0
Unsig. Movement Delay, s/		0.4	20.4	0.7	20.2	27.0
· • • • • • • • • • • • • • • • • • • •		9.4	30.1	2.7	20.2	27.8
	A	Α	С	A	С	С
Approach Vol, veh/h 134				869	146	
11 7	.4			6.3	27.0	
Approach LOS	Α			Α	С	
Timer - Assigned Phs	1	2				6
	7 04					
Phs Duration (G+Y+Rc), s8		1.4				40.1
Change Period (Y+Rc), s 4		4.5				4.5
Max Green Setting (Gmat/5)		0.5				70.5
Max Q Clear Time (g_c+l15)		5.7				5.9
Green Ext Time (p_c), s 0	.2 11	1.1				5.8
Intersection Summary						
HCM 6th Ctrl Delay			9.4			
HCM 6th LOS						
HOW OUI LOS			Α			

Movement EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBR Lane Configurations 77	
Traffic Volume (veh/h) 506 292 359 116 158 31 346 676 126 88 416 225 Future Volume (veh/h) 506 292 359 116 158 31 346 676 126 88 416 225 Initial Q (Qb), veh 0 0 0 0 0 0 0 0 0 0 0	
Traffic Volume (veh/h) 506 292 359 116 158 31 346 676 126 88 416 225 Future Volume (veh/h) 506 292 359 116 158 31 346 676 126 88 416 225 Initial Q (Qb), veh 0 0 0 0 0 0 0 0 0 0 0	
Initial Q (Qb), veh 0 0 0 0 0 0 0 0 0	
$\cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot$	
Ped-Bike Adj(A_pbT) 1.00 0.97 1.00 0.95 1.00 0.98 1.00 0.95	
Parking Bus, Adj 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	
Work Zone On Approach No No No No	
Adj Sat Flow, veh/h/ln 1870 1870 1870 1870 1870 1870 1870 1870	
Adj Flow Rate, veh/h 550 317 390 126 172 34 376 735 137 96 452 245	
Peak Hour Factor 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 2 2 2 2 2 2	
Cap, veh/h 663 1095 475 158 708 301 460 926 173 128 886 377	
Arrive On Green 0.19 0.31 0.31 0.09 0.20 0.20 0.13 0.31 0.07 0.25 0.25	
Sat Flow, veh/h 3456 3554 1544 1781 3554 1513 3456 2981 555 1781 3554 1513	
Grp Volume(v), veh/h 550 317 390 126 172 34 376 438 434 96 452 245	
Grp Sat Flow(s),veh/h/ln1728 1777 1544 1781 1777 1513 1728 1777 1760 1781 1777 1513	
Q Serve(g_s), s 13.5 6.0 20.7 6.1 3.6 1.6 9.3 19.9 19.9 4.7 9.7 12.8	
Cycle Q Clear(g_c), s 13.5 6.0 20.7 6.1 3.6 1.6 9.3 19.9 19.9 4.7 9.7 12.8	
Prop In Lane 1.00 1.00 1.00 1.00 0.32 1.00 1.00	
Lane Grp Cap(c), veh/h 663 1095 475 158 708 301 460 552 547 128 886 377	
V/C Ratio(X) 0.83 0.29 0.82 0.80 0.24 0.11 0.82 0.79 0.79 0.75 0.51 0.65	
Avail Cap(c_a), veh/h 861 1497 650 303 1195 509 677 720 713 252 1248 531	
HCM Platoon Ratio 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	
Upstream Filter(I) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	
Uniform Delay (d), s/veh 34.3 23.2 28.3 39.5 29.8 29.0 37.2 27.8 27.8 40.2 28.5 29.7	
Incr Delay (d2), s/veh 5.7 0.2 6.5 3.5 0.2 0.2 3.1 4.6 4.7 3.3 0.5 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.	
%ile BackOfQ(50%),veh/lr5.9 2.4 8.0 2.8 1.5 0.6 4.0 8.6 8.5 2.1 4.0 4.6	
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh 40.0 23.4 34.8 42.9 30.0 29.2 40.3 32.4 32.5 43.5 29.0 31.6	
LnGrp LOS D C C D C C D C C	
Approach Vol, veh/h 1257 332 1248 793	
Approach Delay, s/veh 34.2 34.8 34.8 31.5	
Approach LOS C C C	
Timer - Assigned Phs 1 2 3 4 5 6 7 8	
Phs Duration (G+Y+Rc), \$2.3 32.7 16.2 27.0 21.9 23.1 10.8 32.4	
Change Period (Y+Rc), s 4.5 5.5 4.5 5.0 5.0 5.5 4.5 5.0	
Max Green Setting (Gmax, 3.2 17.3 31.0 22.0 29.7 12.5 35.8	
Max Q Clear Time (g_c+l18,1s 22.7 11.3 14.8 15.5 5.6 6.7 21.9	
Green Ext Time (p_c), s 0.1 3.6 0.4 3.3 1.4 1.3 0.0 4.5	
Intersection Summary	
HCM 6th Ctrl Delay 33.9	
HCM 6th LOS C	

ATTACHMENT G

EXISTING + CUMULATIVE PROJECTS + PROJECT (NO MAGNOLIA AVENUE EXTENSION – PROHIBITED SOUTHBOUND LEFT-TURNS FROM CUYAMACA STREET) MITIGATED PEAK HOUR INTERSECTION AND ARTERIAL ANALYSIS WORKSHEETS

	۶	→	•	•	←	•	1	†	~	/	+	✓
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	ተኈ		*	∱ ∱	
Traffic Volume (veh/h)	0	1	12	233	0	46	3	326	68	0	891	0
Future Volume (veh/h)	0	1	12	233	0	46	3	326	68	0	891	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	4.00	1.00	1.00	4.00	1.00	1.00	4.00	0.97	1.00	4.00	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
Work Zone On Approach	4070	No	4070	4070	No	4070	4070	No	4070	4070	No	4070
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1	13	253	0	50	3	354	74	0	968	0 00
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 32	2 422	481	2	2 66	2	2 1557	2	2	1560	2
Cap, veh/h Arrive On Green	0.00	0.28	0.28	0.28	0.00	0.28	0.00	0.53	321 0.53	0.00	0.44	0.00
Sat Flow, veh/h	0.00	114	1484	1162	21	234	1781	2918	602	1781	3647	0.00
	0											
Grp Volume(v), veh/h	0	0	14 1598	303 1417	0	0	3 1701	214 1777	214 1744	0 1781	968 1777	0
Grp Sat Flow(s),veh/h/ln	0.0	0.0	0.3	8.3	0.0	0.0	1781 0.1	2.8	2.9	0.0	9.2	0.0
Q Serve(g_s), s	0.0	0.0	0.3	8.6	0.0	0.0	0.1	2.8	2.9	0.0	9.2	0.0
Cycle Q Clear(g_c), s Prop In Lane	0.00	0.0	0.93	0.83	0.0	0.0	1.00	2.0	0.35	1.00	9.2	0.00
Lane Grp Cap(c), veh/h	0.00	0	454	553	0	0.17	6	948	930	4	1560	0.00
V/C Ratio(X)	0.00	0.00	0.03	0.55	0.00	0.00	0.51	0.23	0.23	0.00	0.62	0.00
Avail Cap(c_a), veh/h	0.00	0.00	1384	1381	0.00	0.00	162	1863	1828	162	3726	0.00
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)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	11.3	14.3	0.0	0.0	21.8	5.4	5.4	0.0	9.5	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.8	0.0	0.0	56.2	0.1	0.1	0.0	0.4	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	0.0	0.0	0.1	2.5	0.0	0.0	0.1	0.7	0.7	0.0	2.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	11.4	15.2	0.0	0.0	78.1	5.5	5.6	0.0	9.9	0.0
LnGrp LOS	Α	Α	В	В	Α	Α	Е	Α	Α	Α	Α	Α
Approach Vol, veh/h		14			303			431			968	
Approach Delay, s/veh		11.4			15.2			6.1			9.9	
Approach LOS		В			В			Α			Α	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	27.4		16.5	4.1	23.3		16.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	46.0		38.0	4.0	46.0		38.0				
Max Q Clear Time (g_c+l1), s	0.0	4.9		2.3	2.1	11.2		10.6				
Green Ext Time (p_c), s	0.0	2.7		0.0	0.0	8.0		2.0				
Intersection Summary												
			0.0									
HCM 6th Ctrl Delay			9.9									
HCM 6th LOS			Α									

	۶	→	•	•	←	4	1	†	~	/	†	✓
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	ተኈ		ሻ	∱ ∱	
Traffic Volume (veh/h)	0	1	7	264	4	45	5	358	48	0	1148	1
Future Volume (veh/h)	0	1	7	264	4	45	5	358	48	0	1148	1
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		0.98	1.00		0.99	1.00		0.99
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1	8	287	4	49	5	389	52	0	1248	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	0	53	427	473	5	61	10	1761	234	3	1757	1
Arrive On Green	0.00	0.30	0.30	0.30	0.30	0.30	0.01	0.56	0.56	0.00	0.48	0.48
Sat Flow, veh/h	0	179	1429	1189	17	203	1781	3151	418	1781	3644	3
Grp Volume(v), veh/h	0	0	9	340	0	0	5	218	223	0	609	640
Grp Sat Flow(s),veh/h/ln	0	0	1608	1408	0	0	1781	1777	1792	1781	1777	1870
Q Serve(g_s), s	0.0	0.0	0.2	12.4	0.0	0.0	0.2	3.5	3.5	0.0	15.1	15.1
Cycle Q Clear(g_c), s	0.0	0.0	0.2	12.6	0.0	0.0	0.2	3.5	3.5	0.0	15.1	15.1
Prop In Lane	0.00		0.89	0.84		0.14	1.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	0	0	480	539	0	0	10	993	1002	3	857	901
V/C Ratio(X)	0.00	0.00	0.02	0.63	0.00	0.00	0.53	0.22	0.22	0.00	0.71	0.71
Avail Cap(c_a), veh/h	0	0	1062	1055	0	0	127	1490	1503	127	1490	1568
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)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	13.9	18.3	0.0	0.0	27.8	6.2	6.2	0.0	11.4	11.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.2	0.0	0.0	38.3	0.1	0.1	0.0	1.1	1.1
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	0.0	0.0	0.1	3.9	0.0	0.0	0.2	1.0	1.0	0.0	4.9	5.1
Unsig. Movement Delay, s/veh		0.0	40.0	40.5	0.0	0.0	00.4	0.0	0.0	0.0	10.5	40.5
LnGrp Delay(d),s/veh	0.0	0.0	13.9	19.5	0.0	0.0	66.1	6.3	6.3	0.0	12.5	12.5
LnGrp LOS	Α	A	В	В	A	A	E	A	A	Α	B	В
Approach Vol, veh/h		9			340			446			1249	
Approach Delay, s/veh		13.9			19.5			7.0			12.5	
Approach LOS		В			В			Α			В	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	35.3		20.7	4.3	31.0		20.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	47.0		37.0	4.0	47.0		37.0				
Max Q Clear Time (g_c+l1), s	0.0	5.5		2.2	2.2	17.1		14.6				
Green Ext Time (p_c), s	0.0	2.8		0.0	0.0	9.9		2.2				
Intersection Summary												
HCM 6th Ctrl Delay			12.5									
HCM 6th LOS			В									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		7	ħβ		*	∱ ∱	
Traffic Volume (veh/h)	0	0	11	93	1	1	1	420	32	3	1066	0
Future Volume (veh/h)	0	0	11	93	1	1	1	420	32	3	1066	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	4.00	1.00	1.00	4.00	1.00	1.00	4.00	0.99	1.00	4.00	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
Work Zone On Approach	4070	No	4070	4070	No	4070	4070	No	4070	4070	No	4070
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	12	101	1	1	1	457	35	3	1159	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	0	0	162	327	1 0.10	1	5	1894	145	6	2020	0
Arrive On Green	0.00	0.00	0.10	0.10		0.10	0.00	0.57	0.57	0.00	0.57	0.00
Sat Flow, veh/h	0	0	1581	1284	13	13	1781	3344	255	1781	3647	0
Grp Volume(v), veh/h	0	0	12	103	0	0	1	242	250	3	1159	0
Grp Sat Flow(s),veh/h/ln	0	0	1581	1310	0	0	1781	1777	1823	1781	1777	0
Q Serve(g_s), s	0.0	0.0	0.3	2.6	0.0	0.0	0.0	2.5	2.5	0.1	7.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.3	2.9	0.0	0.0	0.0	2.5	2.5	0.1	7.6	0.0
Prop In Lane	0.00	٥	1.00	0.98	٥	0.01	1.00	1006	0.14	1.00	2020	0.00
Lane Grp Cap(c), veh/h	0	0	162	329	0.00	0	5	1006	1032	6	2020	0
V/C Ratio(X)	0.00	0.00	0.07 907	0.31 990	0.00	0.00	0.21 292	0.24 2961	0.24 3037	0.51 292	0.57 5921	0.00
Avail Cap(c_a), veh/h 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)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.00	0.00	14.9	16.1	0.00	0.00	18.2	4.0	4.0	18.2	5.1	0.00
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.5	0.0	0.0	19.6	0.1	0.1	55.8	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.4	0.4	0.0	1.2	0.0
Unsig. Movement Delay, s/veh		0.0	0.1	0.0	0.0	0.0	0.0	0.4	0.4	0.1	1.2	0.0
LnGrp Delay(d),s/veh	0.0	0.0	15.0	16.7	0.0	0.0	37.8	4.1	4.1	74.0	5.3	0.0
LnGrp LOS	Α	Α	В	В	Α	A	D	A	A	7 4.0 E	Α	A
Approach Vol, veh/h		12			103			493			1162	
Approach Delay, s/veh		15.0			16.7			4.2			5.5	
Approach LOS		В			В			Α.Α			A	
											, ,	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.1	24.7		7.8	4.0	24.8		7.8				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	61.0		21.0	6.0	61.0		21.0				
Max Q Clear Time (g_c+l1), s	2.1	4.5		2.3	2.0	9.6		4.9				
Green Ext Time (p_c), s	0.0	3.1		0.0	0.0	11.2		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			5.8									
HCM 6th LOS			Α									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	^	7	44	∱ }		ቪኒ	^	7	ሻ	^	7
Traffic Volume (veh/h)	157	339	219	346	694	31	210	282	190	384	617	507
Future Volume (veh/h)	157	339	219	346	694	31	210	282	190	384	617	507
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	171	368	238	376	754	34	228	307	207	417	671	551
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	228	924	402	385	1057	48	285	825	537	400	1329	583
Arrive On Green	0.07	0.26	0.26	0.11	0.31	0.31	0.08	0.23	0.23	0.22	0.37	0.37
Sat Flow, veh/h	3456	3554	1546	3456	3460	156	3456	3554	1555	1781	3554	1559
Grp Volume(v), veh/h	171	368	238	376	387	401	228	307	207	417	671	551
Grp Sat Flow(s), veh/h/ln	1728	1777	1546	1728	1777	1839	1728	1777	1555	1781	1777	1559
Q Serve(g_s), s	5.6	9.8	15.5	12.5	22.2	22.3	7.5	8.4	11.6	25.8	16.8	39.3
Cycle Q Clear(g_c), s	5.6	9.8	15.5	12.5	22.2	22.3	7.5	8.4	11.6	25.8	16.8	39.3
Prop In Lane	1.00	3.0	1.00	1.00	<i>LL.L</i>	0.08	1.00	0.4	1.00	1.00	10.0	1.00
Lane Grp Cap(c), veh/h	228	924	402	385	543	562	285	825	537	400	1329	583
V/C Ratio(X)	0.75	0.40	0.59	0.98	0.71	0.71	0.80	0.37	0.39	1.04	0.51	0.95
Avail Cap(c_a), veh/h	246	924	402	385	543	562	313	865	555	400	1344	590
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	0.92	0.92	0.92	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	35.1	37.2	51.0	35.5	35.5	51.8	37.1	28.6	44.6	27.8	34.9
Incr Delay (d2), s/veh	9.6	1.3	6.3	37.9	7.2	7.0	11.2	0.4	0.6	56.8	0.5	24.4
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	2.7	4.3	6.5	7.3	10.4	10.8	3.6	3.6	4.4	17.5	7.1	18.3
Unsig. Movement Delay, s/veh		4.5	0.5	1.5	10.4	10.0	5.0	5.0	4.4	17.5	1.1	10.5
LnGrp Delay(d),s/veh	62.4	36.4	43.5	88.8	42.6	42.4	63.1	37.5	29.2	101.4	28.3	59.3
LnGrp LOS	02.4 E	30.4 D	43.3 D	66.6 F	42.0 D	42.4 D	03.1 E	37.5 D	29.2 C	101. 4	20.3 C	59.5 E
			U	<u> </u>		<u> </u>				<u> </u>		
Approach Vol, veh/h		777			1164			742			1639	
Approach Delay, s/veh		44.3			57.5			43.1			57.3	
Approach LOS		D			E			D			Е	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	36.2	13.7	48.1	11.8	41.4	30.0	31.8				
Change Period (Y+Rc), s	* 4.2	6.3	* 4.2	* 5.1	* 4.2	* 6.3	* 4.2	5.1				
Max Green Setting (Gmax), s	* 13	28.6	* 10	* 44	* 8.2	* 34	* 26	28.0				
Max Q Clear Time (g_c+l1), s	14.5	17.5	9.5	41.3	7.6	24.3	27.8	13.6				
Green Ext Time (p_c), s	0.0	3.3	0.0	1.6	0.0	4.0	0.0	3.2				
Intersection Summary												
HCM 6th Ctrl Delay			52.6									
HCM 6th LOS			D									
Notes												

^{*} HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	ተ ኈ		7	∱ ⊅	
Traffic Volume (veh/h)	0	1	7	111	2	95	7	669	238	0	459	2
Future Volume (veh/h)	0	1	7	111	2	95	7	669	238	0	459	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.97
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1	8	121	2	103	8	727	259	0	499	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	39	314	335	28	153	15	1315	468	6	1367	5
Arrive On Green	0.00	0.22	0.22	0.22	0.22	0.22	0.01	0.52	0.52	0.00	0.38	0.38
Sat Flow, veh/h	0	176	1411	695	127	688	1781	2549	908	1781	3630	15
Grp Volume(v), veh/h	0	0	9	226	0	0	8	507	479	0	244	257
Grp Sat Flow(s),veh/h/ln	0	0	1588	1510	0	0	1781	1777	1680	1781	1777	1867
Q Serve(g_s), s	0.0	0.0	0.1	3.3	0.0	0.0	0.1	5.9	5.9	0.0	3.0	3.0
Cycle Q Clear(g_c), s	0.0	0.0	0.1	4.1	0.0	0.0	0.1	5.9	5.9	0.0	3.0	3.0
Prop In Lane	0.00	٥	0.89 353	0.54	٥	0.46	1.00	017	0.54	1.00	cco	0.01 703
Lane Grp Cap(c), veh/h	0.00	0.00	0.03	517 0.44	0.00	0.00	15 0.52	917 0.55	867 0.55	0.00	669 0.37	0.37
V/C Ratio(X) Avail Cap(c_a), veh/h	0.00	0.00	1713	1784	0.00	0.00	349	2962	2801	233	2846	2991
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)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.00	0.00	9.3	10.8	0.00	0.00	15.1	5.0	5.0	0.00	6.9	6.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.6	0.0	0.0	24.9	0.5	0.6	0.0	0.3	0.3
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	0.0	0.0	0.0	1.1	0.0	0.0	0.1	0.9	0.8	0.0	0.7	0.7
Unsig. Movement Delay, s/veh		0.0	0.0	•••	0.0	0.0	V. 1	0.0	0.0	0.0	0.1	0.1
LnGrp Delay(d),s/veh	0.0	0.0	9.3	11.4	0.0	0.0	40.0	5.5	5.6	0.0	7.2	7.2
LnGrp LOS	A	A	A	В	A	A	D	A	A	A	A	A
Approach Vol, veh/h		9			226			994			501	
Approach Delay, s/veh		9.3			11.4			5.8			7.2	
Approach LOS		Α			В			Α			Α	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	19.8		10.8	4.3	15.5		10.8				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	51.0		33.0	6.0	49.0		33.0				
Max Q Clear Time (g_c+l1), s	0.0	7.9		2.1	2.1	5.0		6.1				
Green Ext Time (p_c), s	0.0	7.9		0.0	0.0	3.1		1.5				
Intersection Summary												
HCM 6th Ctrl Delay			7.0									
HCM 6th LOS			7.0 A									
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	ተ ኈ		ሻ	∱ ∱	
Traffic Volume (veh/h)	1	1	5	102	8	87	13	834	109	0	583	0
Future Volume (veh/h)	1	1	5	102	8	87	13	834	109	0	583	0
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		0.98	1.00		0.97	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	1	5	111	9	95	14	907	118	0	634	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	152	81	244	321	37	141	26	1656	215	6	1348	0
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.01	0.53	0.53	0.00	0.38	0.00
Sat Flow, veh/h	79	384	1157	670	175	669	1781	3151	410	1781	3647	0
Grp Volume(v), veh/h	7	0	0	215	0	0	14	511	514	0	634	0
Grp Sat Flow(s),veh/h/ln	1620	0	0	1514	0	0	1781	1777	1784	1781	1777	0
Q Serve(g_s), s	0.0	0.0	0.0	3.1	0.0	0.0	0.2	5.8	5.8	0.0	4.1	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	3.9	0.0	0.0	0.2	5.8	5.8	0.0	4.1	0.0
Prop In Lane	0.14		0.71	0.52		0.44	1.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	477	0	0	499	0	0	26	934	938	6	1348	0
V/C Ratio(X)	0.01	0.00	0.00	0.43	0.00	0.00	0.54	0.55	0.55	0.00	0.47	0.00
Avail Cap(c_a), veh/h	1742	0	0	1700	0	0	352	3099	3111	234	5964	0
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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	9.5	0.0	0.0	11.0	0.0	0.0	14.9	4.8	4.8	0.0	7.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.6	0.0	0.0	16.0	0.5	0.5	0.0	0.3	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	0.0	0.0	0.0	1.1	0.0	0.0	0.2	0.8	8.0	0.0	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.5	0.0	0.0	11.5	0.0	0.0	30.8	5.3	5.3	0.0	7.4	0.0
LnGrp LOS	Α	Α	Α	В	Α	Α	С	Α	Α	Α	Α	A
Approach Vol, veh/h		7			215			1039			634	
Approach Delay, s/veh		9.5			11.5			5.6			7.4	
Approach LOS		Α			В			Α			Α	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	20.0		10.4	4.4	15.5		10.4				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	53.0		31.0	6.0	51.0		31.0				
Max Q Clear Time (g_c+I1), s	0.0	7.8		2.1	2.2	6.1		5.9				
Green Ext Time (p_c), s	0.0	8.1		0.0	0.0	4.8		1.4				
Intersection Summary												
HCM 6th Ctrl Delay			6.9									
HCM 6th LOS			A									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	ተኈ		*	∱ ∱	
Traffic Volume (veh/h)	0	0	6	57	2	2	9	968	65	2	501	3
Future Volume (veh/h)	0	0	6	57	2	2	9	968	65	2	501	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	4.00	0.98	0.99		0.98	1.00	4.00	0.97	1.00	4.00	0.97
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
Work Zone On Approach	4070	No	4070	4070	No	4070	4070	No	4070	4070	No	4070
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h Peak Hour Factor	0.92	0 0.92	7 0.92	62 0.92	2 0.92	2 0.92	10 0.92	1052 0.92	71 0.92	2 0.92	545 0.92	0.92
Percent Heavy Veh, %	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Cap, veh/h	0	0	105	301	3	3	19	1878	127	6	1988	11
Arrive On Green	0.00	0.00	0.07	0.07	0.07	0.07	0.01	0.56	0.56	0.00	0.55	0.55
Sat Flow, veh/h	0.00	0.00	1550	1243	40	40	1781	3372	227	1781	3623	20
Grp Volume(v), veh/h	0	0	7	66	0	0	10	554	569	2	267	281
Grp Sat Flow(s), veh/h/ln	0	0	1550	1323	0	0	1781	1777	1822	1781	1777	1866
Q Serve(g_s), s	0.0	0.0	0.1	1.5	0.0	0.0	0.2	6.5	6.5	0.0	2.6	2.6
Cycle Q Clear(g_c), s	0.0	0.0	0.1	1.6	0.0	0.0	0.2	6.5	6.5	0.0	2.6	2.6
Prop In Lane	0.00	0.0	1.00	0.94	0.0	0.03	1.00	0.0	0.12	1.00	2.0	0.01
Lane Grp Cap(c), veh/h	0.00	0	105	306	0	0.00	1.00	990	1015	6	975	1024
V/C Ratio(X)	0.00	0.00	0.07	0.22	0.00	0.00	0.53	0.56	0.56	0.36	0.27	0.27
Avail Cap(c_a), veh/h	0.00	0.00	964	1089	0.00	0.00	332	3426	3513	332	3426	3598
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)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	14.0	14.8	0.0	0.0	15.8	4.6	4.6	16.0	3.9	3.9
Incr Delay (d2), s/veh	0.0	0.0	0.3	0.3	0.0	0.0	20.9	0.5	0.5	35.3	0.2	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	0.0	0.0	0.0	0.4	0.0	0.0	0.2	0.8	0.8	0.1	0.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	14.3	15.1	0.0	0.0	36.8	5.1	5.1	51.3	4.0	4.0
LnGrp LOS	Α	Α	В	В	Α	Α	D	Α	Α	D	Α	<u>A</u>
Approach Vol, veh/h		7			66			1133			550	
Approach Delay, s/veh		14.3			15.1			5.4			4.2	
Approach LOS		В			В			Α			Α	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.1	21.9		6.2	4.3	21.6		6.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	62.0		20.0	6.0	62.0		20.0				
Max Q Clear Time (g_c+l1), s	2.0	8.5		2.1	2.2	4.6		3.6				
Green Ext Time (p_c), s	0.0	9.5		0.0	0.0	3.5		0.2				
Intersection Summary												_
HCM 6th Ctrl Delay			5.4									
HCM 6th LOS			Α									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1,1	^	7	1,4	∱ }		1,1	^	7	Ť	^	7
Traffic Volume (veh/h)	334	685	273	318	317	68	258	656	438	207	382	190
Future Volume (veh/h)	334	685	273	318	317	68	258	656	438	207	382	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	363	745	297	346	345	74	280	713	476	225	415	207
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	404	1009	439	373	800	169	345	995	615	232	1102	484
Arrive On Green	0.12	0.28	0.28	0.11	0.28	0.28	0.10	0.28	0.28	0.13	0.31	0.31
Sat Flow, veh/h	3456	3554	1546	3456	2908	616	3456	3554	1585	1781	3554	1560
Grp Volume(v), veh/h	363	745	297	346	209	210	280	713	476	225	415	207
Grp Sat Flow(s),veh/h/ln	1728	1777	1546	1728	1777	1747	1728	1777	1585	1781	1777	1560
Q Serve(g_s), s	10.4	19.0	17.0	9.9	9.7	9.9	7.9	18.1	26.3	12.6	9.1	10.6
Cycle Q Clear(g_c), s	10.4	19.0	17.0	9.9	9.7	9.9	7.9	18.1	26.3	12.6	9.1	10.6
Prop In Lane	1.00		1.00	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	404	1009	439	373	489	480	345	995	615	232	1102	484
V/C Ratio(X)	0.90	0.74	0.68	0.93	0.43	0.44	0.81	0.72	0.77	0.97	0.38	0.43
Avail Cap(c_a), veh/h	404	1009	439	373	506	498	373	995	615	232	1102	484
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	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	32.4	31.7	44.2	29.8	29.9	44.1	32.4	26.8	43.3	26.9	27.4
Incr Delay (d2), s/veh	21.6	4.8	8.1	27.9	2.6	2.8	10.8	2.7	6.5	50.7	0.3	0.9
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	5.5	8.5	7.2	5.6	4.3	4.4	3.9	7.9	10.5	8.7	3.8	4.0
Unsig. Movement Delay, s/veh		0.0		0.0	1.0	•••	0.0	7.0	10.0	0.1	0.0	1.0
LnGrp Delay(d),s/veh	65.2	37.3	39.9	72.1	32.4	32.7	54.8	35.1	33.2	94.0	27.3	28.4
LnGrp LOS	E	D	D	E	C	C	D	D	C	F	C	C
Approach Vol, veh/h		1405			765			1469		<u> </u>	847	
Approach Delay, s/veh		45.0			50.4			38.3			45.3	
Approach LOS		43.0 D			D			D			73.3 D	
											D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	34.7	14.2	36.1	15.9	33.8	17.2	33.1				
Change Period (Y+Rc), s	* 4.2	6.3	* 4.2	* 5.1	* 4.2	* 6.3	* 4.2	5.1				
Max Green Setting (Gmax), s	* 11	28.4	* 11	* 30	* 12	* 29	* 13	28.0				
Max Q Clear Time (g_c+l1), s	11.9	21.0	9.9	12.6	12.4	11.9	14.6	28.3				
Green Ext Time (p_c), s	0.0	4.4	0.1	4.8	0.0	2.7	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			43.8									
HCM 6th LOS			D									
Notos												

^{*} HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Arterial Level of Service: NB Cuyamaca Street

	Arterial	Flow	Running	Signal	Travel	Dist	Arterial	Arterial
Cross Street	Class	Speed	Time	Delay	Time (s)	(mi)	Speed	LOS
El Nopal	III	35	13.2	10.6	23.8	0.10	14.8	D
Woodglen Vista Drive	III	35	31.1	8.4	39.5	0.26	23.6	С
Princess Joann Road	III	35	54.7	2.1	56.8	0.53	33.7	Α
Street Y	III	35	70.6	8.6	79.2	0.69	31.2	Α
Total	III		169.6	29.7	199.3	1.58	28.5	В

Arterial Level of Service: SB Cuyamaca Street

	Arterial	Flow	Running	Signal	Travel	Dist	Arterial	Arterial
Cross Street	Class	Speed	Time	Delay	Time (s)	(mi)	Speed	LOS
Street A	III	35	19.6	11.6	31.2	0.15	17.7	D
Princess Joann Road	III	35	70.6	4.6	75.2	0.69	32.8	Α
Woodglen Vista Drive	III	35	54.7	11.0	65.7	0.53	29.1	В
El Nopal	III	35	31.1	16.6	47.7	0.26	19.6	С
Total	III		176.0	43.8	219.8	1.63	26.7	В

Arterial Level of Service: NB Cuyamaca Street

	Arterial	Flow	Running	Signal	Travel	Dist	Arterial	Arterial
Cross Street	Class	Speed	Time	Delay	Time (s)	(mi)	Speed	LOS
El Nopal	III	35	13.2	9.2	22.4	0.10	15.8	D
Woodglen Vista Drive	III	35	31.1	10.3	41.4	0.26	22.6	С
Princess Joann Road	III	35	54.7	6.4	61.1	0.53	31.3	Α
Street Y	III	35	70.6	14.7	85.3	0.69	29.0	В
Total	III		169.6	40.6	210.2	1.58	27.0	В

Arterial Level of Service: SB Cuyamaca Street

	Arterial	Flow	Running	Signal	Travel	Dist	Arterial	Arterial
Cross Street	Class	Speed	Time	Delay	Time (s)	(mi)	Speed	LOS
Street A	III	35	19.6	9.4	29.0	0.15	19.0	С
Princess Joann Road	III	35	70.6	4.2	74.8	0.69	33.0	Α
Woodglen Vista Drive	III	35	54.7	9.3	64.0	0.53	29.9	В
El Nopal	III	35	31.1	7.8	38.9	0.26	24.0	В
Total	III		176.0	30.7	206.7	1.63	28.4	В

ATTACHMENT H MITIGATION PHASING PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS (NO MAGNOLIA AVENUE EXTENSION – PROHIBITED SOUTHBOUND LEFT-TURNS FROM CUYAMACA STREET)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		7	†	7	7	f.	
Traffic Vol, veh/h	0	0	11	93	1	1	1	164	32	3	571	0
Future Vol, veh/h	0	0	11	93	1	1	1	164	32	3	571	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	12	101	1	1	1	178	35	3	621	0
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	0
Approach		EB		WB			NB			SB		
Opposing Approach		WB		EB			SB			NB		
Opposing Lanes		1		1			2			3		
Conflicting Approach Left		SB		NB			EB			WB		
Conflicting Lanes Left		2		3			1			1		
Conflicting Approach Right		NB		SB			WB			EB		
Conflicting Lanes Right		3		2			1			1		
HCM Control Delay		9.2		11.8			10.1			47		
HCM LOS		Α		В			В			Е		

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	
Vol Left, %	100%	0%	0%	0%	98%	100%	0%	
Vol Thru, %	0%	100%	0%	0%	1%	0%	100%	
Vol Right, %	0%	0%	100%	100%	1%	0%	0%	
Sign Control	Stop							
Traffic Vol by Lane	1	164	32	11	95	3	571	
LT Vol	1	0	0	0	93	3	0	
Through Vol	0	164	0	0	1	0	571	
RT Vol	0	0	32	11	1	0	0	
Lane Flow Rate	1	178	35	12	103	3	621	
Geometry Grp	7	7	7	7	7	8	8	
Degree of Util (X)	0.002	0.279	0.047	0.021	0.207	0.005	0.952	
Departure Headway (Hd)	6.131	5.625	4.916	6.302	7.21	6.027	5.523	
Convergence, Y/N	Yes							
Сар	585	640	729	567	498	597	664	
Service Time	3.858	3.352	2.643	4.053	4.953	3.727	3.223	
HCM Lane V/C Ratio	0.002	0.278	0.048	0.021	0.207	0.005	0.935	
HCM Control Delay	8.9	10.5	7.9	9.2	11.8	8.8	47.2	
HCM Lane LOS	Α	В	Α	Α	В	Α	Е	
HCM 95th-tile Q	0	1.1	0.1	0.1	0.8	0	13.4	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ች	^	7	ሻሻ	∱ ⊅		ሻሻ	^	7	7	∱ ∱	
Traffic Volume (veh/h)	119	339	219	346	694	17	210	177	190	170	413	433
Future Volume (veh/h)	119	339	219	346	694	17	210	177	190	170	413	433
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	129	368	238	376	754	18	228	192	207	185	449	471
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	159	1064	464	441	1199	29	293	1041	659	146	515	452
Arrive On Green	0.09	0.30	0.30	0.13	0.34	0.34	0.08	0.29	0.29	0.08	0.29	0.29
Sat Flow, veh/h	1781	3554	1549	3456	3546	85	3456	3554	1558	1781	1777	1558
Grp Volume(v), veh/h	129	368	238	376	378	394	228	192	207	185	449	471
Grp Sat Flow(s), veh/h/ln	1781	1777	1549	1728	1777	1853	1728	1777	1558	1781	1777	1558
Q Serve(g_s), s	7.1	8.1	12.7	10.6	17.9	17.9	6.5	4.0	8.9	8.2	24.0	29.0
Cycle Q Clear(g_c), s	7.1	8.1	12.7	10.6	17.9	17.9	6.5	4.0	8.9	8.2	24.0	29.0
Prop In Lane	1.00	0.1	1.00	1.00	17.5	0.05	1.00	т.0	1.00	1.00	24.0	1.00
Lane Grp Cap(c), veh/h	159	1064	464	441	601	627	293	1041	659	146	515	452
V/C Ratio(X)	0.81	0.35	0.51	0.85	0.63	0.63	0.78	0.18	0.31	1.27	0.87	1.04
Avail Cap(c_a), veh/h	230	1064	464	484	601	627	318	1063	668	146	515	452
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	0.92	0.92	0.92	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	27.4	29.0	42.7	27.8	27.8	44.8	26.4	19.4	45.9	33.7	35.5
Incr Delay (d2), s/veh	8.6	0.9	4.0	10.9	4.5	4.4	9.4	0.1	0.4	163.0	15.5	53.9
	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	3.4	3.4	5.1	5.1	8.0	8.3	3.1	1.7	3.2	10.2	12.2	17.3
%ile BackOfQ(50%),veh/ln		3.4	5.1	5.1	0.0	0.3	٥.١	1.7	3.2	10.2	12.2	17.3
Unsig. Movement Delay, s/veh		20.2	33.0	E2 6	20.4	32.2	E4 O	06.6	10.7	200.0	40.0	00.4
LnGrp Delay(d),s/veh	53.4	28.3		53.6	32.4		54.2	26.6	19.7	208.9	49.2	89.4
LnGrp LOS	D	C	С	D	C	С	D	С	В	F	D	F
Approach Vol, veh/h		735			1148			627			1105	
Approach Delay, s/veh		34.2			39.3			34.4			93.1	
Approach LOS		С			D			С			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	36.2	12.7	34.1	13.1	40.1	12.4	34.4				
Change Period (Y+Rc), s	* 4.2	6.3	* 4.2	* 5.1	* 4.2	* 6.3	* 4.2	5.1				
Max Green Setting (Gmax), s	* 14	28.1	* 9.2	* 29	* 13	* 30	* 8.2	29.9				
Max Q Clear Time (g_c+l1), s	12.6	14.7	8.5	31.0	9.1	19.9	10.2	10.9				
Green Ext Time (p_c), s	0.1	3.7	0.0	0.0	0.0	4.0	0.0	2.6				
Intersection Summary												
HCM 6th Ctrl Delay			53.8									
HCM 6th LOS			53.6 D									
			U									
Notes												

^{*} HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

intersection												
Intersection Delay, s/veh	33.6											
Intersection LOS	D											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	f)		7	1>	
Traffic Vol, veh/h	1	1	5	102	8	34	13	487	109	3	302	0
Future Vol, veh/h	1	1	5	102	8	34	13	487	109	3	302	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	5	111	9	37	14	529	118	3	328	0
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			2			2		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	2			2			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	2			2			1			1		
HCM Control Delay	9.7			12			48.3			14.9		
HCM LOS	Α			В			Е			В		
Lane		NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2					

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2	
Vol Left, %	100%	0%	14%	71%	100%	0%	
Vol Thru, %	0%	82%	14%	6%	0%	100%	
Vol Right, %	0%	18%	71%	24%	0%	0%	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	13	596	7	144	3	302	
LT Vol	13	0	1	102	3	0	
Through Vol	0	487	1	8	0	302	
RT Vol	0	109	5	34	0	0	
Lane Flow Rate	14	648	8	157	3	328	
Geometry Grp	7	7	2	2	7	7	
Degree of Util (X)	0.024	0.965	0.014	0.281	0.006	0.531	
Departure Headway (Hd)	5.996	5.361	6.568	6.462	6.329	5.822	
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	
Cap	598	680	542	556	565	620	
Service Time	3.724	3.09	4.641	4.514	4.067	3.56	
HCM Lane V/C Ratio	0.023	0.953	0.015	0.282	0.005	0.529	
HCM Control Delay	8.9	49.2	9.7	12	9.1	15	
HCM Lane LOS	А	Е	Α	В	Α	В	
HCM 95th-tile Q	0.1	14.2	0	1.1	0	3.1	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		7	†	7	Ţ	f)	
Traffic Vol, veh/h	0	0	6	57	2	2	9	968	65	2	501	3
Future Vol, veh/h	0	0	6	57	2	2	9	968	65	2	501	3
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	7	62	2	2	10	1052	71	2	545	3
Number of Lanes	0	1	0	0	1	0	1	1	1	1	1	0
Approach		EB		WB			NB			SB		
Opposing Approach		WB		EB			SB			NB		
Opposing Lanes		1		1			2			3		
Conflicting Approach Left		SB		NB			EB			WB		
Conflicting Lanes Left		2		3			1			1		
Conflicting Approach Right		NB		SB			WB			EB		
Conflicting Lanes Right		3		2			1			1		
HCM Control Delay		10.9		13.2			266.3			60.6		
HCM LOS		В		В			F			F		

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	
Vol Left, %	100%	0%	0%	0%	93%	100%	0%	
Vol Thru, %	0%	100%	0%	0%	3%	0%	99%	
Vol Right, %	0%	0%	100%	100%	3%	0%	1%	
Sign Control	Stop							
Traffic Vol by Lane	9	968	65	6	61	2	504	
LT Vol	9	0	0	0	57	2	0	
Through Vol	0	968	0	0	2	0	501	
RT Vol	0	0	65	6	2	0	3	
Lane Flow Rate	10	1052	71	7	66	2	548	
Geometry Grp	7	7	7	7	7	8	8	
Degree of Util (X)	0.016	1.586	0.093	0.013	0.148	0.004	0.973	
Departure Headway (Hd)	5.93	5.425	4.719	8.11	8.943	7.811	7.302	
Convergence, Y/N	Yes							
Cap	601	673	755	444	404	461	499	
Service Time	3.689	3.184	2.477	5.81	6.643	5.511	5.002	
HCM Lane V/C Ratio	0.017	1.563	0.094	0.016	0.163	0.004	1.098	
HCM Control Delay	8.8	286	8	10.9	13.2	10.5	60.8	
HCM Lane LOS	Α	F	Α	В	В	В	F	
HCM 95th-tile Q	0	55.2	0.3	0	0.5	0	12.6	

MEMORANDUM

Mr. Marni Borg City of Santee	Date:	September 16, 2020
John Boarman, P.E. LLG, Engineers	LLG Ref:	3-15-2462
Fanita Ranch, Supplemental VMT Analysis		
	City of Santee John Boarman, P.E. LLG, Engineers	City of Santee John Boarman, P.E. LLG Ref: LLG, Engineers

The purpose of this memo is to provide calculations to support the conclusion in our memo dated September 9, 2020 that the increase in VMT from both the "No Left-Turns" and "Left-Turns Allowed" alternatives are de minimis.

Linscott, Law & Greenspan Engineers (LLG) conducted a Vehicle Miles Travelled (VMT) analysis for the Fanita Ranch project EIR and the total existing baseline project VMT was 243,266. This analysis assumed the extension of Magnolia Avenue from Cuyamaca Street to the current terminus of Magnolia Avenue. The purpose of this memo is to estimate the change in VMT if the Magnolia Avenue extension is not provided.

Two options for treating the ability to turn left from southbound Cuyamaca Street onto Princess Joann Road, Woodglen Vista Drive, and El Nopal have been proposed. The first would allow full movements at each of these locations. The north/south routes of Cuyamaca Street and Magnolia Avenue run parallel to each other for their existing entirety. Without the future extension of Magnolia Avenue, any trip destined to/from Magnolia Avenue would travel virtually the same distance along Princess Joann Road, Woodglen Vista Drive, or El Nopal due to the grid nature of this area of Santee.

The second option would prohibit southbound left-turns from Cuyamaca Street onto Princess Joann Road, Woodglen Vista Drive, and El Nopal. Under this scenario, trips from Cuyamaca Street destined for most locations would have no change in VMT since no out of direction travel is necessary. The one exception is trips destined for El Nopal east of Magnolia Avenue. Ten percent (10%) of project traffic is forecasted to utilize this road in the EIR. Project traffic destined for El Nopal without Magnolia Avenue would need to travel to Mast Boulevard, proceed east to Magnolia Avenue and then turn north to reach El Nopal. The distance is 3.0 miles instead of the 1.75 miles if Magnolia Avenue was extended. It should be noted that "inbound" traffic to Fanita Ranch would not need to make these out of direction maneuvers. The attached figure shows this path of travel graphically. This extra 1.25 miles of travel applies to 1,313 project ADT (5% of the total 26,272 trips generated). Therefore, the VMT increase is 1,643.

The total VMT would increase from 243,266 to 244,909, an increase of 0.67%, an amount considered to be de minimis.

Please call with any questions.

Thank you



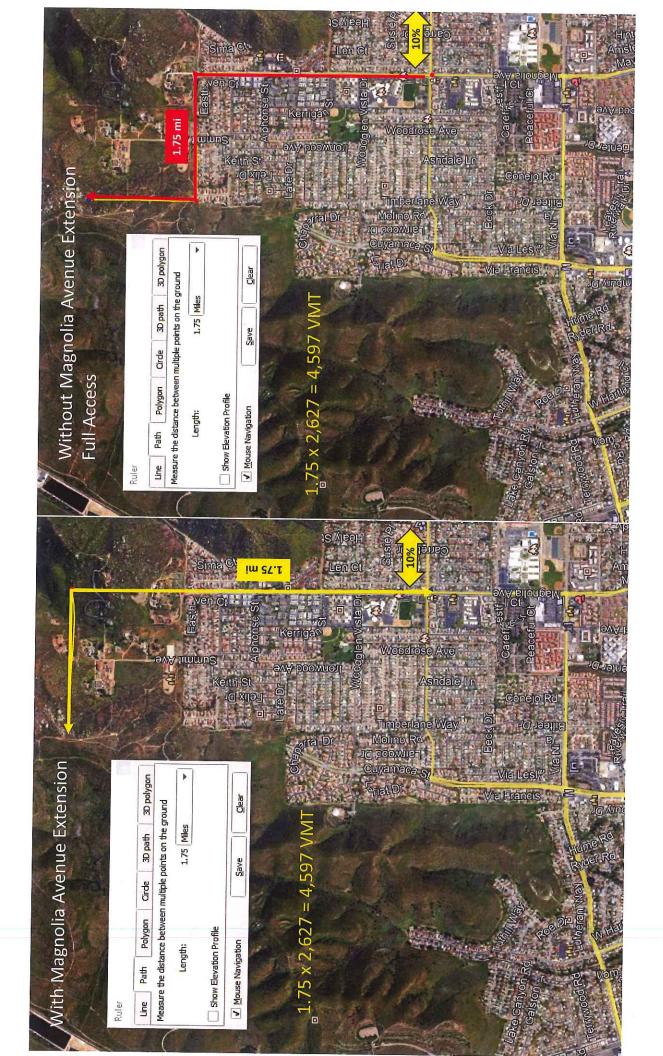
Engineers & Planners Traffic Transportation Parking

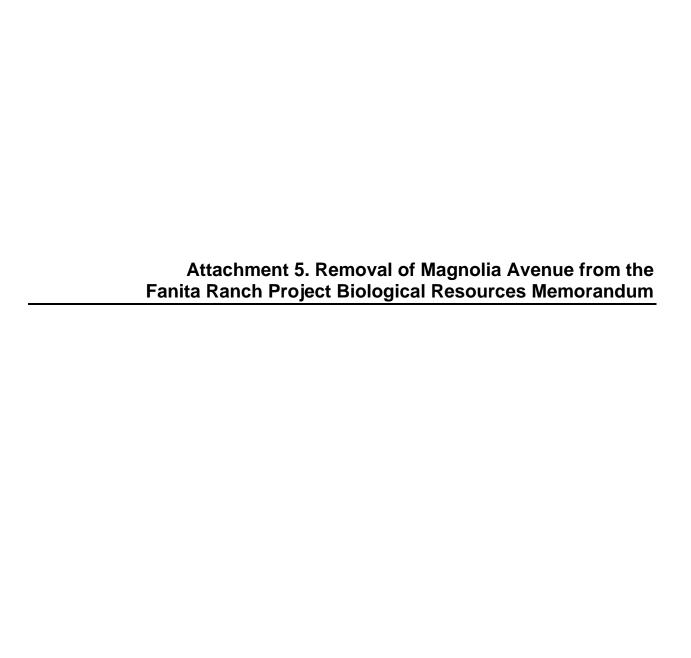
Linscott, Law & Greenspan, Engineers

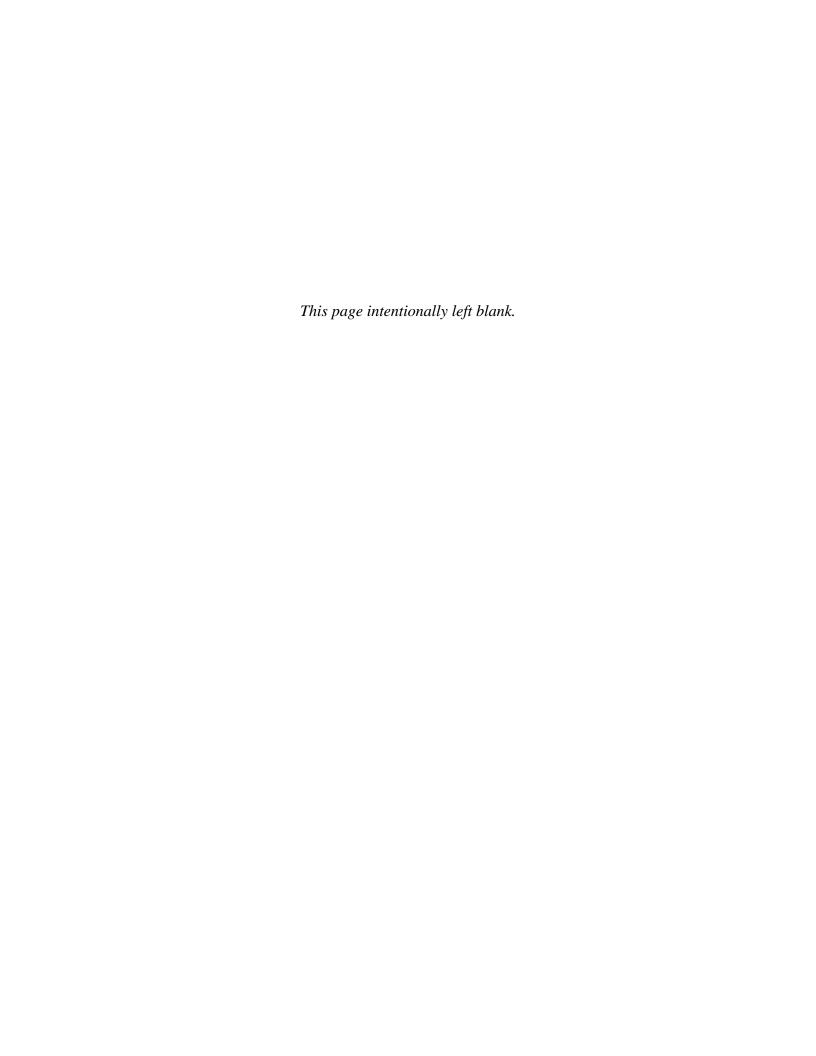
4542 Ruffner Street Suite 100 San Diego , CA 92111 858.300.8800 T 858.300.8810 F www.llgengineers.com

Pasadena Irvine San Diego Woodland Hills









MEMORANDUM

To: Jeff O'Connor – HomeFed From: Brock Ortega – Dudek

Subject: Removal of Magnolia Avenue from the Fanita Ranch Project

Date: September 9, 2020 cc: Tom Blessent – HomeFed

James Whalen - J. Whalen Associates, Inc.

Jeffrey Chine - Allen Matkins

The current Fanita Ranch Project totals 2,670.67 acres, including 2,638.07 acres on site and 32.60 acres off site. The 32.60-acre offsite area is associated with impacts resulting from both the Cuyamaca Street and Magnolia Avenue road extensions analyzed in the May 2020 Biological Technical Report (BTR) for the Fanita Ranch Project (project) (Dudek 2020). This memorandum documents the removal of the Magnolia Avenue road extension portion of the offsite impacts from the project. Removal of Magnolia Avenue would result in an overall decrease in impacts to biological resources occurring within the project site and no new significant impacts would occur. It should be noted that this revision to the project does not affect the analysis or significance conclusions associated with onsite impacts.

Impact and Mitigation Analysis

Vegetation Communities

Implementation of the May 2020 project would result in offsite impacts to 32.60 acres, including 25.32 acres of permanent impacts and 7.29 acres of temporary impacts (Table 1). Implementation of the revised August 2020 project (i.e. removal of Magnolia Avenue) would result in offsite impacts to 18.26 acres, including 14.30 acres of permanent impacts and 3.96 acres of temporary impacts (Table 1). Therefore, offsite impact totals would be reduced by a total of 14.35 acres and impacts to sensitive vegetation communities (including wetlands) would be reduced by 8.00 acres with the removal of Magnolia Avenue (Table 1).

The mitigation required for permanent offsite impacts to sensitive upland vegetation communities under the May 2020 project totals 33.00 acres (Table 2). The revised August 2020 project would reduce the mitigation requirement total for impacts to sensitive upland vegetation communities by 10.71 acres, totaling 22.29 acres (Table 2). Therefore, the project's total mitigation requirement for all permanent impacts would be reduced from 1,303.33 acres to 1,292.62 acres. No changes would occur to the total conservation occurring within the Habitat Preserve (i.e. BTR mitigation measure MM-BIO-1).

Restoration for temporary impacts occurring along the Magnolia Avenue road extension would no longer be required. Therefore, the offsite restoration requirement would be reduced from 5.86 acres to 3.24 acres (Table 3) and the project's total restoration would be reduced from 130.21 acres to 127.59 acres (see BTR Table 6-3 for details). BTR mitigation measure MM-BIO-2 would still apply to the revised August 2020 project.



Table 1. Offsite Impact Comparison

General Vegetation	Vegetation Type (Holland/	N	lay 2020 Impa	acts	August 2020 Impacts		
Community/Land Cover Category	Oberbauer Code)	Perm	Тетр	Total	Perm	Тетр	Total
Disturbed and Developed Areas	Disturbed Habitat (11300)	4.36	1.07	5.43	1.77	0.70	2.47
(10000)	Urban/Developed (12000)	3.16	0.34	3.50	0.10	0.01	0.11
	Disturbed and Developed Areas Subtotal	7.51	1.41	8.93	1.87	0.70	2.58
Scrub and Chaparral (30000)	Diegan Coastal Sage Scrub ¹ (32500)	4.93	1.33	6.26	2.62	0.45	3.07
	Diegan Coastal Sage Scrub (fire recovered) ¹ (32500)	0.17	_	0.17	0.17	_	0.17
	Diegan Coastal Sage Scrub (disturbed)1 (32500)	8.70	3.28	11.99	5.65	1.54	7.20
	Diegan Coastal Sage Scrub-Valley Needlegrass Grassland ¹ (32500/42110)	0.01	0.09	0.10	0.01	0.09	0.10
	Diegan Coastal Sage Scrub-Valley Needlegrass Grassland (disturbed) ¹ (32500/42110)	1.44	0.94	2.38	1.44	0.94	2.38
	Scrub and Chaparral Subtotal	15.25	5.64	20.89	9.89	3.03	12.92
Grasslands, Vernal Pools,	Non-native Grassland ¹ (42200)	2.50	0.21	2.72	2.50	0.21	2.72
Meadows, and Other Herb Communities (40000)	Vernal Pool (44000) ¹	0.01	_	0.01	0.01	_	0.01
Grasslands, Ver	nal Pools, Meadows, and Other Herb Communities Subtotal	2.52	0.21	2.73	2.52	0.21	2.73
Riparian and Bottomland Habitat (60000)	Non-vegetated Channel or Floodway ¹ (64200)	0.04	0.02	0.06	0.02	0.01	0.03
	Riparian and Bottomland Habitat Subtotal	0.04	0.02	0.06	0.02	0.01	0.03
	Sensitive Vegetation (including Wetlands) Subtotal	17.80	5.87	23.68	12.42	3.25	15.68
	Grand Total ²	25.32	7.29	32.60	14.30	3.96	18.26

Notes:

Sensitive vegetation community in the Draft Santee MSCP Subarea Plan (City of Santee 2018).

Totals may not sum due to rounding.

Table 2. Comparison of Mitigation Requirements for Permanent Impacts to Sensitive Upland Vegetation Communities

Vegetation Type (Holland/	May 2020 Impa	May 2020 Impacts and Mitigation Requirement			August 2020 Impacts and Mitigation Requirement		
Oberbauer Code)	Perm	Ratio ¹	Total	Perm	Ratio ¹	Total	
Diegan Coastal Sage Scrub	4.93	2:1	9.86	2.62	2:1	5.24	
Diegan Coastal Sage Scrub (fire recovered)	0.17	2:1	0.34	0.17	2:1	0.34	
Diegan Coastal Sage Scrub (disturbed)	8.70	2:1	17.40	5.65	2:1	11.31	
Diegan Coastal Sage Scrub-Valley Needlegrass Grassland	0.01	2:1	0.01	0.01	2:1	0.01	
Diegan Coastal Sage Scrub-Valley Needlegrass Grassland (disturbed)	1.44	2:1	2.88	1.44	2:1	2.88	
Scrub and Chaparral Subtotal	15.25	_	30.50	9.89	_	19.78	
Non-native Grassland	2.50	1:1	2.50	2.50	1:1	2.50	
Grasslands, Vernal Pools, Meadows, and Other Herb Communities Subtotal	2.50	_	2.50	2.50	_	2.50	
Grand Total ²	17.76	_	33.00	12.39	_	22.29	

Notes:

Table 3. Comparison of Restoration Requirements for Temporary Impacts to Sensitive Upland Vegetation Communities

Vegetation Type (Holland/	May 2020 Impac	May 2020 Impacts and Restoration Requirement			August 2020 Impacts and Restoration Requirement		
Oberbauer Code)	Тетр	Ratio ¹	Total	Тетр	Ratio ¹	Total	
Diegan Coastal Sage Scrub	1.33	1:1	1.33	0.45	1:1	0.45	
Diegan Coastal Sage Scrub (disturbed)	3.28	1:1	3.28	1.54	1:1	1.54	
Diegan Coastal Sage Scrub-Valley Needlegrass Grassland	0.09	1:1	0.09	0.09	1:1	0.09	
Diegan Coastal Sage Scrub-Valley Needlegrass Grassland (disturbed)	0.94	1:1	0.94	0.94	1:1	0.94	
Scrub and Chaparral Subtotal	5.64	_	5.64	3.03	_	3.03	
Non-native Grassland	0.21	1:1	0.21	0.21	1:1	0.21	
Grand Total ²	5.86	_	5.86	3.24	_	3.24	

Notes:



Mitigation ratios are based on Table 5-14 in the Draft Santee MSCP Subarea Plan (City of Santee 2018).

² Totals may not sum due to rounding.

Ratios are based on Table 5-14 in the Draft Santee MSCP Subarea Plan (City of Santee 2018).

² Totals may not sum due to rounding.

Jurisdictional Aquatic Resources

Implementation of the revised August 2020 project would reduce impacts to jurisdictional resources (i.e. non-vegetated channel) occurring along Magnolia Avenue by 0.03 acres. Therefore, assuming a 2:1 mitigation ratio for impacts to non-vegetated channel, the project's total mitigation requirements would be reduced by 0.06 acres. A total of 24.07 acres of mitigation would be required under the May 2020 project, whereas a total of 24.01 acres would be required under the revised August 2020 project.

Special-Status Plant Species

Although the Magnolia Avenue extension contains suitable habitat, albeit very limited, it was not surveyed for special-status plant species due to limited legal access. Implementation of the revised August 2020 project would not result in any change to the BTR's impact analysis for special-status plant species. However, BTR mitigation measure MM-BIO-6, which required preconstruction special-status plant surveys in all impact areas along Magnolia Avenue containing suitable habitat, would no longer be required.

Special-Status Wildlife Species

Although the Magnolia Avenue extension contains suitable habitat, albeit very limited, it was not surveyed for special-status wildlife species due to limited legal access. Implementation of the revised August 2020 project would not result in any change to the BTR's impact analysis for special-status wildlife species occurrences. There would be a reduction in impacts to suitable habitat (i.e. coastal sage scrub varieties and non-native grassland) utilized by special-status wildlife species. See the Vegetation Communities Section above for details.

Additionally, implementation of the revised August 2020 project would result in reduced impacts to both USFWS-designated Critical Habitat for coastal California gnatcatcher and USFWS-proposed Critical Habitat for the Hermes copper butterfly.

In summary, removal of Magnolia Avenue from the project would result in an overall decrease in impacts to biological resources occurring within the project site and no new significant impacts would occur.

Please contact me at bortega@dudek.com or 760.479.4254 if you have any questions, concerns, or seek additional information.

Sincerely,

Brock Ortega Principal

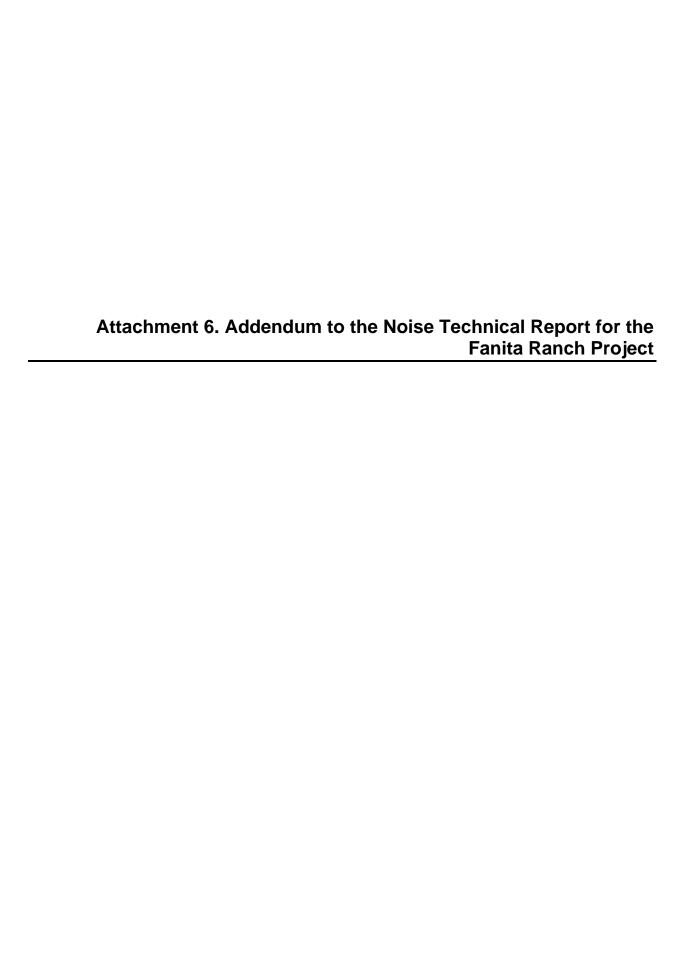


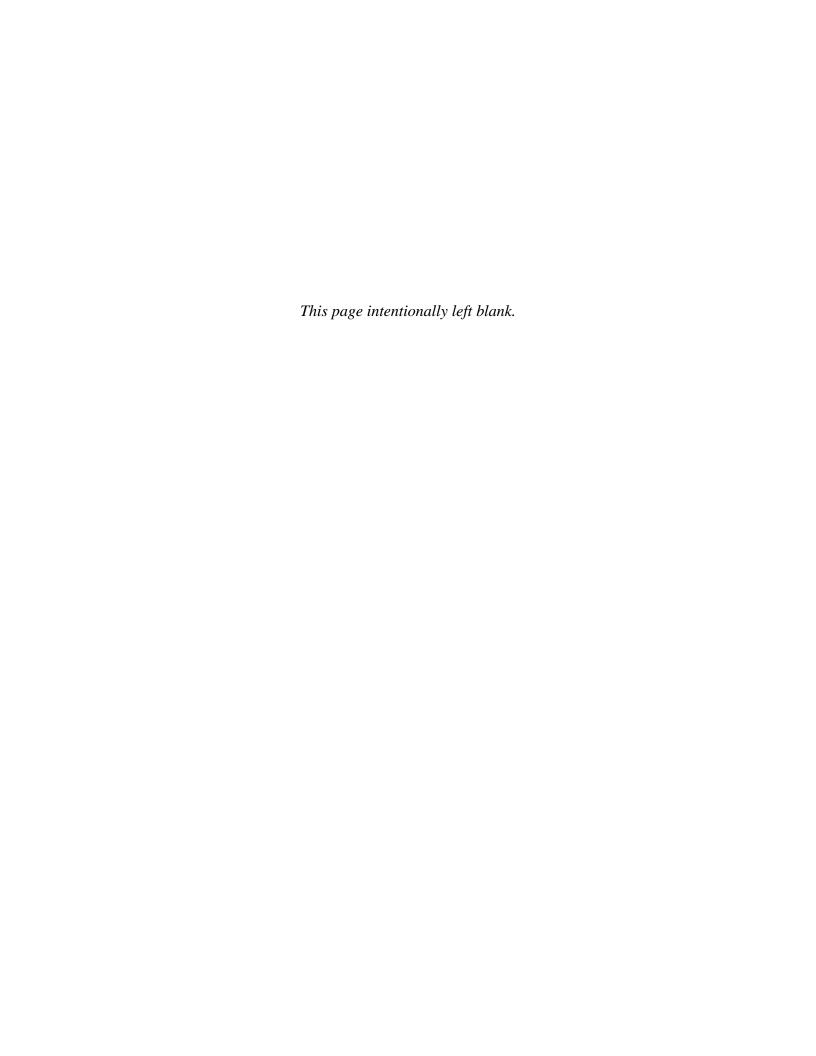
References

Dudek. 2020. *Biological Technical Report for the Fanita Ranch Project*. Prepared for HomeFed Fanita Rancho LLC. May 2020. Encinitas, California: Dudek.

City of Santee. 2018. *Draft Santee Multiple Species Conservation Program (MSCP) Subarea Plan*. Wildlife Agency Review Draft available December 2018.









MEMORANDUM

To: Marni Borg, Principal Environmental Planner, City of Santee

From: Sharon Toland, Project Manager

RE: Addendum to the Noise Technical Report for the Fanita Ranch Project

Date: September 16, 2020

CC: Melanie Kush, Director of Planning, City of Santee

Att: 1, Revised FHWA Noise Prediction Model Results – Full Access Scenario; 2, Revised FHWA Noise

Prediction Model Results – Prohibited Southbound Left-Turns from Cuyamaca Street Scenario; 3, Revised FHWA Noise Prediction Model Results – Average Construction Volumes (Full Access Scenario); 4, Revised FHWA Noise Prediction Model Results – Average Construction Volumes (Prohibited Southbound Left-Turns from Cuyamaca Street Scenario); 5, FHWA Noise Prediction Model Results – Building Construction Worst-Case Scenario (Full Access Scenario); 6, FHWA Noise Prediction Model Results – Building Construction Worst-Case Scenario (Prohibited Southbound Left-Turns from

Cuyamaca Street Scenario)

At the applicant's request, the Noise Technical Report (NTR) prepared for the Fanita Ranch Project (proposed project) by Harris & Associates (May 2020) has been revised to reflect the removal of the Magnolia Avenue extension as a project feature. The following analysis revises sections of the analysis in the NTR provided as Appendix L to the Final Environmental Impact Report. The following revised analysis is listed by NTR section. Where no change to the NTR is required, no analysis is included in this memorandum. The following analysis is based on the revised traffic analysis prepared by Linscott, Law & Greenspan, Engineers (LLG) (2020), to address the removal of the Magnolia Avenue extension as a project feature. Removal of the Magnolia Avenue extension as a project feature results in the shift of traffic from Magnolia Avenue to Cuyamaca Street in the near term. The following revised NTR analysis includes the following scenarios addressed in the revised traffic analysis:

- **Full Access Scenario:** This scenario would allow full access movements from Cuyamaca Street to Princess Joann Road, Woodglen Vista Drive, and El Nopal connecting to Magnolia Avenue.
- **Prohibited Southbound Left-Turns from Cuyamaca Street Scenario:** This scenario would prohibit southbound left-turn movements from Cuyamaca Street to these local streets.

The extension of Magnolia Avenue is a Mobility Element road identified in the Santee General Plan (City of Santee 2003). The long-term (Year 2035) scenario assumes buildout of the Santee General Plan, including Mobility Element roadways. Therefore, the removal of the Magnolia Avenue extension as a project feature does not result in any changes to the long-term (Year 2035) analyses in the NTR. The Year 2035 scenarios analyzed in the NTR are not duplicated in this memorandum because no changes were required.



Project Description

This analysis assumes that the Magnolia Avenue extension has been removed from the project description. The following paragraph replaces Section 2.2.9, Mobility Improvements, in the NTR:

Mobility improvements would include the extension of two roadways identified in the Santee General Plan Mobility Element: (1) the extension of Fanita Parkway from Ganley Road through the project site and (2) the extension of Cuyamaca Street from north of Chaparral Drive through the project site. Additionally, the proposed project proposes to widen Fanita Parkway between Mast Boulevard and Lake Canyon Road and to modify Cuyamaca Street from Mast Boulevard to Chaparral Drive to consist of a four-lane divided street with two travel lanes in each direction, bicycle lanes, and sidewalks.

Existing Conditions

The removal of the Magnolia Avenue extension as a project feature would result in a change in project trip distribution in the Existing + Project and Near-Term + Project scenarios. Without the connection of Magnolia Avenue extended to Cuyamaca Street, it is expected that project trips would use streets such as Princess Joann Road, Woodglen Vista Drive, El Nopal, and Mast Boulevard to reach the same destinations from the eastern project access on Cuyamaca Street. Four roadway segments not previously modeled that would experience an increase in project traffic compared to the previous analysis have been added to the traffic noise analysis. Table 1 provides the existing average daily trips and noise level on these roadways and is a supplement to Table 8, Existing Off-Site Roadway Noise Levels, in Section 3.4.3.2 in the NTR. No changes in existing average daily trips or noise level would occur to the segments previously identified in Table 8.

Table 1. Existing Off-Site Roadway Noise Levels

Roadway	Segment	Existing Average Daily Trips	Noise Level at 50 Feet from Roadway Centerline (dBA Ldn)
Mast Boulevard	Cuyamaca Street to Magnolia Avenue	18,490	64
Princess Joann Road	Cuyamaca Street to Magnolia Avenue	530	45
Woodglen Vista Drive	Cuyamaca Street to Magnolia Avenue	1,700	50
El Nopal	Cuyamaca Street to Magnolia Avenue	3,780	55

Source: LLG 2020 (traffic data). See Attachment 1 for noise model assumptions and output.

Notes: dBA = A-weighted decibel; Ldn = day-night noise level

Methods and Significance Criteria

The following information supplements the methodology description in Section 4.1.1, Excessive Noise Levels, and Section 4.1.2, Groundborne Vibration, in the NTR.

The modeling methodology for the assessment of the proposed project to permanently increase ambient noise levels as a result of increased traffic is the same as the methodology used for the NTR. However, four roadway segments have been added to the Existing and Near-Term scenarios to address changes in project trip distribution without the Magnolia Avenue extension under the Full Access and Prohibited Southbound Left-Turns from Cuyamaca Street scenarios. As stated previously, traffic data is based on the No Magnolia Extension Analysis prepared by LLG (2020). The Magnolia Avenue extension is assumed to be constructed as part of the Santee General Plan buildout, and no changes were made to the Year 2035 analysis.

No change is made to the methodology or modeling of noise levels or groundborne vibration related to construction. However, the following analysis includes a discussion of how construction impacts would be reduced with the removal of the Magnolia Avenue extension.



Impact Analysis and Mitigation Measures

Threshold 1: Exceedance of Noise Standards

The analysis of the permanent increase in traffic noise levels in Section 5.1.1, Threshold 1: Exceedance of Noise Standards, of the NTR has been revised to reflect modified project trip distribution under the Existing + Project and Near-Term + Project scenarios. No change to the Year 2035 scenario is anticipated, and no portion of the Year 2035 analysis is revised below. The following analysis includes the four roadway segments that were not previously modeled that would experience an increase in project traffic compared to the previous analysis and 10 previously modeled segments that would experience a change in trip distribution. Segments that were included in Section 5.1.1 of the NTR that would not be affected by the change in trip distribution are not included below. The analysis provided in the NTR remains the same for these segments.

The traffic analysis prepared by LLG (2020) indicated that the difference in vehicle trips on the affected segments would be de minimis between the Preferred Land Use Plan With School and the Land Use Plan Without School. Consistent with the traffic analysis, this analysis represents the potential impacts of both land use plans. Traffic levels for each roadway are provided in the attachments to this memorandum. A substantial permanent noise increase would occur if implementation of the proposed project were to result in an ambient noise level at 50 feet from the roadway centerline that exceeds the land use compatibility limits established in the Santee General Plan (City of Santee 2003), including 65 A-weighted decibel (dBA) day-night noise level (Ldn) at the property line for residential properties and schools. For conditions where the roadway noise level exceeds the standard without project implementation, a significant impact would occur if the proposed project would result in an increase of 3 dBA or greater at 50 feet from the roadway centerline. The following presents a conservative analysis since actual noise levels at nearby receptors would decrease based on their distance from the roadway and would vary based on each individual receptor's location.

Existing + Project Scenario

Existing noise levels and future increases in traffic with implementation of the proposed project are provided in Table 2 for the Full Access scenario and Table 3 for the Prohibited Southbound Left-Turns from Cuyamaca Street scenario. As shown in these tables, 2 of the 10 existing roadway segments currently generate noise levels at 50 feet from the roadway centerline that exceed applicable thresholds, both on Magnolia Avenue. In addition, the newly modeled segment of Mast Boulevard between Cuyamaca Street and Magnolia Avenue currently generates noise levels that exceed applicable thresholds without implementation of the proposed project. The significant project-related traffic noise impact to one of these already impacted segments, Magnolia Avenue from Woodglen Vista Drive to El Nopal, identified in the NTR would be reduced to below a level of significance under either traffic flow scenario with the removal of the Magnolia Avenue extension because project traffic volume on this segment would be reduced. Additionally, the significant impact to Magnolia Avenue from Princess Joann Road to Woodglen Vista Drive identified in the NTR would be reduced to below a level of significance with the removal of the Magnolia Avenue extension. The impact to Cuyamaca Street from El Nopal to Mast Boulevard identified in the NTR is the same as the impact identified in the NTR under the Full Access scenario. The proposed project's contribution to noise level on this segment is 1 dBA Ldn higher under the Prohibited Southbound Left-Turns from Cuyamaca Street scenario.

Tables 2 and 3 also identify five segments, compared to three segments in the NTR, that exceed applicable thresholds but are not identified as significant. The segments of Cuyamaca Street from the project site to future Magnolia Avenue to Chaparral Drive currently do not exist. This extension would be constructed as part of the proposed project, and noise levels with project operation at 50 feet from the roadway would exceed the applicable threshold of 65 dBA Ldn with implementation of proposed project. However, actual noise levels at the nearest receptors to the impacted segments of Cuyamaca Street would be reduced by

distance and topography compared to the estimated noise level in Tables 2 and 3. The nearest residences, located on Dakota Ranch Road, are more than 100 feet east from the roadway centerline of Cuyamaca Street. At this distance, noise levels would be reduced to less than 65 dBA Ldn, and a significant impact would not occur. Noise levels on Cuyamaca Street from the street's existing terminus to El Nopal would exceed 65 dBA with operation of the proposed project. However, the existing residential subdivisions on Cuyamaca Street north of El Nopal were constructed with masonry and glass barriers along the edge of development on Cuyamaca Street that would reduce noise levels compared to the estimated noise level in Tables 2 and 3. The NTR assumed a minimum noise reduction of 5 dBA for these barriers in accordance with the California Department of Transportation guidance (2013). However, noise technical analysis prepared for the prior residential subdivision project indicates that the barriers were constructed to achieve at least an 8 dBA noise reduction (CEA 1994; Pacific Noise Control 1997). The existing noise barrier is not accounted for in the model and, therefore, would reduce the maximum estimated roadway noise level of 71 dBA Ldn shown in Table 3 on Cuyamaca Street from Chaparral Drive to Woodglen Vista Drive under the Prohibited Southbound Left-Turns from Cuyamaca Street scenario to the acceptable noise level of 65 dBA Ldn or below. Impacts to these segments would be less than significant under the Full Access scenario or the Prohibited Southbound Left-Turns from Cuyamaca Street scenario.

In summary, under either scenario, with the removal of the Magnolia Avenue extension, significant impacts to two roadway segments would be reduced to below a level of significance, and no new impacts are identified under the Existing + Project scenario compared to the conclusions for permanent traffic noise impacts in the NTR. The significant impact to Cuyamaca Street from El Nopal to Mast Boulevard identified in Tables 2 and 3 was previously identified in the NTR and is not a new impact as a result of the elimination of the Magnolia Avenue extension.

Table 2. Existing + Project Traffic Noise Levels – Full Access Scenario

	Table 21 Existing 1 Tojest Hame Holse Levels 1 am Assess Scenario									
Roadway	Segment	Applicable Threshold (dBA Ldn)	Existing (dBA Ldn)	Exceeds Threshold Without Project?	Existing + Project (dBA Ldn)	Increase in Noise Level from Existing	Significant Impact?			
Mast Boulevard	Cuyamaca Street to Magnolia Avenue	65	69	Yes	69	0	No			
Princess Joann Road	Cuyamaca Street to Magnolia Avenue	65	50	No	58	+8	No			
Woodglen Vista Drive	Cuyamaca Street to Magnolia Avenue	65	55	No	57	+2	No			
El Nopal	Cuyamaca Street to Magnolia Avenue	65	60	No	61	+1	No			
	On-Site Portion to Future Magnolia Avenue	65	Does Not Exist	No	67	NA	No ¹			
	Future Magnolia Avenue to Princess Joann Road	65	Does Not Exist	No	67	NA	No ¹			
Cuyamaca Street	Princess Joann Road to Chaparral Drive	65	Does Not Exist	No	66	NA	No ¹			
	Chaparral Drive to Woodglen Vista Drive	65	54	No	69	+15	No ²			
	Woodglen Vista Drive to El Nopal	65	62	No	70	+8	No ²			
	El Nopal to Mast Boulevard	65	65	No	71	+6	Yes			

Table 2. Existing + Project Traffic Noise Levels - Full Access Scenario

Roadway	Segment	Applicable Threshold (dBA Ldn)	Existing (dBA Ldn)	Exceeds Threshold Without Project?	Existing + Project (dBA Ldn)	Increase in Noise Level from Existing	Significant Impact?
Magnolia Avenue	Cuyamaca Street to Princess Joann Road	65	Does Not Exist	No	Does Not Exist	NA	No
	Princess Joann Road to Woodglen Vista Drive	65	60	No	63	+3	No
	Woodglen Vista Drive to El Nopal	65	66	Yes	68	+2	No
	El Nopal to Mast Boulevard	65	68	Yes	69	+1	No

Unless otherwise noted, a substantial permanent increase in vehicle traffic noise would occur if implementation of the proposed project would result in an ambient noise level that exceeds the applicable threshold established in the Santee General Plan (City of Santee 2003). If the normally acceptable standard would be exceeded without project implementation, an increase of more than 3 dBA would be considered significant.

The existing condition represents conditions in 2018. Noise levels are calculated at 50 feet from the roadway centerline. Noise levels are based on the traffic data provided by LLG (2020). Traffic levels for each roadway are included in Attachment 1. Decibel levels are rounded to the nearest whole number. Significant impacts shown are in **bold** and shading. See Attachment 1 for data sheets.

¹ The nearest residences to the future Cuyamaca Street extension, located on Dakota Ranch Road, are more than 100 feet east from the roadway centerline of Cuyamaca Street. At this distance, noise levels would be reduced to less than 65 dBA Ldn.

² The existing noise wall would reduce noise to an acceptable level.



Table 3. Existing + Project Traffic Noise Levels – Prohibited Southbound Left-Turns from Cuyamaca Street Scenario

10.010		Applicable		Exceeds	Existing +	Increase in	
Roadway	Segment	Threshold (dBA Ldn)	Existing (dBA Ldn)	Threshold Without Project?	Project (dBA Ldn)	Noise Level from Existing	Significant Impact?
Mast Boulevard	Cuyamaca Street to Magnolia Avenue	65	69	Yes	70	+1	No
Princess Joann Road	Cuyamaca Street to Magnolia Avenue	65	50	No	55	+5	No
Woodglen Vista Drive	Cuyamaca Street to Magnolia Avenue	65	55	No	56	+1	No
El Nopal	Cuyamaca Street to Magnolia Avenue	65	60	No	61	+1	No
	On-Site Portion to Future Magnolia Avenue	65	Does Not Exist	No	67	NA	No ¹
	Future Magnolia Avenue to Princess Joann Road	65	Does Not Exist	No	67	NA	No ¹
Cuyamaca Street	Princess Joann Road to Chaparral Drive	65	Does Not Exist	No	66	NA	No ¹
	Chaparral Drive to Woodglen Vista Drive	65	54	No	70	+16	No ²
	Woodglen Vista Drive to El Nopal	65	62	No	71	+9	No ²
	El Nopal to Mast Boulevard	65	65	No	72	+7	Yes

Table 3. Existing + Project Traffic Noise Levels - Prohibited Southbound Left-Turns from Cuyamaca Street Scenario

Roadway	Segment	Applicable Threshold (dBA Ldn)	Existing (dBA Ldn)	Exceeds Threshold Without Project?	Existing + Project (dBA Ldn)	Increase in Noise Level from Existing	Significant Impact?
Magnolia Avenue	Cuyamaca Street to Princess Joann Road	65	Does Not Exist	No	Does Not Exist	NA	No
	Princess Joann Road to Woodglen Vista Drive	65	60	No	62	+2	No
	Woodglen Vista Drive to El Nopal	65	66	Yes	67	+1	No
	El Nopal to Mast Boulevard	65	68	Yes	69	+1	No

Unless otherwise noted, a substantial permanent increase in vehicle traffic noise would occur if implementation of the proposed project would result in an ambient noise level that exceeds the applicable threshold established in the Santee General Plan (City of Santee 2003). If the normally acceptable standard would be exceeded without project implementation, an increase of more than 3 dBA would be considered significant.

The existing condition represents conditions in 2018. Noise levels are calculated at 50 feet from the roadway centerline. Noise levels are based on the traffic data provided by LLG (2020). Traffic levels for each roadway are included in Attachment 2. Decibel levels are rounded to the nearest whole number. Significant impacts are shown in **bold** and shading. See Attachment 2 for data sheets.

¹ The nearest residences to the future Cuyamaca Street extension, located on Dakota Ranch Road, are more than 100 feet east from the roadway centerline of Cuyamaca Street. At this distance, noise levels would be reduced to less than 65 dBA Ldn.

² The existing noise wall would reduce noise to an acceptable level.



Near-Term Scenario

The Near-Term scenario includes development of the proposed project and cumulative projects (LLG 2020). Near-term traffic noise levels, with and without the proposed project, are provided in Tables 4 and 5. As shown in these tables, 2 of the 10 existing roadway segments would generate noise levels at 50 feet from the roadway centerline that exceed applicable thresholds, both on Magnolia Avenue. In addition, the newly modeled segment of Mast Boulevard between Cuyamaca Street and Magnolia Avenue would generate noise levels that exceed applicable thresholds without project implementation. The significant project-related traffic noise impact to one of these already impacted segments, Magnolia Avenue from Woodglen Vista Drive to El Nopal, identified in the NTR would be reduced to below a level of significance under either scenario with the removal of the Magnolia Avenue extension because project traffic volume would be reduced. Additionally, the significant impact to Magnolia Avenue from Princess Joann Road to Woodglen Vista Drive identified in the NTR would be reduced to below a level of significance with the removal of the Magnolia Avenue extension. The impact to Cuyamaca Street from El Nopal to Mast Boulevard identified in the NTR is the same as the impact identified in the NTR under the Full Access scenario. The proposed project's contribution to noise level on this segment is 1 dBA Ldn higher under the Prohibited Southbound Left-Turns from Cuyamaca Street scenario.

Tables 4 and 5 also identify five segments, compared to three segments in the NTR, that exceed applicable thresholds but are not identified as significant. The segments of Cuyamaca Street from the project site to future Magnolia Avenue to Chaparral Drive currently do not exist. This extension would be constructed as part of the proposed project, and noise levels with project operation at 50 feet from the roadway would exceed the applicable threshold of 65 dBA Ldn with implementation of proposed project. However, actual noise levels at the nearest receptors to the impacted segments of Cuyamaca Street would be reduced by distance and topography compared to the estimated noise level in Tables 4 and 5. The nearest residences, located on Dakota Ranch Road, are more than 100 feet east from the roadway centerline of Cuyamaca Street. At this distance, noise levels would be reduced to less than 65 dBA Ldn, and a significant impact would not occur. Noise levels on Cuyamaca Street from its existing terminus to El Nopal would exceed 65 dBA with operation of the proposed project. However, the existing noise barriers at residences along Cuyamaca Street would reduce the maximum estimated roadway noise level of 71 dBA Ldn on Cuyamaca Street from Chaparral Drive to Woodglen Vista Drive to the acceptable noise level of 65 dBA Ldn or below. Impacts to these segments would be less than significant under the Full Access scenario or the Prohibited Southbound Left-Turns from Cuyamaca Street scenario.

In summary, under either scenario, with the removal of the Magnolia Avenue extension, significant impacts at two roadway segments would be reduced to below a level of significance, and no new impacts are identified under the Near-Term scenario compared to the conclusions of the NTR related to permanent noise impacts under the Near-Term scenario. The significant impact identified in Tables 4 and 5 to Cuyamaca Street from El Nopal to Mast Boulevard was previously identified in the NTR and is not a new impact as a result of the elimination of the Magnolia Avenue extension.

Table 4. Near-Term Traffic Noise Levels – Full Access Scenario

Table 4. Near-Term Traffic Noise Levels - Full Access Scenario									
Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term No Project (dBA Ldn)	Exceeds Threshold Without Project?	Near-Term + Project (dBA Ldn)	Increase in Noise Level from Near-Term No Project	Significant Impact?		
Mast Boulevard	Cuyamaca Street to Magnolia Avenue	65	70	Yes	70	0	No		
Princess Joann Road	Cuyamaca Street to Magnolia Avenue	65	51	No	58	+7	No		
Woodglen Vista Drive	Cuyamaca Street to Magnolia Avenue	65	55	No	58	+3	No		
El Nopal	Cuyamaca Street to Magnolia Avenue	65	60	No	61	+1	No		
	On-Site Portion to Magnolia Avenue	65	Does Not Exist	No	67	NA	No ¹		
	Magnolia Avenue to Princess Joann Road	65	Does Not Exist	No	67	NA	No ¹		
Cuyamaca Street	Princess Joann Road to Chaparral Drive	65	Does Not Exist	No	66	NA	No ¹		
	Chaparral Drive to Woodglen Vista Drive	65	54	No	69	+15	No ²		
	Woodglen Vista Drive to El Nopal	65	62	No	70	+8	No ²		
	El Nopal to Mast Boulevard	65	65	No	71	+6	Yes		

Table 4. Near-Term Traffic Noise Levels – Full Access Scenario

Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term No Project (dBA Ldn)	Exceeds Threshold Without Project?	Near-Term + Project (dBA Ldn)	Increase in Noise Level from Near-Term No Project	Significant Impact?
Magnolia Avenue	Cuyamaca Street to Princess Joann Road	65	Does Not Exist	No	Does Not Exist	NA	No
	Princess Joann Road to Woodglen Vista Drive	65	60	No	63	+3	No
	Woodglen Vista Drive to El Nopal	65	66	Yes	68	+2	No
	El Nopal to Mast Boulevard	65	68	Yes	69	+1	No

Unless otherwise noted, a substantial permanent increase in vehicle traffic noise would occur if implementation of the proposed project would result in an ambient noise level that exceeds the applicable threshold established in the Santee General Plan (City of Santee 2003). If the normally acceptable standard would be exceeded without project implementation, an increase of more than 3 dBA would be considered significant.

Noise levels are calculated at 50 feet from the roadway centerline. Noise levels are based on the traffic data provided by LLG (2020). Traffic levels for each roadway are included in Attachment 1. Decibel levels are rounded to the nearest whole number. Significant impacts are shown in **bold** and **shading**. See Attachment 1 for data sheets.

¹ The nearest residences to the future Cuyamaca Street extension, located on Dakota Ranch Road, are more than 100 feet east from the roadway centerline of Cuyamaca Street. At this distance, noise levels would be reduced to less than 65 dBA Ldn.

² The existing noise wall would reduce noise to an acceptable noise level.



Table 5. Near-Term Traffic Noise Levels – Prohibited Southbound Left-Turns from Cuyamaca Street Scenario

	Table 5. Near-Tern	ii ii aiiic Noise Le	veis – Prombiteu s		urns from Cuyam		
				Exceeds		Increase in	
		Applicable	Near-Term	Threshold	Near-Term +	Noise Level	
		Threshold	No Project	Without	Project	from Near-Term	Significant
Roadway	Segment	(dBA Ldn)	(dBA Ldn)	Project?	(dBA Ldn)	No Project	Impact?
Mast Boulevard	Cuyamaca Street to Magnolia Avenue	65	70	Yes	70	0	No
Princess Joann Road	Cuyamaca Street to Magnolia Avenue	65	51	No	56	+5	No
Woodglen Vista Drive	Cuyamaca Street to Magnolia Avenue	65	55	No	57	+2	No
El Nopal	Cuyamaca Street to Magnolia Avenue	65	60	No	61	+1	No
	On-Site Portion to Magnolia Avenue	65	Does Not Exist	No	67	NA	No ¹
	Magnolia Avenue to Princess Joann Road	65	Does Not Exist	No	67	NA	No ¹
Cuyamaca Street	Princess Joann Road to Chaparral Drive	65	Does Not Exist	No	66	NA	No ¹
	Chaparral Drive to Woodglen Vista Drive	65	54	No	70	+16	No ²
	Woodglen Vista Drive to El Nopal	65	62	No	71	+9	No ²
	El Nopal to Mast Boulevard	65	65	No	72	+7	Yes

Table 5. Near-Term Traffic Noise Levels – Prohibited Southbound Left-Turns from Cuyamaca Street Scenario

Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term No Project (dBA Ldn)	Exceeds Threshold Without Project?	Near-Term + Project (dBA Ldn)	Increase in Noise Level from Near-Term No Project	Significant Impact?
	Cuyamaca Street to Princess Joann Road	65	Does Not Exist	No	Does Not Exist	NA	No
Magnolia Avenue	Princess Joann Road to Woodglen Vista Drive	65	60	No	62	+2	No
	Woodglen Vista Drive to El Nopal	65	66	Yes	67	+1	No
	El Nopal to Mast Boulevard	65	68	Yes	69	+1	No

Unless otherwise noted, a substantial permanent increase in vehicle traffic noise would occur if implementation of the proposed project would result in an ambient noise level that exceeds the applicable threshold established in the Santee General Plan (City of Santee 2003). If the normally acceptable standard would be exceeded without project implementation, an increase of more than 3 dBA would be considered significant.

Noise levels are calculated at 50 feet from the roadway centerline. Noise levels are based on the traffic data provided by LLG (2020). Traffic levels for each roadway are included in Attachment 2. Decibel levels are rounded to the nearest whole number. Significant impacts are shown in **bold** and shading. See Attachment 2 for data sheets.

¹ The nearest residences to the future Cuyamaca Street extension, located on Dakota Ranch Road, are more than 100 feet east from the roadway centerline of Cuyamaca Street. At this distance, noise levels would be reduced to less than 65 dBA Ldn.

² The existing noise wall would reduce noise to an acceptable noise level.



Mitigation Measures

Permanent Increase in Vehicle Noise

Table 6 replaces Table 16, Significant Permanent Vehicle Noise Impact Summary, in the NTR to provide a summary of the permanent vehicle impacts and where they would occur with the removal of the Magnolia Avenue extension from the proposed project. Significant noise impacts to Magnolia Avenue have been reduced to below a level of significance with the removal of the Magnolia Avenue extension. Therefore, mitigation to reduce noise levels on Magnolia Avenue is no longer needed. The impacts to Fanita Parkway and Cuyamaca Street would remain the same as those identified in the NTR under the Full Access scenario. Table 6 provides the worst-case scenario that would occur to Cuyamaca Street under the Prohibited Southbound Left-Turns from Cuyamaca Street scenario.

Table 6. Significant Permanent Vehicle Noise Impact Summary

Roadway	Segment	Scenario When Impact Would Occur	Maximum Noise Level at 50 Feet (dBA Ldn)
	On-Site Portion to Ganley Road	 Existing + Project Near-Term + Project Year 2035 + Project Cumulatively Considerable 	66
Fanita Parkway	Ganley Road to Lake Canyon Road	 Existing + Project Near-Term + Project Year 2035 + Project Cumulatively Considerable 	70
	Lake Canyon Road to Mast Boulevard	 Existing + Project Near-Term + Project Year 2035 + Project Cumulatively Considerable 	70
Cuyamaca Street (Silver Country Estates)	El Nopal to Mast Boulevard	Existing + ProjectNear-Term + Project	72

Source: Harris & Associates 2020.

Notes: dBA = A-weighted decibel; Ldn = day-night average sound level

Mitigation Measure NOI-2 has been revised to remove the requirement for installation of a noise barrier on Magnolia Avenue. The following Mitigation Measure NOI-2 replaces the measure in the NTR and Final Environmental Impact Report.

NOI-2:

Noise Barrier Installation. Permanent noise barriers shall be installed on the western side of Fanita Parkway from Mast Boulevard to the project site and on the eastern side of Cuyamaca Street from Mast Boulevard to El Nopal in conjunction with proposed improvements to these roadways. The noise barriers shall be designed by a qualified acoustical engineer. The applicant shall submit an analysis to the Director of Development Services prior to the start of construction that demonstrates that the proposed noise barriers would reduce traffic noise exposure at residential receptors to a 65-A-weighted-decibel community noise equivalent level or below on Fanita



Parkway and Cuyamaca Street. Noise barriers shall be installed concurrently with the following proposed roadway improvements:

- Extension and widening of Fanita Parkway prior to the commencement of building construction activity on site
- Extension and widening of Cuyamaca Street prior to issuance of the first certificate of occupancy

Additionally, Table 7 replaces Table 17, Permanent Vehicle Noise Impact with Noise Barrier Installation Mitigation, in the NTR to remove references to the impact on Magnolia Avenue. No change to the impacts to Fanita Parkway and Cuyamaca Street following mitigation would occur as a result of removal of the Magnolia Avenue extension from the proposed project. The impacts identified in Table 7 are the same as those identified in the NTR, except for the Magnolia Avenue impact, which has been eliminated.

Table 7. Permanent Vehicle Noise Impact with Noise Barrier Installation Mitigation

Roadway	Segment	Mitigation	Unmitigated Worst- Case Noise Level (dBA Ldn)	Worst-Case + Project Noise Level with Mitigation (dBA Ldn) ¹	Significant Impact?
	On-Site Portion to Ganley Road – western side of street	Noise Barrier Installation (NOI-2)	66	61	No
	On-Site Portion to Ganley Road – eastern side of street	No feasible mitigation	66	66	Yes
Fanita Parkway	Ganley Road to Lake Canyon Road – western side of street	Noise Barrier Installation (NOI-2)	70	65	No
railla raikway	Ganley Road to Lake Canyon Road – eastern side of street	No feasible mitigation	70	70	Yes
	Lake Canyon Road to Mast Boulevard – western side of street	Noise Barrier Installation (NOI-2)	70	65	No
	Lake Canyon Road to Mast Boulevard – eastern side of street	No feasible mitigation	70	70	Yes
Cuyamaca Street	El Nopal to Mast Boulevard – western side of street	No feasible mitigation	72	72	Yes
(Silver Country Estates)	El Nopal to Mast Boulevard – eastern side of street	Noise Barrier Installation (NOI-2)	72	65	No

Source: Harris & Associates 2020.

Notes: dBA = A-weighted decibel; Ldn = day-night average sound level

Significant impacts shown are in **bold** and shading.

¹ Due to differences in topography between receptors and roadways along the impacted segments, required noise barrier height and design will vary. As previously stated, at a minimum, a noise reduction of 5 dBA would be achieved, and up to 30 dBA is typical. Table 7 assumes the minimum noise reduction required to mitigate impacts for the segment of Cuyamaca Street from El Nopal to Mast Boulevard (7 dBA reduction). Final barrier design may achieve higher reductions.



Temporary Noise Increase

Construction of the proposed project would have the potential to result in temporary noise level increases as a result of increased traffic volumes and the operation of heavy equipment. These analyses have been revised to reflect the removal of the Magnolia Avenue extension as a project feature.

Construction Traffic Noise

Removal of the Magnolia Avenue extension as a project feature would not result in any change in traffic volumes during the Existing + Construction scenario because it was previously assumed that the Magnolia Avenue connection would not be available until after Phase 1 of construction. All construction traffic was assumed to use Fanita Parkway during the Existing + Construction scenario. Therefore, construction traffic modeling was not revised for this scenario, and no changes to the analysis or results in the NTR occurred.

However, the Near-Term + Interim Operation + Construction scenario assumes 50 percent of traffic volumes from full operation of the proposed project to determine whether construction would result in a significant temporary increase in noise level compared to noise levels without construction. The Near-Term + Interim + Construction scenario has been revised to reflect the revised interim operation trip distribution under the Full Access and Prohibited Southbound Left-Turns from Cuyamaca Street scenarios. No change to estimated construction trip generation would occur. Only roadway segments that would experience a change in trip distribution as a result of the removal of the Magnolia extension as a project feature are included in the revised analysis.

Tables 8 and 9 provide the estimated traffic noise levels for interim operation and construction activities other than building construction compared to near-term noise levels without the proposed project under each scenario. Tables 10 and 11 provide the estimated traffic noise levels compared to near-term noise levels during a building construction period and interim operation.

As shown in Tables 8 through 11, compared to existing conditions, several roadways would experience a significant increase in noise level in the Near-Term + Interim Operation + Construction scenario compared to conditions without the proposed project. However, these increases would be primarily attributable to the increase in permanent operational traffic rather than construction traffic and, therefore, are not a significant impact related to construction traffic. Significant increases in noise level attributable to operation are addressed in the analysis of permanent impacts above. As shown in Tables 8 and 9, no significant impacts associated with construction traffic noise would occur during activities without building construction under either traffic flow scenario. As shown in Tables 10 and 11, construction traffic noise levels during building construction would result in temporary significant noise impacts on one segment of Magnolia Avenue (Princess Joann Road to Woodglen Vista Drive) under either scenario. This significant and mitigated impact was previously identified in the NTR. The NTR also previously identified an impact to Magnolia Avenue from Woodglen Vista Drive to El Nopal under the Near-Term + Interim Operation + Building Construction scenario. With the elimination of the Magnolia Avenue extension, traffic noise levels with building construction would be the same on this segment under either traffic flow scenario compared to levels in the NTR. Because noise levels on this roadway segment would exceed the applicable 65 dBA Ldn threshold without the proposed project, and the increase in noise attributable to construction would be less than 3 dBA on this roadway segment, this impact would not be significant, and Tables 10 and 11 make this revision to the NTR. It should be noted that implementation of Mitigation Measure NOI-5 would continue to eliminate truck traffic on this segment regardless of significance determination because truck traffic would be prohibited on the length of Magnolia Avenue north of Mast Boulevard. No change to the impact to Fanita Parkway identified in the NTR occurred.

Table 8. Near-Term + Interim Operation and Construction Traffic Noise Levels (Construction Activities Other Than Building Construction) – Full Access Scenario

			Full	Access Scenari	0			
Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term (dBA Ldn)	Exceeds Threshold Without Interim Operation and Construction?	Near-Term + Interim Operation (dBA Ldn)	Near-Term + Interim Operation + Construction (dBA Ldn)	Increase Attributable to Construction ¹	Significant Additional Impact?
Mast Boulevard	Cuyamaca Street to Magnolia Avenue	65	70	Yes	70	70	0	No
Princess Joann Road	Cuyamaca Street to Magnolia Avenue	65	51	No	56	56	0	No
Woodglen Vista Drive	Cuyamaca Street to Magnolia Avenue	65	55	No	57	57	0	No
El Nopal	Cuyamaca Street to Magnolia Avenue	65	60	No	61	61	0	No
	On-Site Portion to Magnolia Avenue	65	Does Not Exist	No	64	64	0	No
	Magnolia Avenue to Princess Joann Road	65	Does Not Exist	No	64	64	0	No
Cuyamaca Street	Princess Joann Road to Chaparral Drive	65	Does Not Exist	No	63	63	0	No
	Chaparral Drive to Woodglen Vista Drive	65	54	No	67	67	0	No
	Woodglen Vista Drive to El Nopal	65	62	No	68	68	0	No

Table 8. Near-Term + Interim Operation and Construction Traffic Noise Levels (Construction Activities Other Than Building Construction) – Full Access Scenario

Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term (dBA Ldn)	Exceeds Threshold Without Interim Operation and Construction?	Near-Term + Interim Operation (dBA Ldn)	Near-Term + Interim Operation + Construction (dBA Ldn)	Increase Attributable to Construction ¹	Significant Additional Impact?
	El Nopal to Mast Boulevard	65	65	No	70	70	0	No
	Cuyamaca Street to Princess Joann Road	65	Does Not Exist	No	Does Not Exist	Does Not Exist	0	No
Magnolia Avenue	Princess Joann Road to Woodglen Vista Drive	65	60	No	62	62	0	No
	Woodglen Vista Drive to El Nopal	65	66	Yes	67	67	0	No
	El Nopal to Mast Boulevard	65	68	Yes	69	69	0	No

Notes: dBA = A-weighted decibel; Ldn = day-night average sound level

Unless otherwise noted, a substantial temporary increase in vehicle traffic noise would occur if implementation of the proposed project construction would result in an ambient noise level that exceeds the applicable threshold established in the Santee General Plan (City of Santee 2003). If the normally acceptable standard would be exceeded without the addition of construction traffic, an increase of more than 3 dBA attributable to construction traffic would be considered significant.

The existing condition represents conditions in 2018. Noise levels are calculated at 50 feet from the roadway centerline. Noise levels are based on the traffic data provided by LLG (2020) and LSA (2020). Traffic levels for each roadway are included in Attachment 3. Decibel levels are rounded to the nearest whole number. See Attachment 3 for data sheets.

¹ An increase attributable to construction is the increase in noise level from Near-Term + Interim Operation to Near-Term + Interim Operation + Construction.

Table 9. Near-Term + Interim Operation and Construction Traffic Noise Levels (Construction Activities Other than Building Construction) – Prohibited Southbound Left-Turns from Cuyamaca Street Scenario

		Prombited :	Southbound Le	rt-Turns from Ci	ayamaca Street	Scenario		
Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term (dBA Ldn)	Exceeds Threshold Without Interim Operation and Construction?	Near-Term + Interim Operation (dBA Ldn)	Near-Term + Interim Operation + Construction (dBA Ldn)	Increase Attributable to Construction ¹	Significant Additional Impact?
Mast Boulevard	Cuyamaca Street to Magnolia Avenue	65	70	Yes	70	70	0	No
Princess Joann Road	Cuyamaca Street to Magnolia Avenue	65	51	No	54	54	0	No
Woodglen Vista Drive	Cuyamaca Street to Magnolia Avenue	65	55	No	56	56	0	No
El Nopal	Cuyamaca Street to Magnolia Avenue	65	60	No	60	61	+1	No
	On-Site Portion to Magnolia Avenue	65	Does Not Exist	No	64	64	0	No
	Magnolia Avenue to Princess Joann Road	65	Does Not Exist	No	64	64	0	No
Cuyamaca Street	Princess Joann Road to Chaparral Drive	65	Does Not Exist	No	63	64	+1	No
	Chaparral Drive to Woodglen Vista Drive	65	54	No	67	67	0	No
	Woodglen Vista Drive to El Nopal	65	62	No	69	69	0	No

Table 9. Near-Term + Interim Operation and Construction Traffic Noise Levels (Construction Activities Other than Building Construction) –
Prohibited Southbound Left-Turns from Cuyamaca Street Scenario

Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term (dBA Ldn)	Exceeds Threshold Without Interim Operation and Construction?	Near-Term + Interim Operation (dBA Ldn)	Near-Term + Interim Operation + Construction (dBA Ldn)	Increase Attributable to Construction ¹	Significant Additional Impact?
	El Nopal to Mast Boulevard	65	65	No	70	70	0	No
	Cuyamaca Street to Princess Joann Road	65	Does Not Exist	No	Does Not Exist	Does Not Exist	0	No
Magnolia Avenue	Princess Joann Road to Woodglen Vista Drive	65	60	No	61	61	0	No
	Woodglen Vista Drive to El Nopal	65	66	Yes	67	67	0	No
	El Nopal to Mast Boulevard	65	68	Yes	69	69	0	No

Notes: dBA = A-weighted decibel; Ldn = day-night average sound level

Unless otherwise noted, a substantial temporary increase in vehicle traffic noise would occur if implementation of the proposed project construction would result in an ambient noise level that exceeds the applicable threshold established in the Santee General Plan (City of Santee 2003). If the normally acceptable standard would be exceeded without the addition of construction traffic, an increase of more than 3 dBA attributable to construction traffic would be considered significant.

The existing condition represents conditions in 2018. Noise levels are calculated at 50 feet from the roadway centerline. Noise levels are based on traffic data provided by LLG (2020) and LSA (2020). Traffic levels for each roadway are included in Attachment 4. Decibel levels are rounded to the nearest whole number. See Attachment 4 for data sheets.

¹ An increase attributable to construction is the increase in noise level from Near-Term + Interim Operation to Near-Term + Interim Operation + Construction.

Table 10. Near-Term + Interim Operation and Building Construction Traffic Noise Levels

Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term (dBA Ldn)	Exceeds Threshold Without Construction?	Near-Term + Interim Operation (dBA Ldn)	Near-Term + Interim Project + Construction (dBA Ldn)	Increase Attributable to Construction ¹	Significant Additional Impact?
Mast Boulevard	Cuyamaca Street to Magnolia Avenue	65	70	Yes	70	71	+1	No
Princess Joann Road	Cuyamaca Street to Magnolia Avenue	65	51	Yes	56	63	+7	No
Woodglen Vista Drive	Cuyamaca Street to Magnolia Avenue	65	55	Yes	57	63	+6	No
El Nopal	Cuyamaca Street to Magnolia Avenue	65	60	No	61	65	+4	No
	On-Site Portion to Magnolia Avenue	65	Does Not Exist	No	64	66	+2	No ²
	Magnolia Avenue to Princess Joann Road	65	Does Not Exist	No	64	66	+2	No
Cuyamaca Street	Princess Joann Road to Chaparral Drive	65	Does Not Exist	No	63	66	+3	No ²
	Chaparral Drive to Woodglen Vista Drive	65	54	No	67	69	+2	No
	Woodglen Vista Drive to El Nopal	65	62	No	68	70	+2	No

Table 10. Near-Term + Interim Operation and Building Construction Traffic Noise Levels

Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term (dBA Ldn)	Exceeds Threshold Without Construction?	Near-Term + Interim Operation (dBA Ldn)	Near-Term + Interim Project + Construction (dBA Ldn)	Increase Attributable to Construction ¹	Significant Additional Impact?
	El Nopal to Mast Boulevard	65	65	No	70	71	+1	No
	Cuyamaca Street to Princess Joann Road	65	Does Not Exist	No	Does Not Exist	Does Not Exist	0	No
Magnolia Avenue	Princess Joann Road to Woodglen Vista Drive	65	60	No	62	66	+4	Yes
	Woodglen Vista Drive to El Nopal	65	66	Yes	67	69	+2	No
	El Nopal to Mast Boulevard	65	68	Yes	69	70	+1	No

Unless otherwise noted, a substantial temporary increase in vehicle traffic noise would occur if implementation of the proposed project construction would result in an ambient noise level that exceeds the applicable threshold established in the Santee General Plan (City of Santee 2003). If the normally acceptable standard would be exceeded without the addition of construction traffic, an increase of more than 3 dBA attributable to construction traffic would be considered significant.

Noise levels are calculated at 50 feet from the roadway centerline. Noise levels are based on the traffic data provided by LLG (2020) and LSA (2020). Traffic levels for each roadway are included in Attachment 5. Decibel levels are rounded to the nearest whole number. Significant impacts shown in **bold** and shading. See Attachment 5 for data sheets.

¹ An increase attributable to construction is the increase in noise level from Near-Term + Interim Operation to Near-Term + Interim Operation + Construction.

² The nearest residences to the proposed Cuyamaca Street extension, located on Dakota Ranch Road, are more than 100 feet east from the roadway centerline of Cuyamaca Street. At this distance, noise levels would be reduced to less than 65 dBA Ldn.

³ The existing noise wall would reduce noise to an acceptable level.

Table 11. Near-Term + Interim Operation and Building Construction Traffic Noise Levels – Prohibited Southbound Left-Turns from Cuyamaca Street Scenario

				iaca Street Seen				
Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term (dBA Ldn)	Exceeds Threshold Without Construction?	Near-Term + Interim Operation (dBA Ldn)	Near-Term + Interim Project + Construction (dBA Ldn)	Increase Attributable to Construction ¹	Significant Additional Impact?
Mast Boulevard	Cuyamaca Street to Magnolia Avenue	65	70	Yes	70	71	+1	No
Princess Joann Road	Cuyamaca Street to Magnolia Avenue	65	51	Yes	54	63	+9	No
Woodglen Vista Drive	Cuyamaca Street to Magnolia Avenue	65	55	Yes	56	63	+7	No
El Nopal	Cuyamaca Street to Magnolia Avenue	65	60	No	60	64	+4	No
	On-Site Portion to Magnolia Avenue	65	Does Not Exist	No	64	66	+2	No ²
	Magnolia Avenue to Princess Joann Road	65	Does Not Exist	No	64	66	+2	No
Cuyamaca Street	Princess Joann Road to Chaparral Drive	65	Does Not Exist	No	63	66	+3	No ²
	Chaparral Drive to Woodglen Vista Drive	65	54	No	67	69	+2	No
	Woodglen Vista Drive to El Nopal	65	62	No	69	70	+1	No

Table 11. Near-Term + Interim Operation and Building Construction Traffic Noise Levels – Prohibited Southbound Left-Turns from Cuyamaca Street Scenario

Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term (dBA Ldn)	Exceeds Threshold Without Construction?	Near-Term + Interim Operation (dBA Ldn)	Near-Term + Interim Project + Construction (dBA Ldn)	Increase Attributable to Construction ¹	Significant Additional Impact?
	El Nopal to Mast Boulevard	65	65	No	70	71	+1	No
	Cuyamaca Street to Princess Joann Road	65	Does Not Exist	No	Does Not Exist	Does Not Exist	0	No
Magnolia Avenue	Princess Joann Road to Woodglen Vista Drive	65	60	No	61	66	+5	Yes
	Woodglen Vista Drive to El Nopal	65	66	Yes	67	69	+2	No
	El Nopal to Mast Boulevard	65	68	Yes	69	70	+1	No

Unless otherwise noted, a substantial temporary increase in vehicle traffic noise would occur if implementation of the proposed project construction would result in an ambient noise level that exceeds the applicable threshold established in the Santee General Plan (City of Santee 2003). If the normally acceptable standard would be exceeded without the addition of construction traffic, an increase of more than 3 dBA attributable to construction traffic would be considered significant.

Noise levels are calculated at 50 feet from the roadway centerline. Noise levels are based on traffic data provided by LLG (2020) and LSA (2020). Traffic levels for each roadway are included in Attachment 6. Decibel levels are rounded to the nearest whole number. Significant impacts are shown in **bold** and shading. See Attachment 6 for data sheets.

¹ An increase attributable to construction is the increase in noise level from Near-Term + Interim Operation to Near-Term + Interim Operation + Construction.

² The nearest residences to the proposed Cuyamaca Street extension, located on Dakota Ranch Road, are more than 100 feet east from the roadway centerline of Cuyamaca Street. At this distance, noise levels would be reduced to less than 65 dBA Ldn.

³ The existing noise wall would reduce noise to an acceptable level.

A previously identified impact to Magnolia Avenue (Princess Joann Road to Woodglen Vista Drive) is identified during building construction activities under either traffic flow scenario in the Near-Term + Interim Operation + Construction analysis with the removal of the Magnolia Avenue extension. Mitigation Measure NOI-5, which prohibits construction truck trips on Magnolia Avenue, would continue to be required under either scenario and would reduce this impact to a less than significant level.

Table 12 revises the impact to Magnolia Avenue in Table 18, Interim Traffic Noise Impacts (Unmitigated), in the NTR to reflect the reduced but still significant maximum noise level on Magnolia Avenue (Princess Joann Road to Woodglen Vista Drive) and remove the impact to Magnolia Avenue from Woodglen Vista Drive to El Nopal. Table 13 revises the mitigated noise levels on Magnolia Avenue (Princess Joann Road to Woodglen Vista Drive) in Table 19, Mitigation Interim Traffic Noise Impacts, in the NTR and removes Magnolia Avenue (Woodglen Vista Drive to El Nopal) from the list of impacted segments. There is no change to Fanita Parkway in either table because impacts to this segment would be same before or after mitigation.

Table 12. Interim Traffic Noise Impacts (Unmitigated)

Roadway	Segment	Scenario When Impact Would Occur	Maximum Noise Level at 50 Feet (dBA Ldn)
	On-Site Portion to Ganley Road	Near-Term + Interim Operation + Building Construction	66
Fanita Parkway	Ganley Road to Lake Canyon Road	Existing + Building Construction	67
	Lake Canyon Road to Mast Boulevard	Existing + Building Construction	68
Magnolia Avenue	Princess Joann Road to Woodglen Vista Drive	Near-Term + Interim Operation + Building Construction (see Tables 10 and 11)	66

Sources: Harris & Associates 2020.

Notes: dBA = A-weighted decibel; Ldn = day-night average sound level

Table 13. Mitigated Interim Traffic Noise Impacts

Roadway	Segment	Applicable Threshold (dBA Ldn)	Conditions without Construction (dBA Ldn)	Conditions Exceed Threshold Without Construction?	Mitigated Construction Noise Level (dBA Ldn)	Increase in Noise Level	Significant Impact?
	On-Site Portion to Ganley Road (NOI-5)	65	Does Not Exist	No	65	_	No
Fanita Parkway	Ganley Road to Lake Canyon Road (NOI-4 and NOI-5)	65	59	No	64	+5	No
	Lake Canyon Road to Mast Boulevard (NOI-4 and NOI-5)	65	61	No	65	+4	No
Magnolia Avenue	Princess Joann Road to Woodglen Vista Drive (NOI-5)	65	62	No	63	+1	No

Source: Harris & Associates 2020.

Notes: dBA = A-weighted decibel; Ldn = day-night average sound level

A substantial temporary increase in vehicle traffic noise would occur if implementation of the proposed project construction would result in an ambient noise level that exceeds the applicable threshold established in the Santee General Plan (City of Santee 2003). If the normally acceptable standard would be exceeded without the addition of construction traffic, an increase of more than 3 dBA attributable to construction traffic would be considered significant. With mitigation, noise levels would not exceed the applicable threshold of 65 dBA Ldn.



Construction Equipment Noise

The analysis of potential impacts from construction equipment in the NTR concluded that operation of heavy equipment during construction would have the potential to create substantial short-term noise increases to residences within 300 feet of the construction areas along Fanita Parkway, Cuyamaca Street, and Magnolia Avenue and dead-end roadway improvements on the southern boundary of the site. Impacts to residences within 300 feet of the Magnolia Avenue extension are eliminated with the removal of the extension from the proposed project. Mitigation Measures NOI-6 and NOI-7 would continue to be required for the remaining construction impacts, and no change to these measures has been made.

Threshold 2: Excessive Groundborne Vibration or Noise

The analysis in Section 5.1.2, Threshold 2: Excessive Groundborne Vibration or Noise, of the NTR concluded that operation of construction equipment equivalent to a vibratory roller would result in a potentially significant nuisance impact, including during construction of the Magnolia Avenue extension. Impacts related to the construction of the Magnolia Avenue extension are eliminated with the removal of this project feature. Mitigation Measures NOI-6 through NOI-9 would continue to be required for the remaining construction impacts, and no changes to these measures have been made.

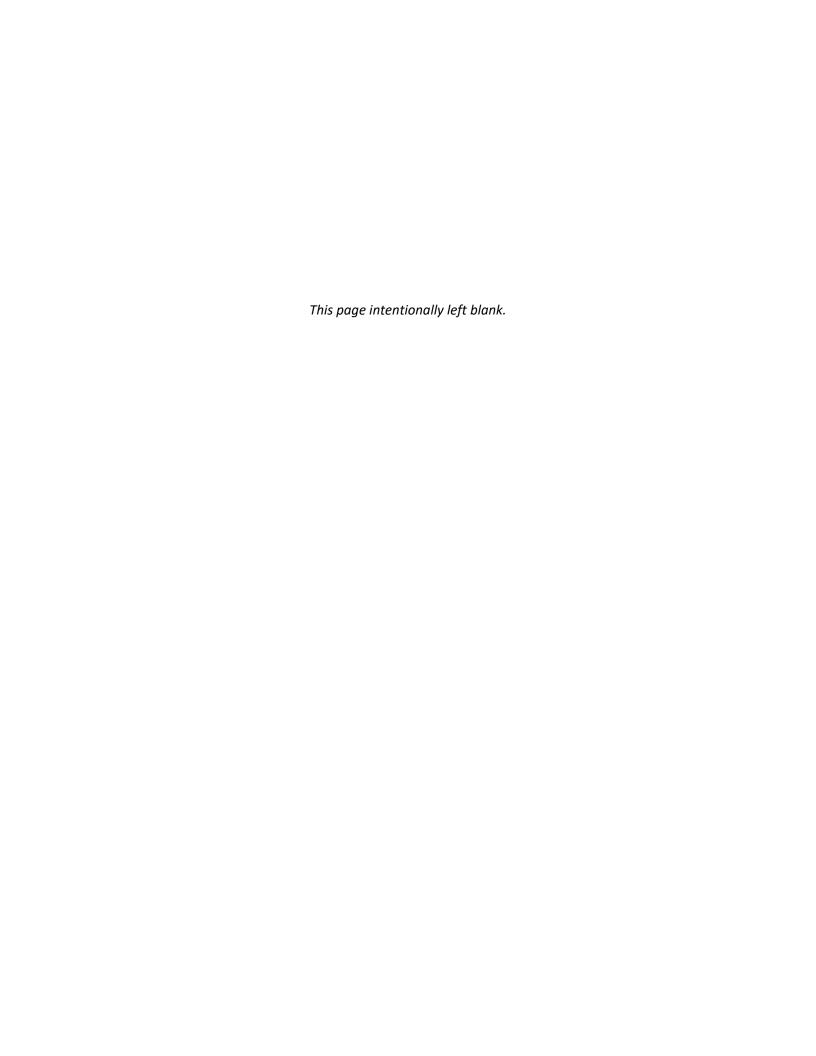
Summary

No new significant impacts have been identified as a result of the removal of the Magnolia Avenue extension as a project feature. The significant impacts to noise levels on Magnolia Avenue from Princess Joann Road to El Nopal during project operation identified in the NTR would be eliminated with the removal of the extension. Additionally, construction noise and vibration impacts associated with construction of the Magnolia Avenue extension would be eliminated. A significant impact to the existing Magnolia Avenue roadway segment of Princess Joann Road to Woodglen Vista Drive during building construction and interim operation would continue to occur with the removal of the Magnolia Avenue extension and would be mitigated to less than significant with implementation of Mitigation Measure NOI-5. All other impacts remain the same as those identified in the NTR.

References

- Caltrans (California Department of Transportation). 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol. September.
- CEA (Cooper Engineering Associates). 1994. Silver Country Estates TM 93-02, DR 93-08, GPA 93-03, R 93-03. Received February 8.
- Harris & Associates. 2020. Noise Technical Report for the Fanita Ranch Project. May.
- LLG (Linscott Law & Greenspan, Engineers). 2020. Fanita Ranch No Magnolia Avenue Extension Analysis, Santee, California. September.
- LSA (LSA Associates). 2020. Air Quality Analysis for the Fanita Ranch Specific Plan. May.
- Pacific Noise Control. 1997. Silver Country Estates (Units 2 through 7) Project Environmental Noise Assessment. June 2.
- City of Santee. 2003. Santee General Plan. Adopted August 27.

Attachment 1. Revised FHWA Noise Prediction Model Results – Full Access Scenario



Project Number: 1501144001 Project Name: Fanita Ranch - No Extension/Full Access

Background Information

Model Description: Source of Traffic Volumes: Community Noise Descriptor:

 Day
 Evening
 Night

 77.70%
 12.70%
 9.60%

 87.43%
 5.05%
 7.52%

 89.10%
 2.84%
 8.06%
 Assumed 24-Hour Traffic Distribution: Total ADT Volumes Medium-Duty Trucks Heavy-Duty Trucks

"-" = contour is located within the roadway right-of-way.

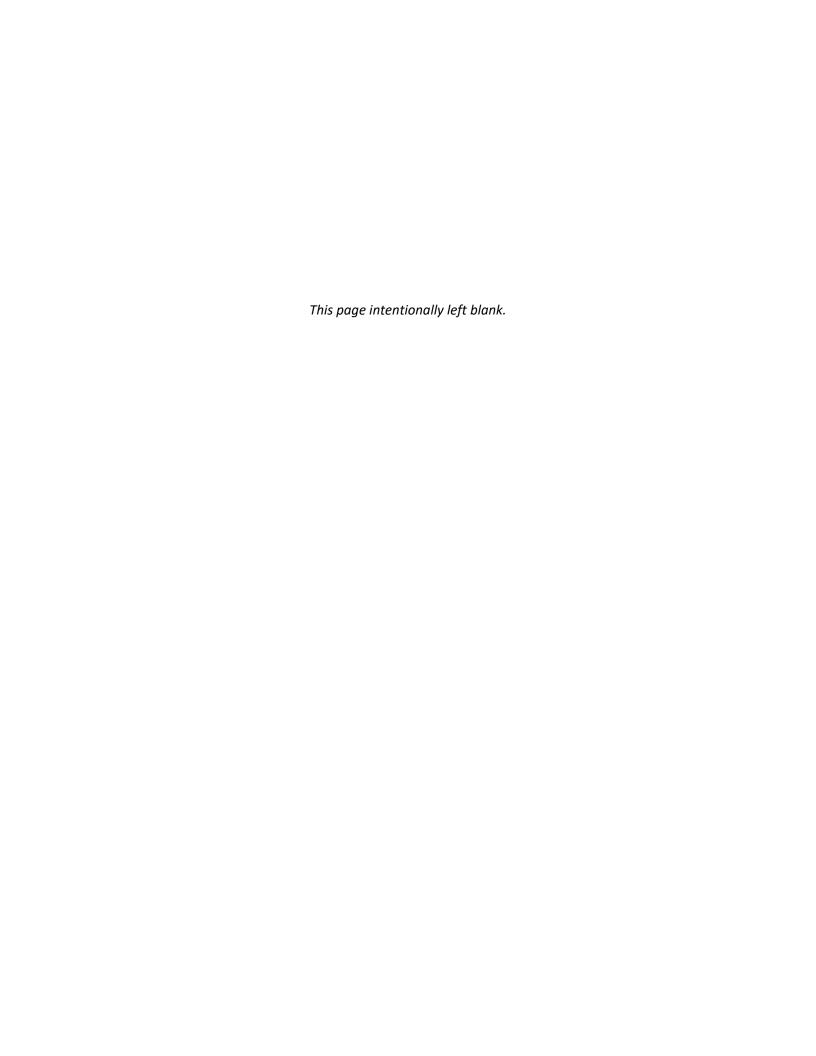
Distance is from the centerline of the roadway segment

to the receptor location.

Heavy-Duty Trucks		89.10%	2.84%	8.06%																								
													-	Traffic Vo	olumes						R	Ref. Energy Leve Dist Ld	Le		Ln	DISTANC	E TO CONT	OUR (2)
			457	Design			cle Mix		tance froi	m Centerlin		way	0.1											T		70.1.1.05.1		
Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Medium Trucks	Heavy Trucks	Ldn at 50 Feet	70 Ldn	Distance t	to Contour 60 Ldn	55 Ldn	Calc Dist	Day E	Eve Nigh	nt MTd	I HTd	MTe F	HTe N	ИTn HT	lTn A	MT HT Adj A MT HT	Total A M	AI HI IO	tal A MT HT Total	70 Ldn 65 I	_dn 60 Ld	dn 55 Ldn
Princess Joann Road	24.100	******	volamo	(p)	, doto.	Trucko	TTGGTG	00.000	70 24.1	00 24.1	00 24.1	00 Eu.,	. 5.50	0	0 0	0	0	0	0	0	0 #	····· ···· ··· ··· ··· ··· ··· ··· ···	# #### #### #	·**** ***** ***	*** ***** ***** *****	0	0	0 0
Cuyamaca Street to Magnolia Ave, existing	2	0	530	25	0.5	2.0%	2.0%	50	-	-	-	-	50	412	67 51	1 9	9	1	0	1	1 5	59.4 71.1 78.7 -0.1 45.2 40.6 48	4 50.5 42.3 3	33.0 38.2 4	4.1 29.3 31.2 39.1 40.1	2	5	11 23
Cuyamaca Street to Magnolia Ave, existing + project	2	0	3,160	25	0.5	2.0%	2.0%	58	-	-	35	76	50	,	401 30			3	2	5		59.4 71.1 78.7 -0.1 53.0 48.4 56				8	16	35 76
Cuyamaca Street to Magnolia Ave, Near Term	2	0	685	25	0.5	2.0%	2.0%	51	-	-	-	-	50	532	87 66			1	0	1					5.2 30.4 32.3 40.2 41.3	3	6	13 27
Cuyamaca Street to Magnolia Ave, Near Term + project Woodglen Vista Drive	2	0	3,315	25	0.5	2.0%	2.0%	58	-	-	36	78	50	2,576 0	421 31	18 58	8 59	3	2	5		59.4 71.1 78.7 -0.1 53.2 48.6 56				8	17 0	36 78 0 0
Cuyamaca Street to Magnolia Ave, existing	2	0	1,700	25	0.5	2.0%	2.0%	55	_	_	-	50	50	-	216 16	33 30	0 30	2	1	3		59.4 71.1 78.7 -0.1 50.3 45.7 53				5	-	23 50
Cuyamaca Street to Magnolia Ave, existing + project	2	0	3,010	25	0.5	2.0%	2.0%	57	-	-	34	73	50	2,339	382 28	39 53	3 54	3	2	5	5 5	59.4 71.1 78.7 -0.1 52.8 48.2 55				7		34 73
Cuyamaca Street to Magnolia Ave, Near Term	2	0	1,759	25	0.5	2.0%	2.0%	55	-	-	-	51	50		223 16			2	1	3		59.4 71.1 78.7 -0.1 50.5 45.8 53				5		24 51
Cuyamaca Street to Magnolia Ave, Near Term + project	2	0	3,069	25	0.5	2.0%	2.0%	58	-	-	34	74	50	2,385	390 29	95 54	4 55	3	2	5		59.4 71.1 78.7 -0.1 52.9 48.2 56				7	16	34 74
El Nopal Cuyamaca Street to Magnolia Ave, existing	2	0	3,780	35	0.5	2.0%	2.0%	60	_	_	50	108	50	2,937	480 36) U 33 66	0 6 67	4	2	6		#### #### #### #### #### #### ### 35.1 74.8 80.0 -0.1 58.0 51.4 56			5.9 42.1 42.0 47.5 49.4	0 11	0 23	0 0 50 108
Cuyamaca Street to Magnolia Ave, existing Cuyamaca Street to Magnolia Ave, existing + project	2	0	5,090	35	0.5	2.0%	2.0%	61	-	-	61	131	50	3.955	646 48		9 91	5	3	8					7.2 43.4 43.3 48.8 50.7	13		61 131
Cuyamaca Street to Magnolia Ave, Near Term	2	0	3,886	35	0.5	2.0%	2.0%	60	-	-	51	110	50		494 37		8 69	4	2	6					6.0 42.2 42.1 47.6 49.6	11		51 110
Cuyamaca Street to Magnolia Ave, Near Term + project	2	0	5,196	35	0.5	2.0%	2.0%	61	-	-	62	133	50	4,037	660 49	99 9	1 93	5	3	8	8 6	55.1 74.8 80.0 -0.1 59.4 52.8 58	.1 62.3 56.4 4	45.2 47.9 5	7.3 43.4 43.4 48.9 50.8	13	29	62 133
Mast Boulevard		4.5	40.400	40	0.5	0.00/	0.00/			07	000	450		0	0 0	0	0	0	0	0		**** **** **** **** **** **** ****				0	0	0 0
Cuyamaca Street to Magnolia Ave, existing	4	15 15	18,490 19,280	40 40	0.5 0.5	3.0% 3.0%	2.0% 2.0%	69 69	-	97 100	209 215	450 463	50 50		2,348 1,77 2,449 1.85			28 29	11			37.4 76.3 81.2 0.9 67.4 61.9 65 37.4 76.3 81.2 0.9 67.6 62.1 65	.1 70.1 64.5 5 .3 70.3 64.7 5		5.4 53.5 52.5 55.9 58.9	45 46		209 450 215 463
Cuyamaca Street to Magnolia Ave, existing + project Cuyamaca Street to Magnolia Ave, Near Term	4	15	19,616	40	0.5	3.0%	2.0%	70		101	217	468	50	,	2,449 1,88			30	11				.3 70.3 64.7 5		5.6 53.7 52.7 56.1 59.2	47		217 468
Cuyamaca Street to Magnolia Ave, Near Term + project	4	15	20,406	40	0.5	3.0%	2.0%	70	_	103	223	480		15.855				31	12			67.4 76.3 81.2 0.9 67.9 62.4 65				48		223 480
Cuyamaca Street														0	0 0) 0	0	0	0	0	0 #	····· ····· ···· ···· ···· ···· ···· ····	# #### #### #	### #### ##	## #### #### ####	0	0	0 0
Project Site to Magnolia Avenue, existing	2	10	DNE	40	0.5	2.0%	2.0%	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	50	#######################################	###### ####	### ####	### ######	#######################################	********	########################	##### 6	67.4 76.3 81.2 0.1 #### #### ###	# #### #### #	### #### ##	*** **** **** **** ****	#VALUE! #VAI	UE! #VALU	JE! #VALUE!
Project Site to Magnolia Avenue, existing + project	2	10	13,920	40	0.5	2.0%	2.0%	67	-	66	143	309	50	10,816	,			14	8			67.4 76.3 81.2 0.1 65.4 58.1 63			3.2 49.5 48.7 53.8 56.0	31		143 309
Project Site to Magnolia Avenue, Near Term	2	10	DNE	40	0.5	2.0%	2.0%	#VALUE!	#VALUE!										********						'## #### #### #### ;			
Project Site to Magnolia Avenue, Near Term + project Cuyamaca Street	2	10	13,920	40	0.5	2.0%	2.0%	67	-	66	143	309	50	10,816	1,768 1,33 0 0			14 0	0			37.4 76.3 81.2 0.1 65.4 58.1 63	.0 67.9 62.5 5			31 0	66 1	143 309 0 0
Magnolia Avenue to Princess Joann Road, existing	2	10	DNE	40	0.5	2.0%	2.0%	#VALUE!	#\/ΔI I IFI	! #\/Δ!!!F!	#\/ΔI I IFI	#\/ΔI I IFI	50	-	····			-	-	-	0 "					¥VALUE! #VAI	-	
Magnolia Avenue to Princess Joann Road, existing + project	2	10	13,920	40	0.5	2.0%	2.0%	#VALUE:	#VALUE:	66	143	309	50		1,768 1,33			14	8				.0 67.9 62.5 5			31		143 309
Magnolia Avenue to Princess Joann Road, Near Term	2	10	DNE	40	0.5	2.0%	2.0%	#VALUE!	#VALUE!				50	.,	###### ####			######################################	""""" 			67.4 76.3 81.2 0.1 #### #### ###				#VALUE! #VAI		
Magnolia Avenue to Princess Joann Road, Near Term + project	2	10	13,920	40	0.5	2.0%	2.0%	67	-	66	143	309	50	10,816	1,768 1,33	36 24	3 248	14	8	21	22 6	67.4 76.3 81.2 0.1 65.4 58.1 63	.0 67.9 62.5 5	50.5 52.9 6	3.2 49.5 48.7 53.8 56.0	31		143 309
Cuyamaca Street														0	0 0) 0	0	0	0		0 "	·····			## #### #### ####	0	0	0 0
Princess Joann Road to Chaparral Drive, existing	2	10	DNE	40	0.5	2.0%	2.0%	#VALUE!	#VALUE!									####### #	********						'## #### #### #### ;			
Princess Joann Road to Chaparral Drive, existing + project	2	10 10	11,300	40 40	0.5	2.0%	2.0%	66	-	58	125	268	50		1,435 1,08	85 19	98 201		6 ###### #				.1 67.0 61.6 4			27 #VALUE! #VAI		125 268
Princess Joann Road to Chaparral Drive, Near Term Princess Joann Road to Chaparral Drive, Near Term + project	2	10	DNE 11,300	40	0.5 0.5	2.0% 2.0%	2.0% 2.0%	#VALUE! 66	#VALUE!	58	#VALUE!	#VALUE!	50 50	####### # 8,780	1,435 1,08	### #### 185 19	### ##### 98 201	11	6			31.1 10.0 01.E 0.1 HHHHH HHHHH			2.3 48.6 47.7 52.9 55.1	7VALUE! #VAI 27		125 268
Cuyamaca Street	2	10	11,500	40	0.5	2.070	2.070			30	125	200	30	0,700	0 0		0 201	0	0			#### #### #### #### #### #### #### ####				0	0	0 0
Chaparral Drive to Woodglen Vista Drive, existing	2	40	670	35	0.5	3.0%	2.0%	54	-	-	-	-	50	521	85 64	4 18	8 12	1	0	2		55.1 74.8 80.0 0.9 51.4 46.7 50			9.5 37.4 37.2 41.0 43.7	4	9	19 42
Chaparral Drive to Woodglen Vista Drive, existing + project	4	16	11,970	50	0.5	3.0%	2.0%	69	-	99	213	459	50	9,301	1,520 1,14	49 31	4 213	18	7	27	19 7	71.1 78.8 83.0 0.9 68.4 61.6 64	.1 70.4 65.5 5	54.0 54.0 6	5.1 54.4 52.1 54.9 58.8	46	99 2	213 459
Chaparral Drive to Woodglen Vista Drive, Near Term	2	40	683	35	0.5	3.0%	2.0%	54	-	-	-	-	50	531	87 66			1	0	2		55.1 74.8 80.0 0.9 51.5 46.7 50			9.6 37.5 37.3 41.0 43.8	4		20 42
Chaparral Drive to Woodglen Vista Drive, Near Term + project	4	16	11,983	50	0.5	3.0%	2.0%	69	-	99	213	459	50		1,522 1,15	50 31	4 214	18	7			71.1 78.8 83.0 0.9 68.4 61.6 64				46		213 459
Cuyamaca Street	2	40	4.360	35	0.5	2.00/	2.00/	62			68	146	50	0	0 0 554 41) () 19 11	0 4 78	0	0	0 10		#### #### #### #### #### #### ### 65.1 74.8 80.0 0.9 59.5 54.8 58			7.6 45.6 45.3 49.1 51.8	0	0 31	0 0 68 146
Woodglen Vista Drive to El Nopal, existing Woodglen Vista Drive to El Nopal, existing + project	4	16	14,340	50	0.5 0.5	3.0% 3.0%	2.0% 2.0%	70		111	240	517	50	.,	1.821 1.37			22	2			35.1 74.8 80.0 0.9 59.5 54.8 58 71.1 78.8 83.0 0.9 69.2 62.4 64			6.9 55.2 52.9 55.7 59.5	15 52		240 517
Woodglen Vista Drive to El Nopal, Near Term	2	40	4,472	35	0.5	3.0%	2.0%	62	_	-	69	149	50		568 42			7	3	10					7.7 45.7 45.4 49.2 51.9	15		69 149
Woodglen Vista Drive to El Nopal, Near Term + project	4	16	14,452	50	0.5	3.0%	2.0%	70	-	112	241	520		11,229				22	8			71.1 78.8 83.0 0.9 69.2 62.4 65				52		241 520
Cuyamaca Street						-11								0	0 0) 0	0	0	0	0	0 #	**** **** **** **** **** **** ****	# #### #### #	### #### ##	## #### #### #### ####	0	0	0 0
El Nopal to Mast Boulevard, existing	3	30	8,860	35	0.5	3.0%	2.0%	65	-	-	110	238	50	. ,	1,125 85			13	5			55.1 74.8 80.0 1.0 62.7 58.0 61			0.8 48.8 48.5 52.3 55.0	24		110 238
El Nopal to Mast Boulevard, existing + project	4	16	17,530	50	0.5	3.0%	2.0%	71	59	127	274	591	50		2,226 1,68			27	10			71.1 78.8 83.0 0.9 70.0 63.2 65				59		274 591
El Nopal to Mast Boulevard, Near Term	3	30 16	9,173	35	0.5	3.0%	2.0%	65	-	120	113 278	244	50		1,165 88			14 27	5 10			55.1 74.8 80.0 1.0 62.9 58.1 61			1.0 48.9 48.7 52.4 55.1	24		113 244 278 598
El Nopal to Mast Boulevard, Near Term + project Magnolia Avenue	4	16	17,843	50	0.5	3.0%	2.0%	71	60	129	2/8	598	50	13,864	2,266 1,7	13 46	318	0	10	40 0	29 7	71.1 78.8 83.0 0.9 70.1 63.3 65	.9 72.1 67.2 5 !# #### #### #	55.7 55.7 6	7.8 50.2 53.9 50.0 60.5	60	129 2	278 598
Cuyamaca Street to Princess Joann Road, existing	2	12	DNE	35	0.5	3.0%	2.0%	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	50	-	#######################################	,	,				##### 6	35 1 74 8 80 0 0 1 #### #### ###		***** ***** **	*** ***** **** **** **** ****	#VALUE! #VAI	UF! #VALL	JE! #VALUE!
Cuyamaca Street to Princess Joann Road, existing + project	2	12		35	0.5	3.0%	2.0%	#VALUE!					50	###### #	###### ####	### ###	### #####	############	*******	###### ##	##### 6	55.1 74.8 80.0 0.1 #### #### ###	# #### #### #	### #### ##		#VALUE! #VAI		
Cuyamaca Street to Princess Joann Road, Near Term	2	12	DNE	35	0.5	3.0%	2.0%	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	50	###### #	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	### ####	### #####	######################################	"""""	###### ##	##### 6	65.1 74.8 80.0 0.1 #### #### ###	## #### #### ##### ###### ############	**** ***** ***	***	#VALUE! #VAI	UE! #VALU	JE! #VALUE!
Cuyamaca Street to Princess Joann Road, Near Term + project	2	12		35	0.5	3.0%	2.0%	#VALUE!	#VALUE!	! #VALUE!	#VALUE!	#VALUE!	50	#######################################	<i>!##### ###</i> #	### ###	### ######	#######################################	######################################	#######################################	##### 6	65.1 74.8 80.0 0.1 #### #### ###	# #### #### #	### #### ##	*** ***** ***** ***** *****	#VALUE! #VAI	UE! #VALU	JE! #VALUE!
Magnolia Avenue														0	0 0		-	0	0	0		'### #### #### #### #### #### ###				0	0	0 0
Princess Joann Road to Woodglen Vista Drive, existing	4	15	2,020	40	0.5	3.0%	2.0%	60	-	-	-	103	50		257 19			3	1	-		57.4 76.3 81.2 0.9 57.8 52.3 55				10	22	48 103
Princess Joann Road to Woodglen Vista Drive, existing + project Princess Joann Road to Woodglen Vista Drive, Near Term	4 4	15 15	4,650	40 40	0.5 0.5	3.0% 3.0%	2.0% 2.0%	63 60	-	-	83	179 109	50 50		591 449 280 21:			7	3			67.4 76.3 81.2 0.9 61.4 55.9 59				18 11	39 23	83 179 51 109
Princess Joann Road to Woodglen Vista Drive, Near Term + proi		15	2,204 4.834	40	0.5	3.0%	2.0%	63	-	-	- 85	184			614 46			3 7	3	-		37.4 76.3 81.2 0.9 58.2 52.7 55 37.4 76.3 81.2 0.9 61.6 56.1 59				18	23 40	85 184
Magnolia Avenue		10	4,004	40	0.5	3.070	2.070				00	104	30	0,730	0 0			0	0			#### #### #### #### #### #### #### ####				0	0	0 0
Woodglen Vista Drive to El Nopal, existing	4	15	9,030	40	0.5	3.0%	2.0%	66	-	60	129	279	50	-	1,147 86		-	14	5			67.4 76.3 81.2 0.9 64.3 58.8 62				28	-	129 279
Woodglen Vista Drive to El Nopal, existing + project	4	15	12,970	40	0.5	3.0%	2.0%	68	-	77	165	355	50	10,078	1,647 1,24	45 34	0 231	20	7	29	21 6	67.4 76.3 81.2 0.9 65.9 60.4 63	6 68.6 63.0 5	52.8 53.4 6	3.8 51.9 50.9 54.3 57.4	36	77 1	165 355
Woodglen Vista Drive to El Nopal, Near Term	4	15	9,415	40	0.5	3.0%	2.0%	66	-	62	133	287		7,315	.,			14	5			67.4 76.3 81.2 0.9 64.5 59.0 62				29		133 287
Woodglen Vista Drive to El Nopal, Near Term + project	4	15	13,355	40	0.5	3.0%	2.0%	68	-	78	168	362	50	,	1,696 1,28			20	8			67.4 76.3 81.2 0.9 66.0 60.5 63				36		168 362
Magnolia Avenue	,		40.000	40		0.00/	0.00/	60		70	4	000		0	0 0		-	0	0	-		****				0	0	0 0
El Nopal to Mast Boulevard, existing El Nopal to Mast Boulevard, existing + project	4 4	15 15	13,690 16,320	40 40	0.5 0.5	3.0% 3.0%	2.0% 2.0%	68 69	-	79 89	171 192	368 414	50 50	10,637 12.681				21 25	8 9			37.4 76.3 81.2 0.9 66.1 60.6 63 37.4 76.3 81.2 0.9 66.9 61.4 64				37 41		171 368 192 414
El Nopal to Mast Boulevard, existing + project El Nopal to Mast Boulevard, Near Term	4	15	14,291	40	0.5	3.0%	2.0%	68	-	89 82	192	379			1,815 1,37			25 22	8			37.4 76.3 81.2 0.9 66.9 61.4 64 37.4 76.3 81.2 0.9 66.3 60.8 64				38		192 414 176 379
El Nopal to Mast Boulevard, Near Term + project	4	15	16,921	40	0.5	3.0%	2.0%	69	-	91	176	424			2,149 1,62							37.4 76.3 81.2 0.9 67.0 61.5 64				30 42		197 424
2 opui to must boulevard, Near Terrir - project	-	10	10,021	-70	0.0	0.070	2.070	- 33		31	101	747	50	10,140	_, 1-0 1,02	+4	. 502	20	10	00	۷ ر	0.0 01.2 0.0 01.0 01.0 04	00.0 04.2 0	JU U4.U U	5.0 50.1 02.1 50.0 50.0	74	01	727







Project Number: 1501144001
Project Name: Fanita Ranch - No Extension/Restricted Access

Background	Information
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Model Description: Source of Traffic Volumes: Community Noise Descriptor:

 Day
 Evening
 Night

 77.70%
 12.70%
 9.60%

 87.43%
 5.05%
 7.52%

 89.10%
 2.84%
 8.06%
 Assumed 24-Hour Traffic Distribution: Total ADT Volumes Medium-Duty Trucks Heavy-Duty Trucks

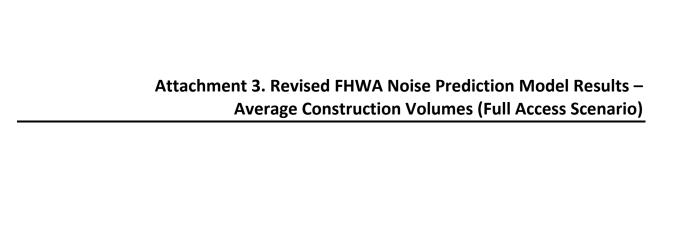
"-" = contour is located within the roadway right-of-way.

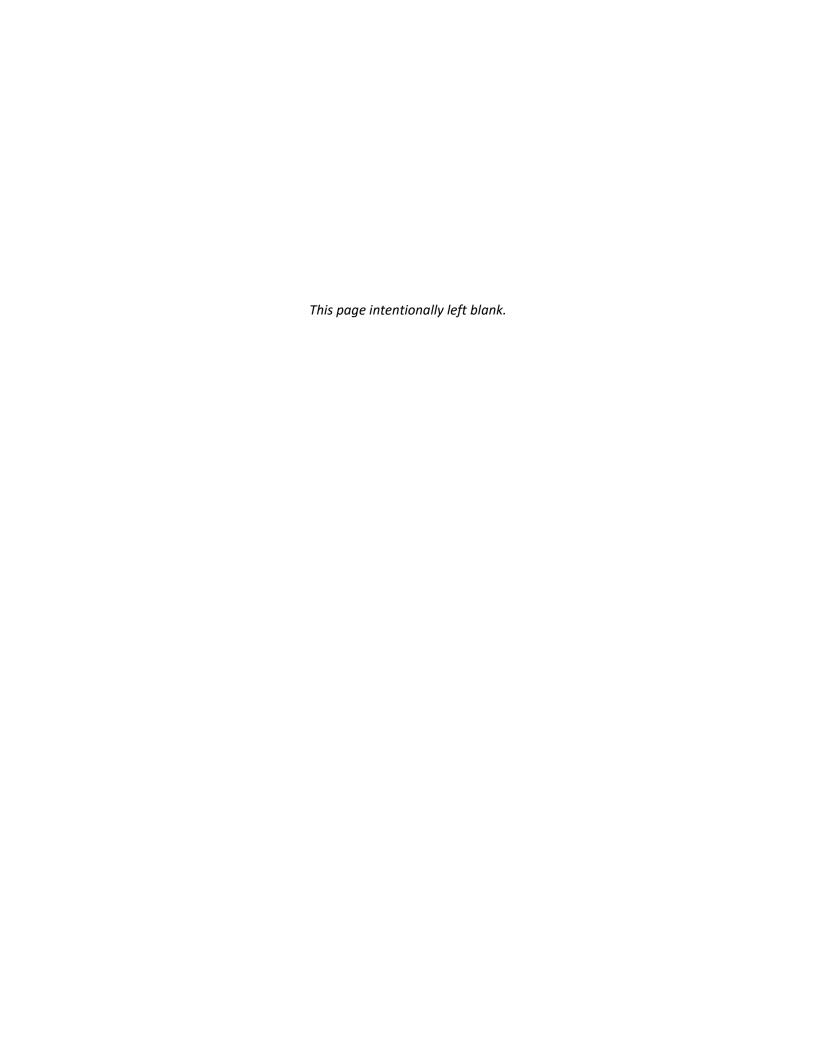
Distance is from the centerline of the roadway segment

to the receptor location.

Heavy-Duty Trucks		89.10%	2.84%	8.06%																		
				Design		Vehicle	a Miv	Dietance f	from Centerli	no of Poac	łway	Traff	c Volumes						Ref. Energy Leve Dist Ld	Le	Ln	DISTANCE TO CONTOUR (2)
Analysis Condition		Median	ADT	Speed	Alpha	Medium	Heavy	Ldn at		to Contour	-	Calc Day	Eve Ni	ght MT	Td HTd	МТе НТе	е МТ	n HTn	A MT HT Adj A MT HT	Total A MT HT	Total A MT HT Total	70 Ldn 65 Ldn 60 Ldn 55 L
Roadway, Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	50 Feet 70 Lo	dn 65 Ldn	60 Ldn	55 Ldn	Dist										
Princess Joann Road	0	0	500	0.5	0.5	0.00/	0.00/	50				50 44	0 2 67	0 51	0 0	0 (0	0 0	#### #### #### #### #### ####			0 0 0
Cuyamaca Street to Magnolia Ave, existing Cuyamaca Street to Magnolia Ave, existing + project	2	0	530 1.840	25 25	0.5 0.5	2.0% 2.0%	2.0% 2.0%	50 - 55 -	-	-	- 53	50 41 50 1,4			32 33	2 4	1	1 1	59.4 71.1 78.7 -0.1 45.2 40.6 48.4 59.4 71.1 78.7 -0.1 50.7 46.0 53.8		.6 49.5 34.7 36.6 44.5 45.5	2 5 11 5 11 24
Cuyamaca Street to Magnolia Ave, existing + project Cuyamaca Street to Magnolia Ave, Near Term	2	0	685	25 25	0.5	2.0%	2.0%	51 -	-	-	- 55	50 1,4			12 12	1 (0	ა ა 1 1	59.4 71.1 78.7 -0.1 50.7 46.0 53.6			3 6 13
Cuyamaca Street to Magnolia Ave, Near Term + project	2	0	1,995	25	0.5	2.0%	2.0%	56 -	-	-	- 56	50 1.5			35 36	2 1	1 '	1 1 2 2	59.4 71.1 78.7 -0.1 40.4 41.7 49.5			6 12 26
Woodglen Vista Drive			1,000	2.5	0.5	2.070	2.070				30	30 1,5	0	0	0 0	0 (0	0 0	#### #### #### #### #### #### ####			0 0 0
Cuyamaca Street to Magnolia Ave, existing	2	0	1,700	25	0.5	2.0%	2.0%	55 -	-	-	50	50 1,3	21 216	163	30 30	2	1 :	3 3	59.4 71.1 78.7 -0.1 50.3 45.7 53.4	55.6 47.4 38.1 43	.2 49.2 34.4 36.2 44.2 45.2	5 11 23
Cuyamaca Street to Magnolia Ave, existing + project	2	0	2,360	25	0.5	2.0%	2.0%	56 -	-	-	62	50 1,8	300	227	41 42	2 1	1 -	4 4	59.4 71.1 78.7 -0.1 51.7 47.1 54.8	57.0 48.8 39.5 44	.7 50.6 35.8 37.6 45.6 46.6	6 13 29
Cuyamaca Street to Magnolia Ave, Near Term	2	0	1,759	25	0.5	2.0%	2.0%	55 -	-	-	51	50 1,3	7 223	169	31 31	2 1	1	3 3	59.4 71.1 78.7 -0.1 50.5 45.8 53.6	55.8 47.5 38.2 43	.4 49.3 34.5 36.4 44.3 45.3	5 11 24
Cuyamaca Street to Magnolia Ave, Near Term + project	2	0	2,419	25	0.5	2.0%	2.0%		-	-	63	50 1,8	307	232	42 43	2 1	1 .	4 4	59.4 71.1 78.7 -0.1 51.8 47.2 54.9	57.1 48.9 39.6 44	.8 50.7 35.9 37.8 45.7 46.7	6 14 29
El Nopal		_										0	0	0	0 0	0 (0	0 0	***** ***** ***** ***** ***** *****			0 0 0
Cuyamaca Street to Magnolia Ave, existing	2	0	3,780	35	0.5	2.0%	2.0%	60 -	-	50	108	50 2,9			66 67	4 2	2	6 6	65.1 74.8 80.0 -0.1 58.0 51.4 56.7			11 23 50
Cuyamaca Street to Magnolia Ave, existing + project	2	0	4,440	35	0.5	2.0%	2.0%	61 -	-	56	120	50 3,4			78 79	4 3	3	, ,		61.6 55.8 44.5 47		12 26 56
Cuyamaca Street to Magnelia Ave, Near Term	2	0	3,886	35	0.5	2.0%	2.0%	60 -	-	51 56	110 122	50 3,0			68 69 79 81	4 2	2	6 6		61.0 55.2 44.0 46	.7 56.0 42.2 42.1 47.6 49.6 .4 56.7 42.9 42.8 48.3 50.2	11 24 51 12 26 56
Cuyamaca Street to Magnolia Ave, Near Term + project Mast Boulevard	2	U	4,546	35	0.5	2.0%	2.0%	61		56	122	50 3,5	02 5// ·	436	0 0	0 0	0	/ / n n		#### #### #### ###		12 26 56 0 0 0
Cuyamaca Street to Magnolia Ave, existing	4	15	18,490	40	0.5	3.0%	2.0%	69 -	97	209	450	50 14,3	67 2,348 1	,775 4	485 329	28 1	11 4	2 30				45 97 209
Cuyamaca Street to Magnolia Ave, existing + project	4	15	21,910	40	0.5	3.0%	2.0%	70 -	109	234	504	50 17,0			575 390			9 35		70.9 65.3 55.1 55		50 109 234
Cuyamaca Street to Magnolia Ave, Near Term	4	15	19,616	40	0.5	3.0%	2.0%	70 -	101	217	468	50 15,2		,883 5	515 350		11 4	4 32		70.4 64.8 54.6 55		47 101 217
Cuyamaca Street to Magnolia Ave, Near Term + project	4	15	23,036	40	0.5	3.0%	2.0%	70 52		242	521				604 411	35 1		2 37			.9 66.3 54.4 53.4 56.8 59.9	52 112 242
Cuyamaca Street		-	,	-	-							0	0	0	0 0	0 (0	0 0	#### #### #### #### #### ####	#### #### #### ###	** **** **** **** ****	0 0 0
Project Site to Magnolia Avenue, existing	2	10	DNE	40	0.5	2.0%	2.0%	#VALUE! #VALU	JE! #VALUE	#VALUE	! #VALUE!	50 ####	## ###### ##	#### ##	<i></i>	###### ###	""""	·### ####	## 67.4 76.3 81.2 0.1 #### #### ####	#### #### #### ###	** **** **** **** ****	#VALUE! #VALUE! #VALUE! #VAL
Project Site to Magnolia Avenue, existing + project	2	10	13,920	40	0.5	2.0%	2.0%	67 -	66	143	309	50 10,8	16 1,768 1	,336 2	243 248	14 8	8 2	21 22	67.4 76.3 81.2 0.1 65.4 58.1 63.0	67.9 62.5 50.5 52	.9 63.2 49.5 48.7 53.8 56.0	31 66 143
Project Site to Magnolia Avenue, Near Term	2	10	DNE	40	0.5	2.0%	2.0%	#VALUE! #VALU	JE! #VALUE	! #VALUE	! #VALUE!	50 ####	## ###### ##	!#### ##.	<i>*#### ######</i>	###### ###	#### ###	!### ####	## 67.4 76.3 81.2 0.1 #### #### ####	#### #### #### ##	** **** **** **** **** ****	#VALUE! #VALUE! #VALUE! #VAL
Project Site to Magnolia Avenue, Near Term + project	2	10	13,920	40	0.5	2.0%	2.0%	67 -	66	143	309	50 10,8	16 1,768 1	,336 2	243 248	14 8	8 2	1 22	67.4 76.3 81.2 0.1 65.4 58.1 63.0	67.9 62.5 50.5 52	.9 63.2 49.5 48.7 53.8 56.0	31 66 143
Cuyamaca Street												0	0	0	0 0	0 (0	0 0	#### #### #### #### #### #### ####	#### #### #### ##	## #### #### #### #### ####	0 0 0
Magnolia Avenue to Princess Joann Road, existing	2	10	DNE	40	0.5	2.0%	2.0%	#VALUE! #VALU	JE! #VALUE		! #VALUE!	50 ####	## ###### ##	·#### ##	<i>******</i>	###### ###	#### ###	·### ####	## 67.4 76.3 81.2 0.1 #### #### ####	#### #### #### ##	*# #### #### #### #### ####	#VALUE! #VALUE! #VALUE! #VAL
Magnolia Avenue to Princess Joann Road, existing + project	2	10	13,920	40	0.5	2.0%	2.0%	67 -	66	143	309	50 10,8			243 248	14 8	8 2	21 22	67.4 76.3 81.2 0.1 65.4 58.1 63.0	67.9 62.5 50.5 52		31 66 143
Magnolia Avenue to Princess Joann Road, Near Term	2	10	DNE	40	0.5	2.0%	2.0%	#VALUE! #VALU					## ###### ##							#### #### #### ##		#VALUE! #VALUE! #VALUE! #VAL
Magnolia Avenue to Princess Joann Road, Near Term + proje	ct 2	10	13,920	40	0.5	2.0%	2.0%	67	66	143	309				243 248	14 8	8 2			67.9 62.5 50.5 52		31 66 143
Cuyamaca Street												0	0	0	0 0	0 (-	0 0				0 0 0
Princess Joann Road to Chaparral Drive, existing	2	10	DNE	40	0.5	2.0%	2.0%	#VALUE! #VALU					## ###### ##					#### ####		#### #### #### ###		#VALUE! #VALUE! #VAL
Princess Joann Road to Chaparral Drive, existing + project	2	10	12,610	40	0.5	2.0%	2.0%	66 -	62	134	289	50 9,7			220 225	13 7		9 20			.4 62.8 49.1 48.2 53.4 55.6	29 62 134
Princess Joann Road to Chaparral Drive, Near Term	2	10 10	DNE	40 40	0.5	2.0%	2.0%	#VALUE! #VALU					## ###### ##		·#### ######	###### ###	##### #### 	#### #### 9 20	"" OTT TOTO OTTE OTT """"			#VALUE! #VALUE! #VAL 29 62 134
Princess Joann Road to Chaparral Drive, Near Term + project	_ 2	10	12,610	40	0.5	2.0%	2.0%	66 -	62	134	289	50 9,7		,211 2 0	220 225	0 (0	9 20 0 0	#### #### #### #### #### #### ####	67.5 62.1 50.1 52		29 62 134 0 0 0
Cuyamaca Street Chaparral Drive to Woodglen Vista Drive, existing	2	40	670	35	0.5	3.0%	2.0%	54 -				50 52		-	18 12	1 (0	-	65.1 74.8 80.0 0.9 51.4 46.7 50.2			4 9 19
Chaparral Drive to Woodglen Vista Drive, existing Chaparral Drive to Woodglen Vista Drive, existing + project	4	16	13,280	50	0.5	3.0%	2.0%	70 -	106	228	491	50 10,3			348 237	20 8	8 3	- :		70.8 65.9 54.5 54		49 106 228
Chaparral Drive to Woodglen Vista Drive, existing 1 project	2	40	683	35	0.5	3.0%	2.0%	54 -	-	-	401	50 10,5			18 12	1 (65.1 74.8 80.0 0.9 51.5 46.7 50.3			4 9 20
Chaparral Drive to Woodglen Vista Drive, Near Term + project		16	13,293	50	0.5	3.0%	2.0%	70 -	106	228	492	50 10,3			349 237	20 8	8 3					49 106 228
Cuyamaca Street	_											0	0	0	0 0	0 (0	0 0	#### #### #### #### #### ####			0 0 0
Woodglen Vista Drive to El Nopal, existing	2	40	4,360	35	0.5	3.0%	2.0%	62 -	-	68	146	50 3,3	88 554	419 1	114 78	7 2	2 1	0 7	65.1 74.8 80.0 0.9 59.5 54.8 58.3	62.7 56.6 47.2 48	.2 57.6 45.6 45.3 49.1 51.8	15 31 68
Woodglen Vista Drive to El Nopal, existing + project	4	16	16,310	50	0.5	3.0%	2.0%	71 56	121	262	564	50 12,6	73 2,071 1	,566 4	428 291	25 9	9 3	37 26	71.1 78.8 83.0 0.9 69.7 62.9 65.5	71.7 66.8 55.4 55	.3 67.4 55.8 53.5 56.2 60.1	56 121 262
Woodglen Vista Drive to El Nopal, Near Term	2	40	4,472	35	0.5	3.0%	2.0%	62 -	-	69	149	50 3,4	75 568	429 1	117 80	7 3	3 1	0 7	65.1 74.8 80.0 0.9 59.6 54.9 58.4	62.9 56.8 47.3 48	.3 57.7 45.7 45.4 49.2 51.9	15 32 69
Woodglen Vista Drive to El Nopal, Near Term + project	4	16	16,442	50	0.5	3.0%	2.0%	71 57	122	263	567	50 12,7	75 2,088 1	,578 4	431 293	25 9	9 3	37 27	71.1 78.8 83.0 0.9 69.8 63.0 65.5	71.8 66.9 55.4 55	.4 67.5 55.8 53.5 56.3 60.1	57 122 263
Cuyamaca Street						•						0	0	0	0 0	0 (0	0 0	#### #### #### #### #### ####	#### #### #### ##	** **** **** **** **** ****	0 0 0
El Nopal to Mast Boulevard, existing	3	30	8,860	35	0.5	3.0%	2.0%	65 -	-	110	238	50 6,8	4 1,125	851 2	232 158	13 5	5 2	20 14	65.1 74.8 80.0 1.0 62.7 58.0 61.5	65.9 59.8 50.4 51	.3 60.8 48.8 48.5 52.3 55.0	24 51 110
El Nopal to Mast Boulevard, existing + project	4	16	20,160	50	0.5	3.0%	2.0%	72 65	140	301	649	50 15,6	64 2,560 1	,935 5	529 359	31 1	11 4	5 32	71.1 78.8 83.0 0.9 70.6 63.9 66.4	72.6 67.8 56.3 56	.2 68.3 56.7 54.4 57.2 61.0	65 140 301
El Nopal to Mast Boulevard, Near Term	3	30	9,173	35	0.5	3.0%	2.0%	65 -	-	113	244	50 7,1			241 163		5 2			66.1 60.0 50.5 51	.5 61.0 48.9 48.7 52.4 55.1	24 52 113
El Nopal to Mast Boulevard, Near Term + project	4	16	20,473	50	0.5	3.0%	2.0%	72 66	141	304	656	50 15,9	08 2,600 1	,965 5	537 365	31 1	12 4	6 33	71.1 78.8 83.0 0.9 70.7 63.9 66.5	72.7 67.8 56.3 56	.3 68.4 56.8 54.5 57.2 61.1	66 141 304
Magnolia Avenue												0	0	0	0 0	0 (0	0 0	#### #### #### #### #### ####	#### #### #### ##	''' 	0 0 0
Cuyamaca Street to Princess Joann Road, existing	2	12	DNE	35	0.5	3.0%	2.0%	#VALUE! #VALU					## ###### ##	#### ##	<i></i>	###### ###	#### ###	·### ####		#### #### #### ##		#VALUE! #VALUE! #VALUE! #VAL
Cuyamaca Street to Princess Joann Road, existing + project	2	12		35	0.5	3.0%	2.0%	#VALUE! #VALU					## ###### ##		<i>*************************************</i>	###### ###						#VALUE! #VALUE! #VALUE! #VAL
Cuyamaca Street to Princess Joann Road, Near Term	2	12	DNE	35	0.5	3.0%	2.0%	#VALUE! #VALU					## ###### ##		<i></i>				## 65.1 74.8 80.0 0.1 #### #### ####			
Cuyamaca Street to Princess Joann Road, Near Term + proje	ct 2	12		35	0.5	3.0%	2.0%	#VALUE! #VALU	JE! #VALUE	! #VALUE	! #VALUE!	50 ###	## ###### ##	******* ***	****** ********	####### ###	*****		## 65.1 74.8 80.0 0.1 #### #### ####			#VALUE! #VALUE! #VALUE! #VAL
Magnolia Avenue		4-	0.000	40		0.00/	0.00/				400	50 45	0	0	0 0	0 (0	0 0	#### #### #### #### #### ####			0 0 0
Princess Joann Road to Woodglen Vista Drive, existing	. 4	15	2,020	40	0.5	3.0%	2.0%	60 -	-	- 67	103	50 1,5			53 36 87 59	3 1	•	5 3	67.4 76.3 81.2 0.9 57.8 52.3 55.5			10 22 48
Princess Joann Road to Woodglen Vista Drive, existing + proj	ect 4 4	15	3,330	40	0.5	3.0%	2.0%	62 -	-	٠.	143	50 2,5		020	87 59 58 39	5 2	-	8 5	67.4 76.3 81.2 0.9 60.0 54.5 57.6			14 31 67
Princess Joann Road to Woodglen Vista Drive, Near Term	-	15 15	2,204 3.514	40 40	0.5	3.0%	2.0%	60 -	-	- 69	109	50 1,7 50 2.7			92 63	3 1	0	5 4	67.4 76.3 81.2 0.9 58.2 52.7 55.9 67.4 76.3 81.2 0.9 60.2 54.7 57.9			11 23 51 15 32 69
Princess Joann Road to Woodglen Vista Drive, Near Term + p	noj 4	15	3,514	40	0.5	3.0%	2.0%	62		69	149	50 2,7			92 63 0 0	0 (0	0 0	#### #### #### #### #### #### #### ####			15 32 69 0 0 0
Magnolia Avenue	4	15	9,030	40	0.5	3.0%	2.0%	66 -	60	129	279	50 7,0		•	237 161	14 5	-	0 0 20 15				28 60 129
Magnolia Avenue	-	15	11,000	40	0.5	3.0%	2.0%	67 -	69	148	279 318	50 7,0			289 196			20 15 25 18				32 69 148
Woodglen Vista Drive to El Nopal, existing	1		11,000		0.5	3.0%	2.0%	66 -	62	133	287	50 6,5			269 196 247 168		5 2					
Woodglen Vista Drive to El Nopal, existing Woodglen Vista Drive to El Nopal, existing + project	4 4		9./15	∕ 1∩			Z.U /0	-			201	JU 1,3	0 1,150	JUT 2	L-1 100	1-7		., 10				
Woodglen Vista Drive to El Nopal, existing Woodglen Vista Drive to El Nopal, existing + project Woodglen Vista Drive to El Nopal, Near Term	4	15	9,415 11,385	40 40			2 0%	67 -	70	151	326	50 88	6 1446 1	093	299 203	17 4						29 62 133 33 70 151
Woodglen Vista Drive to El Nopal, existing Woodglen Vista Drive to El Nopal, existing + project Woodglen Vista Drive to El Nopal, Near Term Woodglen Vista Drive to El Nopal, Near Term + project	-		9,415 11,385	40 40	0.5	3.0%	2.0%	67 -	70	151	326				299 203 0 0		6 2	6 18	67.4 76.3 81.2 0.9 65.3 59.8 63.0	68.0 62.4 52.2 52	.8 63.3 51.4 50.4 53.8 56.8	33 70 151
Woodglen Vista Drive to El Nopal, existing Woodglen Vista Drive to El Nopal, existing + project Woodglen Vista Drive to El Nopal, Near Term Woodglen Vista Drive to El Nopal, Near Term + project Magnolla Avenue	4	15 15	11,385	40	0.5	3.0%						0	0	0	0 0	0 (6 2	26 18 0 0	67.4 76.3 81.2 0.9 65.3 59.8 63.0	68.0 62.4 52.2 52 #### #### #### ###	.8 63.3 51.4 50.4 53.8 56.8 ## #### #### #### ####	33 70 151 0 0 0
Woodglen Vista Drive to El Nopal, existing Woodglen Vista Drive to El Nopal, existing + project Woodglen Vista Drive to El Nopal, Near Term Woodglen Vista Drive to El Nopal, Near Term + project Magnolia Avenue El Nopal to Mast Boulevard, existing	4	15	11,385		0.5	3.0%	2.0% 2.0% 2.0%	67 - 68 - 69 -	70 79 89	151 171 192	326 368 414	0	0 37 1,739 1	0 ,314 3		0 (6 2 0 8	26 18 0 0 31 22	67.4 76.3 81.2 0.9 65.3 59.8 63.0 #### #### #### #### #### #### #### #	68.0 62.4 52.2 52 #### #### #### ### 68.8 63.2 53.0 53	.8 63.3 51.4 50.4 53.8 56.8 ## #### #### #### ##### .6 64.1 52.2 51.2 54.6 57.6	33 70 151
Woodglen Vista Drive to El Nopal, existing Woodglen Vista Drive to El Nopal, existing + project Woodglen Vista Drive to El Nopal, Near Term Woodglen Vista Drive to El Nopal, Near Term + project Magnolia Avenue El Nopal to Mast Boulevard, existing El Nopal to Mast Boulevard, existing + project	4	15 15 15	13,690 16,320	40	0.5 0.5 0.5	3.0% 3.0% 3.0%	2.0%	68 - 69 -	79 89	171	368	50 10,6 50 12,6	0 37 1,739 1	0 ,314 3 ,567 4	0 0 359 244	0 0 21 8 25 9	6 2 0 9 8 3 9 3	26 18 0 0 31 22 37 26	67.4 76.3 81.2 0.9 65.3 59.8 63.0 #### #### #### #### #### #### ####	68.0 62.4 52.2 52 #### #### #### ### 68.8 63.2 53.0 53 69.6 64.0 53.8 54	.8 63.3 51.4 50.4 53.8 56.8 ## #### ##### ##### ##### ##### .6 64.1 52.2 51.2 54.6 57.6 .4 64.8 52.9 51.9 55.3 58.4	33 70 151 0 0 0 37 79 171 41 89 192
Woodglen Vista Drive to El Nopal, existing Woodglen Vista Drive to El Nopal, existing + project Woodglen Vista Drive to El Nopal, Near Term Woodglen Vista Drive to El Nopal, Near Term + project Magnolia Avenue El Nopal to Mast Boulevard, existing	4 4 4	15 15 15 15	11,385	40 40 40	0.5	3.0%	2.0%	68 -	79	171 192	368 414	50 10,6 50 12,6 50 11,1	0 37 1,739 1 81 2,073 1	0 ,314 3 ,567 4 ,372 3	0 0 359 244 428 291 375 255	0 (21 8 25 9 22 8	6 2 0 9 8 3 9 3 8 3	26 18 0 0 31 22 37 26 32 23	67.4 76.3 81.2 0.9 65.3 59.8 63.0 #### #### #### #### #### #### ####	68.0 62.4 52.2 52 #### #### #### ### 68.8 63.2 53.0 53 69.6 64.0 53.8 54 69.0 63.4 53.2 53	8 63.3 51.4 50.4 53.8 56.8 ## #### #### #### #### #### #### ##	33 70 151 0 0 0 37 79 171







Project Number: 1501144001
Project Name: Fanita Ranch - Full Access/Average Construction

В	ac	kgr	oun	d In	form	ation

Model Description: Source of Traffic Volumes: Community Noise Descriptor:

Assumed 24-Hour Traffic Distribution: Total ADT Volumes Medium-Duty Trucks Heavy-Duty Trucks
 Day
 Evening
 Night

 77.70%
 12.70%
 9.60%

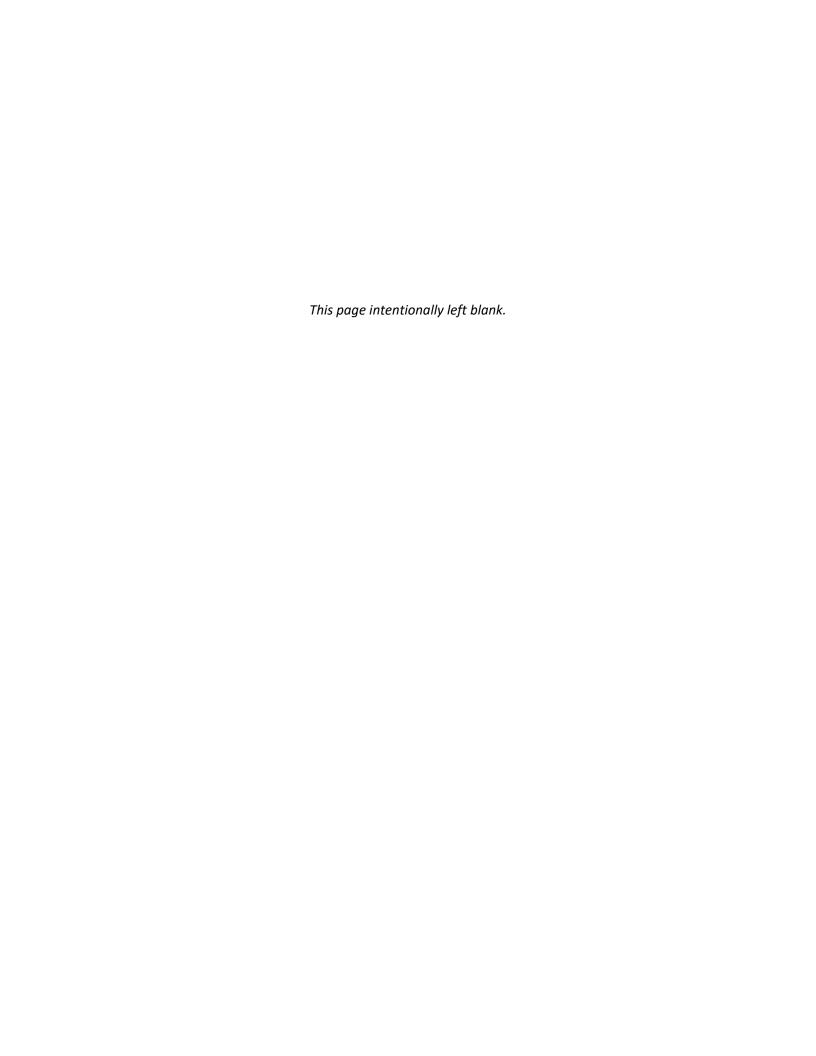
 87.43%
 5.05%
 7.52%

 89.10%
 2.84%
 8.06%
 "-" = contour is located within the roadway right-of-way. Distance is from the centerline of the roadway segment to the receptor location.

Heavy-Duty Trucks	89.10	J% 2.84%	8.06%																	
-											Traffic Volumes					Ref. Energy Leve Dist Ld	Le	Ln	DISTANCE TO CONT	OUR (2)
Analysis Candidan	Mod	an ADT	Design			le Mix		om Centerline	-	0	Calc Day Eve Nigh	t MTd HT	d MTe	HTe	MTn HTn	A MT HT Adi A MT HT	Total A MT HT	Total A MT UT Total	70 ldn 65 ldn 60 ld	do EFIdo
Analysis Condition Roadway, Segment Lane	Medi s Wid		Speed (mph)	Alpha Factor	Medium Trucks	Heavy Trucks	Ldn at 50 Feet 70 Ldn	Distance to 65 Ldn			Calc Day Eve Nigh Dist	t MTd HT	a wie	ніе	MIN HIN	A MT HT Adj A MT HT	Total A MT HT	TOTAL MI HI TOTAL	70 Ldn 65 Ldn 60 Ld	an 55 Lan
Mast Boulevard			(1 /							_	0 0 0	0	0 0	0	0 0	#### #### #### #### #### #### ###	# #### #### #### ###	#### #### #### #### ####	0 0	0 0
Cuyamaca Street to Magnolia Ave, Near Term 4	15	19,616	40	0.5	3.0%	2.0%	70 -	101	217 468	58 5	50 15,242 2,491 1,88	3 515 3	50 30	11	44 32	67.4 76.3 81.2 0.9 67.7 62.2 65.	3 70.4 64.8 54.6 55.2	2 65.6 53.7 52.7 56.1 59.2		217 468
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 4	15		40	0.5	3.0%	2.0%	70 -	102	220 474		50 15,549 2,541 1,92		57 30	11	45 32		4 70.5 64.9 54.7 55.3			220 474
Cuyamaca Street to Magnolia Ave, Near Term + project 4	15		40	0.5	3.0%	2.0%	70 -	103	223 480		50 15,855 2,592 1,95		64 31	12	46 33		5 70.6 65.0 54.8 55.4			223 480
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project Princess Joann Road	15	20,161	40	0.5	3.0%	2.0%	70 -	103	221 477	// 5	50 15,665 2,560 1,93	35 529 3	59 31	11	45 32 0 0		5 70.5 64.9 54.7 55.3 # #### #### ####		48 103 2	221 477 0 0
Cuyamaca Street to Magnolia Ave, Near Term 2	0	685	25	0.5	2.0%	2.0%	51 -	-		- 5	50 532 87 66	3 12 ·	12 1	0	1 1	59.4 71.1 78.7 -0.1 46.4 41.7 49.			3 6	13 27
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2	0	2,000	25	0.5	2.0%	2.0%	56 -	-	- 56		50 1,554 254 19		36 2	1	3 3				6 12	26 56
Cuyamaca Street to Magnolia Ave, Near Term + project 2	0	3,315	25	0.5	2.0%	2.0%	58 -		36 78	8 5	50 2,576 421 31	8 58 5	59 3	2	5 5	59.4 71.1 78.7 -0.1 53.2 48.6 56.	3 58.5 50.3 41.0 46. ⁴	52.1 37.3 39.1 47.1 48.1	8 17	36 78
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2	0	2,150	25	0.5	2.0%	2.0%	56 -	-	- 58	8 5	50 1,671 273 20	6 38 ;	38 2	1	3 3	00.1 71.1 70.1 0.1 01.0 10.1 01.			6 13	27 58
Woodglen Vista Drive Cuvamaca Street to Magnolia Ave. Near Term 2	0	1,759	0.5	0.5	2.0%	0.00/			F4		0 0 0 50 1,367 223 16	0	0 0 31 2	0	0 0				0 0 5 11	0 0 24 51
Cuyamaca Street to Magnolia Ave, Near Term 2 Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2	0	2,414	25 25	0.5 0.5	2.0%	2.0% 2.0%	55 - 57 -	-	- 51 - 63		50 1,367 223 169 50 1,876 307 23		13 2	1	3 3	59.4 71.1 78.7 -0.1 50.5 45.8 53. 59.4 71.1 78.7 -0.1 51.8 47.2 54.		49.3 34.5 36.4 44.3 45.3 3 50.7 35.9 37.7 45.7 46.7	6 14	29 63
Cuyamaca Street to Magnolia Ave, Near Term + project 2	0	3,069	25	0.5	2.0%	2.0%	58 -		34 74		50 2,385 390 29		55 3	2	5 5		0 58.2 50.0 40.7 45.8		• • • • • • • • • • • • • • • • • • • •	34 74
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2	0	2,564	25	0.5	2.0%	2.0%	57 -	-	- 66		50 1,992 326 24		16 3	1	4 4					31 66
El Nopal					•						0 0 0	0	0 0	0	0 0	#### #### #### #### #### ####			0 0	0 0
Cuyamaca Street to Magnolia Ave, Near Term 2	0	3,886	35	0.5	2.0%	2.0%	60 -	-	51 110		50 3,019 494 37		69 4	2	6 6			7 56.0 42.2 42.1 47.6 49.6		51 110
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2 Cuyamaca Street to Magnolia Ave, Near Term + project 2	0	4,541 5,196	35 35	0.5 0.5	2.0% 2.0%	2.0% 2.0%	<u>61 -</u> 61 -		56 122 62 133		50 3,528 577 43 50 4,037 660 49		31 5 93 5	3	8 8	65.1 74.8 80.0 -0.1 58.8 52.2 57. 65.1 74.8 80.0 -0.1 59.4 52.8 58.	5 61.7 55.9 44.6 47.4 1 62.3 56.4 45.2 47.9	9 57.3 43.4 43.4 48.9 50.8	12 26 13 29	56 122 62 133
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2	0	4,691	35	0.5	2.0%	2.0%	61 -	<u> </u>	58 124		50 3,645 596 45		34 5	3	7 8	65.1 74.8 80.0 -0.1 58.9 52.4 57.			12 27	58 124
Cuyamaca Street	·	.,001		0.0	2.070	2.070					0 0 0	0	0 0	0	0 0	#### #### #### #### #### #### ####		##### #### #### #### ####	0 0	0 0
Project Site to Magnolia Avenue, Near Term 2	10	DNE	40	0.5	2.0%	2.0%	#VALUE! #VALUE	E! #VALUE! #	#VALUE! #VALU	LUE! 5	50 ###### ###### ####	## ###### ##	#### ######	# ######	###### ####	## 67.4 76.3 81.2 0.1 #### #### ###	# #### #### #### ###	* ***** ***** ***** *****	#VALUE! #VALUE! #VALU	.UE! #VALUE!
Project Site to Magnolia Avenue, Near Term + 50% project 2	10		40	0.5	2.0%	2.0%	64 -	42	90 194		50 5,408 884 66		24 7	4	10 11		0 64.9 59.5 47.5 49.9	9 60.2 46.5 45.6 50.8 53.0	19 42	90 194
Project Site to Magnolia Avenue, Near Term + Project 2	10	- ,	40	0.5	2.0%	2.0%	67 -	66	143 309		50 10,816 1,768 1,33		48 14	8	21 22		0 67.9 62.5 50.5 52.9			143 309
Project Site to Magnolia Avenue, Near Term + 50% project + cor 2	10	7,110	40	0.5	2.0%	2.0%	64 -	42	92 197	97 5	50 5,524 903 68 0 0 0		27 7 0 0	4	11 11		1 65.0 59.6 47.6 50.0			92 197
Cuyamaca Street Magnolia Avenue to Princess Joann Road, Near Term 2	10	DNE	40	0.5	2.0%	2.0%	#VALUE! #VALUE	=1 #\/Δ E #	±\/ΔΙΙΙΕΙ #\/ΔΙΙΙ	IIIEI 5	0 0 0 50 ###### ########################	-	0 0 ###################################		0 0 ###################################		# #### #### #### #### # #### #### ####		0 0 #VALUE! #VALUE! #VALU	0 0
Magnolia Avenue to Princess Joann Road, Near Term + 50% prc 2	10		40	0.5	2.0%	2.0%	64 -	42	90 194		50 5,408 884 66		24 7	4	10 11			9 60.2 46.5 45.6 50.8 53.0		90 194
Magnolia Avenue to Princess Joann Road, Near Term + Project 2	10		40	0.5	2.0%	2.0%	67 -	66	143 309		50 10,816 1,768 1,33	36 243 2	48 14	8	21 22	67.4 76.3 81.2 0.1 65.4 58.1 63.	0 67.9 62.5 50.5 52.9	9 63.2 49.5 48.7 53.8 56.0		143 309
Magnolia Avenue to Princess Joann Road, Near Term + 50% pro 2	10	7,110	40	0.5	2.0%	2.0%	64 -	42	92 197	97 5	50 5,524 903 68	3 124 1	27 7	4	11 11	67.4 76.3 81.2 0.1 62.5 55.2 60.	1 65.0 59.6 47.6 50.0	0 60.3 46.6 45.7 50.9 53.1	20 42	92 197
Cuyamaca Street											0 0 0	-	0 0	0	0 0				0 0	0 0
Princess Joann Road to Chaparral Drive, Near Term 2	10		40	0.5	2.0%	2.0%	#VALUE! #VALUE	i! #VALUE! #			50 ###### ###### ####			# ######	###### ####	## GILL TOLO GILE GLI ##### #####	# #### #### #### ###		#VALUE! #VALUE! #VALU	
Princess Joann Road to Chaparral Drive, Near Term + 50% proje 2 Princess Joann Road to Chaparral Drive, Near Term + Project 2	10 10		40 40	0.5 0.5	2.0% 2.0%	2.0% 2.0%	63 - 66 -	58	79 169 125 268		50 4,390 718 54 50 8,780 1,435 1,08		01 6 01 11	6	8 9 17 18		1 64.0 58.6 46.6 49.0 1 67.0 61.6 49.6 52.0			79 169 125 268
Princess Joann Road to Chaparral Drive, Near Term + 10/9ct 2	10	,	40	0.5	2.0%	2.0%	63 -	37	80 172		50 4,507 737 55		03 6	3	9 9			59.4 45.7 44.9 50.0 52.2	17 37	80 172
Cuyamaca Street											0 0 0		0 0	0	0 0				0 0	0 0
Chaparral Drive to Woodglen Vista Drive, Near Term 2	40	683	35	0.5	3.0%	2.0%	54 -	-		- 5	50 531 87 66	3 18 ·	12 1	0	2 1	65.1 74.8 80.0 0.9 51.5 46.7 50.	3 54.7 48.6 39.2 40.4	49.6 37.5 37.3 41.0 43.8	4 9	20 42
Chaparral Drive to Woodglen Vista Drive, Near Term + 50% proje 4	16		50	0.5	3.0%	2.0%	67 -	65	139 300		50 4,921 804 60		13 10	4	14 10		4 67.6 62.7 51.2 51.2			139 300
Chaparral Drive to Woodglen Vista Drive, Near Term + Project 4	16		50	0.5	3.0%	2.0%	69 -	99	213 459		50 9,311 1,522 1,15		14 18	7	27 19		1 70.4 65.5 54.0 54.0			213 459
Chaparral Drive to Woodglen Vista Drive, Near Term + 50% proje 4 Cuyamaca Street	16	6,483	50	0.5	3.0%	2.0%	67 -	66	141 305	J5 5	50 5,037 823 62 0 0 0	2 170 1	16 10 0 0	0	15 10 0 0				30 66 1 0 0	0 0 0
Woodglen Vista Drive to El Nopal, Near Term 2	40	4,472	35	0.5	3.0%	2.0%	62 -	-	69 149	19 5	50 3,475 568 429	9 117 8	30 7	3	10 7			3 57.7 45.7 45.4 49.2 51.9	15 32	69 149
Woodglen Vista Drive to El Nopal, Near Term + 50% project 4	16	,	50	0.5	3.0%	2.0%	68 -	84	182 392		50 7,352 1,202 90		69 14	5	21 15			0 65.1 53.4 51.1 53.9 57.7		182 392
Woodglen Vista Drive to El Nopal, Near Term + Project 4	16	14,452	50	0.5	3.0%	2.0%	70 -	112	241 520	20 5	50 11,229 1,835 1,38	37 379 2	58 22	8	33 23	71.1 78.8 83.0 0.9 69.2 62.4 65.	0 71.2 66.3 54.8 54.8	8 66.9 55.2 53.0 55.7 59.6	52 112 2	241 520
Woodglen Vista Drive to El Nopal, Near Term + 50% project + cc 4	16	9,612	50	0.5	3.0%	2.0%	68 -	85	184 396	96 5	50 7,469 1,221 92	3 252 1	71 15	5	22 15					184 396
Cuyamaca Street											0 0 0	-	0 0	0	0 0				0 0	0 0
El Nopal to Mast Boulevard, Near Term 3 El Nopal to Mast Boulevard, Near Term + 50% project 4	30 16		35 50	0.5 0.5	3.0% 3.0%	2.0% 2.0%	65 - 70 -	107	113 244 231 497		50 7,127 1,165 88 50 10.496 1.716 1.29		63 14 41 20	5	21 15 30 22					113 244 231 497
El Nopal to Mast Boulevard, Near Term + Project 4 El Nopal to Mast Boulevard, Near Term + Project 4	16		50	0.5	3.0%	2.0%	71 60	129	278 598		50 13,864 2,266 1,7		18 27	10	40 29					278 598
El Nopal to Mast Boulevard, Near Term + 50% project + construc 4	16	,	50	0.5	3.0%	2.0%	70 -	108	232 501		50 10,612 1,735 1,3		43 21	8	31 22		7 71.0 66.1 54.6 54.5			232 501
Magnolia Avenue		.,			•						0 0 0	0	0 0	0	0 0	#### #### #### #### #### #### ####			0 0	0 0
Cuyamaca Street to Princess Joann Road, Near Term 2	15		35	0.5	3.0%	2.0%	#VALUE! #VALUE				50 ###### ###### ####			# ######		## 65.1 74.8 80.0 0.1 #### #### ###	# #### #### #### ####	#### #### #### #### ####	#VALUE! #VALUE! #VALU	
Cuyamaca Street to Princess Joann Road, Near Term + 50% prc 2	15		35	0.5	3.0%	2.0%	#VALUE! #VALUE				50 ###### ###### ####							#### #### #### #### ####		
Cuyamaca Street to Princess Joann Road, Near Term + Project 2	15		35	0.5	3.0%	2.0%	#VALUE! #VALUE				50 ###### ###### ####							##### #### #### #### ####		
Cuyamaca Street to Princess Joann Road, Near Term + Project 2 Magnolia Avenue	15	DNE	35	0.5	3.0%	2.0%	#VALUE! #VALUE	:! #VALUE! #	#VALUE! #VALU	LUE! 5			/### ##### 0 0	# ###### 0	0 0	## 65.1 74.8 80.0 0.1 #### #### ### #### #### #### #### ###				
Princess Joann Road to Woodglen Vista Drive, Near Term 4	15	2,204	40	0.5	3.0%	2.0%	60 -	_	- 109	na s	0 0 0 50 1,713 280 21		39 3	1	5 4				0 0 11 23	0 0 51 109
Princess Joann Road to Woodglen Vista Drive, Near Term + 509 4	15		40	0.5	3.0%	2.0%	62 -	-	69 149		50 2,734 447 33		33 5	2	8 6				15 32	69 149
Princess Joann Road to Woodglen Vista Drive, Near Term + Pro 4	15		40	0.5	3.0%	2.0%	63 -		85 184		50 3,756 614 46		36 7	3	11 8				18 40	85 184
Princess Joann Road to Woodglen Vista Drive, Near Term + 509 4	15		40	0.5	3.0%	2.0%	62 -	-	71 153	53 5	50 2,851 466 35	2 96 6	35 6	2	8 6					71 153
Magnolia Avenue											0 0 0		0 0	0	0 0				0 0	0 0
Woodglen Vista Drive to El Nopal, Near Term 4	15		40	0.5	3.0%	2.0%	66 -	62	133 287		50 7,315 1,196 90		68 14	5	21 15					133 287
Woodglen Vista Drive to El Nopal, Near Term + 50% project 4	15		40	0.5	3.0%	2.0%	67 -	70	151 326		50 8,846 1,446 1,09		03 17	6		67.4 76.3 81.2 0.9 65.3 59.8 63.				151 326
Woodglen Vista Drive to El Nopal, Near Term + Project 4 Woodglen Vista Drive to El Nopal, Near Term + 50% project + cc 4	15 15		40 40	0.5 0.5	3.0% 3.0%	2.0% 2.0%	68 - 67 -	78 71	168 362 152 328		50 10,377 1,696 1,28 50 8,963 1,465 1,10		38 20 06 17	8 7	30 22 26 19	67.4 76.3 81.2 0.9 66.0 60.5 63. 67.4 76.3 81.2 0.9 65.4 59.9 63.				168 362 152 328
Magnolia Avenue	10	11,035	40	0.0	J.U /0	2.0 /0			102 320		0 0 0		0 0	0	0 0				0 0	0 0
El Nopal to Mast Boulevard, Near Term 4	15	14,291	40	0.5	3.0%	2.0%	68 -	82	176 379	79 5	50 11,104 1,815 1,37	-	55 22	8	32 23					176 379
El Nopal to Mast Boulevard, Near Term + 50% project 4	15	15,606	40	0.5	3.0%	2.0%	69 -	87	186 402	02 5	50 12,126 1,982 1,49		78 24	9		67.4 76.3 81.2 0.9 66.7 61.2 64.				186 402
El Nopal to Mast Boulevard, Near Term + Project 4	15	,	40	0.5	3.0%	2.0%	69 -	91	197 424		50 13,148 2,149 1,62		02 26	10	38 27					197 424
El Nopal to Mast Boulevard, Near Term + 50% project + construc 4	15	15,756	40	0.5	3.0%	2.0%	69	87	188 404	04 5	50 12,242 2,001 1,5	3 413 2	81 24	9	36 25	67.4 76.3 81.2 0.9 66.7 61.2 64.	4 69.4 63.9 53.6 54.2	2 64.7 52.8 51.8 55.2 58.3	40 87 1	188 404



Attachment 4. Revised FHWA Noise Prediction Model Results – Average Construction Volumes (Prohibited Southbound Left-Turns from Cuyamaca Street Scenario)



Project Number: 1501144001
Project Name: Fanita Ranch - Restricted Access/Average Construction

Background Information

Model Description: Source of Traffic Volumes: Community Noise Descriptor:

Assumed 24-Hour Traffic Distribution: Total ADT Volumes Medium-Duty Trucks Heavy-Duty Trucks
 Day
 Evening
 Night

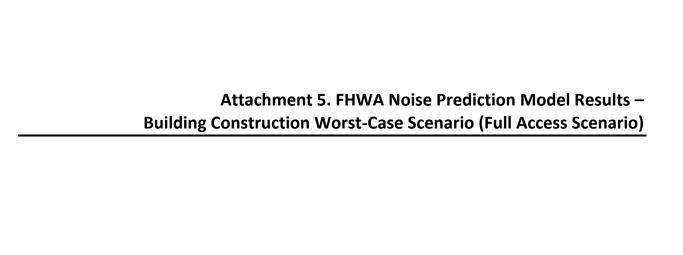
 77.70%
 12.70%
 9.60%

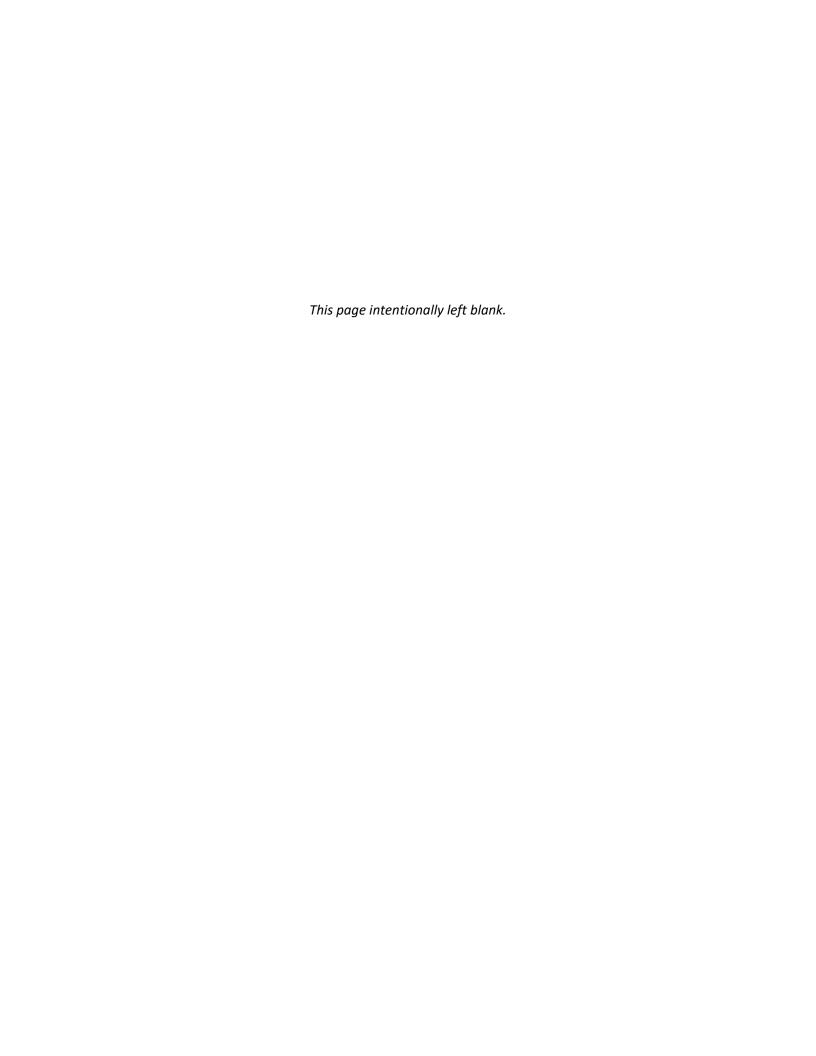
 87.43%
 5.05%
 7.52%

 89.10%
 2.84%
 8.06%
 "-" = contour is located within the roadway right-of-way. Distance is from the centerline of the roadway segment to the receptor location.

Heavy-Duty Trucks	89.10%	2.84%	8.06%													
			Danima		\/-I-:-I	- 14:	Distance		f D d		Traffic Volumes		Ref. Energy Leve Dist Ld	Le Ln	DISTANCE TO CONTO	OUR (2)
Analysis Condition	Median	ADT	Design Speed	Alpha	Vehicl Medium	e Mix Heavy	Ldn at		e of Roadway to Contour	С	Calc Day Eve Night MTd HTd MTe	HTe MTn HTn	A MT HT Adj A MT HT Tota	IA MT HT Total A MT HT	Total 70 Ldn 65 Ldn 60 Ldn	ln 55 Ldn
Roadway, Segment Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	50 Feet 70 Ld	n 65 Ldn	60 Ldn 55	_dn [Dist					
Mast Boulevard Cuyamaca Street to Magnolia Ave, Near Term 4	15	19,616	40	0.5	3.0%	2.0%	70 -	101	217 46	:0 1	0 0 0 0 0 0 0 50 15,242 2,491 1,883 515 350 30	11 44 32	#### #### #### #### #### #### #### 67.4 76.3 81.2 0.9 67.7 62.2 65.3 70.4			0 217 46
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 4	15	21,326	40	0.5	3.0%	2.0%	70 -	107			50 16,570 2,708 2,047 559 380 32	12 48 34				230 49
Cuyamaca Street to Magnolia Ave, Near Term + project 4	15	23,036	40	0.5	3.0%	2.0%	70 52		242 52		50 17,899 2,926 2,211 604 411 35	13 52 37				242 52
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 4	15	21,476	40	0.5	3.0%	2.0%	70 -	107	231 49	97 :	50 16,687 2,727 2,062 563 383 33	12 48 35				231 49
Princess Joann Road											0 0 0 0 0 0	0 0 0	#### #### #### #### #### #### ####			0
Cuyamaca Street to Magnolia Ave, Near Term 2	0	685	25	0.5	2.0%	2.0%	51 -	-	- :		50 532 87 66 12 12 1	0 1 1	59.4 71.1 78.7 -0.1 46.4 41.7 49.5 51.			13 2
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2 Cuyamaca Street to Magnolia Ave, Near Term + project 2	0	1,340	25 25	0.5	2.0% 2.0%	2.0% 2.0%	54 - 56 -	-	- 4		50 1,041 170 129 23 24 1 50 1,550 253 192 35 36 2	1 2 2	59.4 71.1 78.7 -0.1 49.3 44.6 52.4 54.1 56.1 59.4 71.1 78.7 -0.1 51.0 46.4 54.1 56.1			20 4
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2	0	1,490	25	0.5	2.0%	2.0%	54 -		- 4		50 1,550 253 192 35 36 2	1 2 2				21 4
Woodglen Vista Drive	·	1,100		0.0	2.070	2.070					0 0 0 0 0 0	0 0 0				0
Cuyamaca Street to Magnolia Ave, Near Term 2	0	1,759	25	0.5	2.0%	2.0%	55 -	-	- 5	1 !	50 1,367 223 169 31 31 2	1 3 3	59.4 71.1 78.7 -0.1 50.5 45.8 53.6 55.8	3 47.5 38.2 43.4 49.3 34.5 36.4 44.3	45.3 5 11 2	24 5
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2	0	2,089	25	0.5	2.0%	2.0%	56 -	-			50 1,623 265 201 37 37 2	1 3 3	59.4 71.1 78.7 -0.1 51.2 46.6 54.3 56.			27 5
Cuyamaca Street to Magnolia Ave, Near Term + project 2	0	2,419	25	0.5	2.0%	2.0%	57 -	-	- 6		50 1,880 307 232 42 43 2	1 4 4				29 6
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2	0	2,239	25	0.5	2.0%	2.0%	56 -	-	- 6	0 ;	50 1,740 284 215 39 40 2	1 3 4	59.4 71.1 78.7 -0.1 51.5 46.9 54.6 56.			28 6
El Nopal Cuyamaca Street to Magnolia Ave, Near Term 2	0	3,886	35	0.5	2.0%	2.0%	60 -	_	51 1°	10 4	0 0 0 0 0 0 50 3,019 494 373 68 69 4	0 0 0 0 2 6 6	#### #### #### #### #### #### #### 65.1 74.8 80.0 -0.1 58.1 51.5 56.8 61.4			0 51 11
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2	0	4,216	35	0.5	2.0%	2.0%	60 -	_			50 3,276 535 405 74 75 4	2 6 7	65.1 74.8 80.0 -0.1 58.5 51.9 57.2 61.			54 11
Cuyamaca Street to Magnolia Ave, Near Term + project 2	0	4,546	35	0.5	2.0%	2.0%	61 -	-			50 3,532 577 436 79 81 5	3 7 7	65.1 74.8 80.0 -0.1 58.8 52.2 57.5 61.			56 12
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2	0	4,366	35	0.5	2.0%	2.0%	61 -	-	55 1°	18 !	50 3,392 554 419 76 78 4	2 7 7	65.1 74.8 80.0 -0.1 58.6 52.1 57.4 61.	5 55.7 44.5 47.2 56.5 42.7 42.6 48.1	50.1 12 26 5	55 11
Cuyamaca Street											0 0 0 0 0 0	0 0 0	#### #### #### #### #### #### ####	+ +++++ +++++ +++++ +++++ +++++ +++++		0
Project Site to Magnolia Avenue, Near Term 2	10	DNE	40	0.5	2.0%		#VALUE! #VALU					+ ###### ###### ####	"" OTT TO O OTTE OTT WITH WHITH WHITH		#### #VALUE! #VALUE! #VALUE	
Project Site to Magnolia Avenue, Near Term + 50% project 2	10	6,960	40	0.5	2.0%	2.0%	64 -	42	90 19		50 5,408 884 668 122 124 7	4 10 11		9 59.5 47.5 49.9 60.2 46.5 45.6 50.8		90 19
Project Site to Magnolia Avenue, Near Term + Project 2 Project Site to Magnolia Avenue, Near Term + 50% project + cor 2	10 10	13,920 7,110	40 40	0.5 0.5	2.0% 2.0%	2.0% 2.0%	67 - 64 -	66 42	143 30 92 19		50 10,816 1,768 1,336 243 248 14 50 5,524 903 683 124 127 7	8 21 22 4 11 11				143 30 92 19
Cuyamaca Street	10	7,110	40	0.5	2.0%	2.0%	04 -	42	92 18	97 ;	0 0 0 0 0 0	0 0 0				0
Magnolia Avenue to Princess Joann Road, Near Term 2	10	DNE	40	0.5	2.0%	2.0%	#VALUE! #VALU	JE! #VALUE!	#VALUE! #VA	UE!	50 ##### ##### ##### ##### #####					
Magnolia Avenue to Princess Joann Road, Near Term + 50% prc 2	10	6,960	40	0.5	2.0%	2.0%	64 -	42	90 19		50 5,408 884 668 122 124 7	4 10 11		9 59.5 47.5 49.9 60.2 46.5 45.6 50.8		90 19
Magnolia Avenue to Princess Joann Road, Near Term + Project 2	10	13,920	40	0.5	2.0%	2.0%	67 -	66	143 30	9 :	50 10,816 1,768 1,336 243 248 14	8 21 22	67.4 76.3 81.2 0.1 65.4 58.1 63.0 67.9	9 62.5 50.5 52.9 63.2 49.5 48.7 53.8	56.0 31 66 14	143 30
Magnolia Avenue to Princess Joann Road, Near Term + 50% pro 2	10	7,110	40	0.5	2.0%	2.0%	64 -	42	92 19	97 :	50 5,524 903 683 124 127 7	4 11 11	07.1 10.0 01.2 0.1 02.0 00.2 00.1 00.			92 19
Cuyamaca Street											0 0 0 0 0 0	0 0 0				0
Princess Joann Road to Chaparral Drive, Near Term 2	10	DNE	40 40	0.5	2.0%		#VALUE! #VALU				50 ##### ##### ##### ##### #####	######################################		* #### #### #### #### #### ####		
Princess Joann Road to Chaparral Drive, Near Term + 50% proje 2 Princess Joann Road to Chaparral Drive, Near Term + Project 2	10 10	6,305 12,610	40	0.5	2.0% 2.0%	2.0% 2.0%	66 -	39 62	134 28		50 4,899 801 605 110 112 6 50 9,798 1,601 1,211 220 225 13	7 19 20	0111 1010 0112 011 0210 0111 0010 011			84 18 134 28
Princess Joann Road to Chaparral Drive, Near Term + 10ject 2	10	6,455	40	0.5	2.0%	2.0%	64 -	40			50 5,016 820 620 113 115 7	4 10 10				86 18
Cuyamaca Street											0 0 0 0 0 0	0 0 0				0
Chaparral Drive to Woodglen Vista Drive, Near Term 2	40	683	35	0.5	3.0%	2.0%	54 -	-			50 531 87 66 18 12 1	0 2 1	65.1 74.8 80.0 0.9 51.5 46.7 50.3 54.	7 48.6 39.2 40.1 49.6 37.5 37.3 41.0	43.8 4 9 2	20 4
Chaparral Drive to Woodglen Vista Drive, Near Term + 50% proj	16	6,988	50	0.5	3.0%	2.0%	67 -	69	149 32	20 5	50 5,430 887 671 183 125 11	4 16 11	71.1 78.8 83.0 0.9 66.0 59.3 61.8 68.4	0 63.2 51.7 51.6 63.7 52.1 49.8 52.6		149 32
Chaparral Drive to Woodglen Vista Drive, Near Term + Project 4	16	13,293	50	0.5	3.0%	2.0%	70 -	106	228 49		50 10,329 1,688 1,276 349 237 20	8 30 21				228 49
Chaparral Drive to Woodglen Vista Drive, Near Term + 50% proj. 4	16	7,138	50	0.5	3.0%	2.0%	67 -	70	151 32	25 (50 5,546 907 685 187 127 11	4 16 12				151 32
Cuyamaca Street Woodglen Vista Drive to El Nopal, Near Term 2	40	4,472	35	0.5	3.0%	2.0%	62 -		69 14	19 :	0 0 0 0 0 0 50 3,475 568 429 117 80 7	0 0 0 3 10 7				0 69 14
Woodglen Vista Drive to El Nopal, Near Term 2 Woodglen Vista Drive to El Nopal, Near Term + 50% project 4	16	10,457	50	0.5	3.0%	2.0%	69 -	90	194 4		50 8,125 1,328 1,004 274 186 16	6 24 17				194 41
Woodglen Vista Drive to El Nopal, Near Term + Project 4	16	16,442	50	0.5	3.0%	2.0%	71 57	122	263 56		50 12,775 2,088 1,578 431 293 25	9 37 27				263 56
Woodglen Vista Drive to El Nopal, Near Term + 50% project + cc 4	16	10,607	50	0.5	3.0%	2.0%	69 -	91	196 42		50 8,242 1,347 1,018 278 189 16	6 24 17		9 65.0 53.5 53.4 65.5 53.9 51.6 54.4		196 42
Cuyamaca Street											0 0 0 0 0 0	0 0 0	#### #### #### #### #### #### #### ####	+ +++++ +++++ +++++ +++++ +++++	#### 0 0	0
El Nopal to Mast Boulevard, Near Term 3	30	9,173	35	0.5	3.0%	2.0%	65 -	-	113 24	14 5	50 7,127 1,165 881 241 163 14	5 21 15	65.1 74.8 80.0 1.0 62.9 58.1 61.7 66.	1 60.0 50.5 51.5 61.0 48.9 48.7 52.4		113 24
El Nopal to Mast Boulevard, Near Term + 50% project 4	16	14,823	50	0.5	3.0%	2.0%	70 53	114	245 52		50 11,517 1,883 1,423 389 264 22	8 33 24		3 66.4 54.9 54.9 67.0 55.4 53.1 55.8		245 52
El Nopal to Mast Boulevard, Near Term + Project 4	16	20,473	50	0.5	3.0%	2.0%	72 66	141	304 65		50 15,908 2,600 1,965 537 365 31	12 46 33				804 65
El Nopal to Mast Boulevard, Near Term + 50% project + construc 4	16	14,973	50	0.5	3.0%	2.0%	70 53	115	247 53	32 :	50 11,634 1,902 1,437 393 267 23	9 34 24				247 53
Magnolia Avenue Cuyamaca Street to Princess Joann Road, Near Term 2	15	DNE	35	0.5	3.0%	2.0%	#VALUE! #VALU	IF! #\/ΔΙΙΙ⊑!	#VALUE! #\/AI	UE!	0 0 0 0 0 0 0 50 ###### ###### ###### ###### #######	0 0 0 0			#### 0 0 #### #VALUE! #VALUE! #VALUE	υ JFI #\/ΔΙΙΙΕ
Cuyamaca Street to Princess Joann Road, Near Term + 50% prc 2	15	DNE	35	0.5	3.0%	2.0%			#VALUE! #VA		50 ##### ##### ##### ##### ###### ######					
Cuyamaca Street to Princess Joann Road, Near Term + Project 2		DNE	35	0.5	3.0%		#VALUE! #VALU				50 ##### ##### ##### ##### ##### #####					
Cuyamaca Street to Princess Joann Road, Near Term + Project 2	15															
	15 15	DNE	35	0.5	3.0%	2.0%	#VALUE: #VALUE	JE! #VALUE!	#VALUE! #VAI	_UE! :		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	## 65.1 74.8 80.0 0.1 #### #### #### ####	+ +++++ +++++ +++++ +++++ +++++++++++++	#### #VALUE! #VALUE! #VALUE	JE! #VALUE
Magnolia Avenue		DNE	35	0.5	3.0%	2.0%	#VALUE: #VALUE	JE! #VALUE!	#VALUE! #VA	_UE! :	0 0 0 0 0 0	0 0 0				JE! #VALUE 0
Magnolia Avenue Princess Joann Road to Woodglen Vista Drive, Near Term 4	15 15	2,204	40	0.5	3.0%	2.0%	60 -	JE! #VALUE! -	- 10)9 (0 0 0 0 0 0 0 50 1,713 280 212 58 39 3	0 0 0 1 5 4	#### #### #### #### #### #### #### 67.4 76.3 81.2 0.9 58.2 52.7 55.9 60.	# #### #### #### #### #### #### 9 55.3 45.1 45.7 56.1 44.2 43.2 46.6	#### 0 0 49.7 11 23 5	0 51 10
Magnolia Avenue Princess Joann Road to Woodglen Vista Drive, Near Term 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 509 4	15 15 15	2,204 2,859	40 40	0.5 0.5	3.0% 3.0%	2.0% 2.0%	60 - 61 -	- - -	- 10 60 13)9 ! 30 !	0 0 0 0 0 0 0 50 1,713 280 212 58 39 3 50 2,221 363 274 75 51 4	0 0 0 1 5 4 2 6 5	#### #### #### #### #### #### #### 67.4 76.3 81.2 0.9 58.2 52.7 55.9 60. 67.4 76.3 81.2 0.9 59.3 53.8 57.0 62.	# #### #### #### #### #### #### 9 55.3 45.1 45.7 56.1 44.2 43.2 46.6 0 56.4 46.2 46.8 57.2 45.4 44.4 47.7	#### 0 0 49.7 11 23 5 50.8 13 28 6	0 51 10 60 13
Magnolia Avenue Princess Joann Road to Woodglen Vista Drive, Near Term 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 50% 4 Princess Joann Road to Woodglen Vista Drive, Near Term + Pro 4	15 15 15 15	2,204 2,859 3,514	40 40 40	0.5 0.5 0.5	3.0% 3.0% 3.0%	2.0% 2.0% 2.0%	60 - 61 - 62 -	- - - -	- 10 60 13 69 14	09 5 80 5	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 1 5 4 2 6 5 2 8 6	#### #### #### #### #### #### #### #### #### #### #### 67.4 76.3 81.2 0.9 58.2 52.7 55.9 60.2 67.4 76.3 81.2 0.9 59.3 53.8 57.0 62.1 67.4 76.3 81.2 0.9 60.2 54.7 57.9 62.2	##### #### #### #### #### 9 55.3 45.1 45.7 56.1 44.2 43.2 46.6 0 56.4 46.2 46.8 57.2 45.4 44.4 47.7 9 57.3 47.1 47.7 58.1 46.3 45.3 48.6	#### 0 0 49.7 11 23 5 50.8 13 28 6 51.7 15 32 6	0 51 10 60 13 69 14
Magnolia Avenue 4 Princess Joann Road to Woodglen Vista Drive, Near Term 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 509 4 Princess Joann Road to Woodglen Vista Drive, Near Term + Pro 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 509 4	15 15 15	2,204 2,859	40 40	0.5 0.5	3.0% 3.0%	2.0% 2.0%	60 - 61 -	- - - -	- 10 60 13 69 14	09 5 80 5	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 1 5 4 2 6 5 2 8 6 2 7 5	#### #### #### #### #### #### 67.4 76.3 81.2 0.9 58.2 52.7 55.9 60. 67.4 76.3 81.2 0.9 59.3 53.8 57.0 62. 67.4 76.3 81.2 0.9 60.2 54.7 57.9 62. 67.4 76.3 81.2 0.9 59.5 54.0 57.2 62.	# #### #### #### #### #### #### 9 55.3 45.1 45.7 56.1 44.2 43.2 46.6 56.4 46.2 46.8 57.2 45.4 44.4 47.7 9 57.3 47.1 47.7 58.1 46.3 45.3 48.6 3 56.7 46.5 47.0 57.5 45.6 44.6 48.0	#### 0 0 49.7 11 23 5 50.8 13 28 6 51.7 15 32 6 51.1 13 29 6	0 51 10 60 13 69 14 62 13
Magnolia Avenue 4 Princess Joann Road to Woodglen Vista Drive, Near Term 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 509 4 Princess Joann Road to Woodglen Vista Drive, Near Term + Pro 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 509 4 Magnolia Avenue	15 15 15 15 15	2,204 2,859 3,514 3,009	40 40 40 40	0.5 0.5 0.5 0.5	3.0% 3.0% 3.0% 3.0%	2.0% 2.0% 2.0% 2.0%	60 - 61 - 62 - 61 -	- - - -	- 10 60 13 69 14 62 13	09 8 80 8 19 8 34 8	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 1 5 4 2 6 5 2 8 6 2 7 5 0 0 0	#### #### #### #### #### #### #### #### 67.4 76.3 81.2 0.9 58.2 52.7 55.9 60. 67.4 76.3 81.2 0.9 59.3 53.8 57.0 62. 67.4 76.3 81.2 0.9 60.2 54.7 57.9 62. 67.4 76.3 81.2 0.9 59.5 54.0 57.2 62.	# #### #### #### #### #### #### 9 55.3 45.1 45.7 56.1 44.2 43.2 46.6 1 56.4 46.2 46.8 57.2 45.4 44.4 47.7 1 57.3 47.1 47.7 58.1 46.3 45.3 48.6 3 56.7 46.5 47.0 57.5 45.6 44.6 48.0 # #### #### #### #### #### #### ####	#### 0 0 49.7 11 23 5 50.8 13 28 6 51.7 15 32 6 51.1 13 29 6	0 51 10 60 13 69 14 62 13
Magnolia Avenue 4 Princess Joann Road to Woodglen Vista Drive, Near Term 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 50° 4 Princess Joann Road to Woodglen Vista Drive, Near Term + Pro 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 50° 4 Magnolia Avenue Woodglen Vista Drive to El Nopal, Near Term 4	15 15 15 15 15 15	2,204 2,859 3,514 3,009	40 40 40 40 40	0.5 0.5 0.5 0.5	3.0% 3.0% 3.0% 3.0%	2.0% 2.0% 2.0% 2.0%	60 - 61 - 62 - 61 -	- - - -	- 10 60 13 69 14 62 13	99 8 80 8 19 8 34 8	0 0 0 0 0 0 0 50 1,713 280 212 58 39 3 50 2,221 363 274 75 51 4 50 2,730 446 337 92 63 5 50 2,338 382 289 79 54 5 0 0 0 0 0 0 0 50 7,315 1,196 904 247 168 14	0 0 0 1 5 4 2 6 5 2 8 6 2 7 5 0 0 0 5 21 15	#### #### #### #### #### #### #### #### 67.4 76.3 81.2 0.9 58.2 52.7 55.9 60. 67.4 76.3 81.2 0.9 59.3 53.8 57.0 62. 67.4 76.3 81.2 0.9 60.2 54.7 57.9 62. 67.4 76.3 81.2 0.9 59.5 54.0 57.2 62. #### #### #### #### #### #### #### ##	# #### #### #### #### #### #### 9 55.3 45.1 45.7 56.1 44.2 43.2 46.6 0 56.4 46.2 46.8 57.2 45.4 44.4 47.7 9 57.3 47.1 47.7 58.1 46.3 45.3 48.6 3 56.7 46.5 47.0 57.5 45.6 44.6 48.0 # #### #### #### #### #### #### #### 2 61.6 51.4 52.0 62.4 50.5 49.5 52.9	#### 0 0 49.7 11 23 5 50.8 13 28 6 51.7 15 32 6 51.1 13 29 6 51.1 13 29 6 #### 0 0 56.0 29 62 13	0 51 10 60 13 69 14 62 13 0
Magnolia Avenue 4 Princess Joann Road to Woodglen Vista Drive, Near Term 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 509 4 Princess Joann Road to Woodglen Vista Drive, Near Term + Pro 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 509 4 Magnolia Avenue 4 Woodglen Vista Drive to El Nopal, Near Term + 50% project 4 Woodglen Vista Drive to El Nopal, Near Term + 50% project 4	15 15 15 15 15 15	2,204 2,859 3,514 3,009 9,415 10,400	40 40 40 40 40 40	0.5 0.5 0.5 0.5 0.5	3.0% 3.0% 3.0% 3.0% 3.0%	2.0% 2.0% 2.0% 2.0% 2.0% 2.0%	60 - 61 - 62 - 61 - 66 - 67 -	- - - - 62 66	- 10 60 13 69 14 62 13 133 28 142 30	09	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 1 5 4 2 6 5 2 8 6 2 7 5 0 0 0 5 21 15 6 23 17	#### #### #### #### #### #### #### ### 67.4 76.3 81.2 0.9 58.2 52.7 55.9 60.1 67.4 76.3 81.2 0.9 59.3 53.8 57.0 62.1 67.4 76.3 81.2 0.9 60.2 54.7 57.9 62.1 67.4 76.3 81.2 0.9 59.5 54.0 57.2 62.1 #### #### #### #### #### #### #### ##	# #### #### #### #### #### #### #### 9 55.3 45.1 45.7 56.1 44.2 43.2 46.6 5 56.4 46.2 46.8 57.2 45.4 44.4 47.7 9 57.3 47.1 47.7 58.1 46.3 45.3 48.6 3 56.7 46.5 47.0 57.5 45.6 44.6 48.0 # ### #### #### #### #### #### #### #	#### 0 0 49.7 11 23 5 50.8 13 28 6 51.7 15 32 6 51.1 13 29 6 #### 0 0 56.0 29 62 13 56.4 31 66 14	0 51 10 60 13 69 14 62 13 0 133 28
Magnolia Avenue 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 50% 4 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 50% 4 4 Princess Joann Road to Woodglen Vista Drive, Near Term + Pro 4 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 50% 4 4 Magnolia Avenue 4 Woodglen Vista Drive to El Nopal, Near Term + 50% project 4 4 Woodglen Vista Drive to El Nopal, Near Term + Project 4 4	15 15 15 15 15 15 15	2,204 2,859 3,514 3,009 9,415 10,400 11,385	40 40 40 40 40 40 40	0.5 0.5 0.5 0.5 0.5 0.5	3.0% 3.0% 3.0% 3.0% 3.0% 3.0%	2.0% 2.0% 2.0% 2.0% 2.0% 2.0% 2.0%	60 - 61 - 62 - 61 - 66 - 67 - 67 -	- - - - - 62 66 70	- 10 60 11 69 14 62 13 133 28 142 30 151 32	09	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 1 5 4 2 6 5 5 2 8 6 6 2 7 5 0 0 0 5 21 15 6 23 17 6 26 18	#### #### #### #### #### #### #### #### ####	# #### #### #### #### #### #### #### 9 55.3 45.1 45.7 56.1 44.2 43.2 46.6 56.4 46.2 46.8 57.2 45.4 44.4 47.7 9 57.3 47.1 47.7 58.1 46.3 45.3 48.6 3 56.7 46.5 47.0 57.5 45.6 44.6 48.0 # #### #### #### #### #### #### #### 6 61.6 51.4 52.0 62.4 50.5 49.5 52.9 6 62.1 51.8 52.4 62.9 51.0 50.0 53.4 0 62.4 52.2 52.8 63.3 51.4 50.4 53.8	#### 0 0 49.7 11 23 5 50.8 13 28 6 51.7 15 32 6 51.1 13 29 6 #### 0 0 56.0 29 62 13 56.4 31 66 14 56.8 33 70 15	0 51 10 60 13 69 14 62 13 0 133 28 142 30 151 32
Magnolia Avenue Princess Joann Road to Woodglen Vista Drive, Near Term 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 50% 4 Princess Joann Road to Woodglen Vista Drive, Near Term + Pro 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 50% 4 Magnolia Avenue 4 Woodglen Vista Drive to El Nopal, Near Term + 50% project 4	15 15 15 15 15 15	2,204 2,859 3,514 3,009 9,415 10,400	40 40 40 40 40 40	0.5 0.5 0.5 0.5 0.5	3.0% 3.0% 3.0% 3.0% 3.0%	2.0% 2.0% 2.0% 2.0% 2.0% 2.0%	60 - 61 - 62 - 61 - 66 - 67 -	- - - - 62 66	- 10 60 13 69 14 62 13 133 28 142 30	09	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 1 5 4 2 6 5 5 2 8 6 6 2 7 5 0 0 0 5 21 15 6 23 17 6 26 18	#### #### #### #### #### #### #### #### ####	# #### #### #### #### #### #### #### 9 55.3 45.1 45.7 56.1 44.2 43.2 46.6 56.4 46.2 46.8 57.2 45.4 44.4 47.7 9 57.3 47.1 47.7 58.1 46.3 45.3 48.6 3 56.7 46.5 47.0 57.5 45.6 44.6 48.0 # #### #### #### #### #### #### #### 2 61.6 51.4 52.0 62.4 50.5 49.5 52.9 6 62.1 51.8 52.4 62.9 51.0 50.0 53.4 7 62.1 51.9 52.5 62.9 51.0 50.0 53.4	#### 0 0 0 49.7 11 23 5 50.8 13 28 6 51.7 15 32 6 51.1 13 29 6 #### 0 0 #### 0 0 56.0 29 62 13 56.4 31 66 14 56.8 33 70 15 56.5 31 67 14	0 51 10 60 13 69 14 62 13 0 133 28 142 30 151 32 144 30
Magnolia Avenue 4 Princess Joann Road to Woodglen Vista Drive, Near Term 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 50% 4 Princess Joann Road to Woodglen Vista Drive, Near Term + Pro 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 50% 4 Magnolia Avenue 4 Woodglen Vista Drive to El Nopal, Near Term 4 Woodglen Vista Drive to El Nopal, Near Term + 50% project 4 Woodglen Vista Drive to El Nopal, Near Term + Project 4 Woodglen Vista Drive to El Nopal, Near Term + 50% project + cc 4	15 15 15 15 15 15 15	2,204 2,859 3,514 3,009 9,415 10,400 11,385	40 40 40 40 40 40 40	0.5 0.5 0.5 0.5 0.5 0.5	3.0% 3.0% 3.0% 3.0% 3.0% 3.0%	2.0% 2.0% 2.0% 2.0% 2.0% 2.0% 2.0%	60 - 61 - 62 - 61 - 66 - 67 - 67 -	- - - - - 62 66 70	- 10 60 11 69 14 62 13 133 28 142 30 151 32	99	0 0 0 0 0 0 50 1,713 280 212 58 39 3 50 2,221 363 274 75 51 4 50 2,730 446 337 92 63 5 50 2,338 382 289 79 54 5 0 0 0 0 0 0 0 50 7,315 1,196 904 247 168 14 50 8,081 1,321 998 273 185 16 50 8,846 1,446 1,093 299 203 17 50 8,197 1,340 1,013 277 188 16	0 0 0 0 1 5 4 2 6 5 2 8 6 6 2 7 5 5 21 15 6 23 17 6 26 18 6 24 17 0 0 0 0	#### #### #### #### #### #### #### #### ####	# #### #### #### #### #### #### #### 9 55.3 45.1 45.7 56.1 44.2 43.2 46.6 56.4 46.2 46.8 57.2 45.4 44.4 47.7 9 57.3 47.1 47.7 58.1 46.3 45.3 48.6 3 56.7 46.5 47.0 57.5 45.6 44.6 48.0 # ### #### #### #### #### #### #### 5 61.4 51.4 52.0 62.4 50.5 49.5 52.9 6 62.1 51.8 52.4 62.9 51.0 50.0 53.4 0 62.4 52.2 52.8 63.3 51.4 50.4 53.8 7 62.1 51.9 52.5 62.9 51.0 50.0 53.4 # ### #### #### #### #### #### #### #	#### 0 0 49.7 11 23 5 50.8 13 28 6 51.7 15 32 6 5 51.1 13 29 6 #### 0 0 56.0 29 62 13 56.4 31 66 14 56.8 33 70 15 56.5 31 67 14 #### 0 0	0 51 10 60 13 69 14 62 13 0 133 28 142 30 151 32 144 30
Magnolia Avenue 4 Princess Joann Road to Woodglen Vista Drive, Near Term 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 50% 4 Princess Joann Road to Woodglen Vista Drive, Near Term + Pro 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 50% 4 Magnolia Avenue 4 Woodglen Vista Drive to El Nopal, Near Term 4 Woodglen Vista Drive to El Nopal, Near Term + 50% project 4 Woodglen Vista Drive to El Nopal, Near Term + 50% project + cc 4 Magnolia Avenue El Nopal to Mast Boulevard, Near Term 4 El Nopal to Mast Boulevard, Near Term + 50% project 4	15 15 15 15 15 15 15 15 15	2,204 2,859 3,514 3,009 9,415 10,400 11,385 10,550	40 40 40 40 40 40 40	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	3.0% 3.0% 3.0% 3.0% 3.0% 3.0% 3.0% 3.0%	2.0% 2.0% 2.0% 2.0% 2.0% 2.0% 2.0% 2.0%	60 - 61 - 62 - 61 - 66 - 67 - 67 - 67 -	- - - - 62 66 70 67	- 10 60 11 69 14 62 13 133 26 142 30 151 33 144 30	99	0 0 0 0 0 0 50 1,713 280 212 58 39 3 50 2,221 363 274 75 51 4 50 2,730 446 337 92 63 5 50 2,338 382 289 79 54 5 0 0 0 0 0 0 0 50 7,315 1,196 904 247 168 14 50 8,081 1,321 998 273 185 16 50 8,846 1,446 1,093 299 203 17 50 8,197 1,340 1,013 277 188 16 0 0 0 0 0 0 0 0	0 0 0 0 1 5 4 2 6 5 5 2 8 6 6 2 7 5 0 0 0 5 21 15 6 23 17 6 26 18 6 24 17 0 0 0 8 32 23	#### #### #### #### #### #### #### #### ####	# #### #### #### #### #### #### #### ####	##### 0 0 0 49.7 11 23 5 50.8 13 28 6 51.7 15 32 6 51.1 13 29 6 51.1 13 29 6 60 29 62 13 56.0 29 62 13 56.4 31 66 14 56.8 33 70 15 56.5 31 67 14 #### 0 0 57.8 38 82 17	0 51 10 60 13 69 14 62 13 0 133 28 142 30 151 32 144 30 0
Magnolia Avenue 4 Princess Joann Road to Woodglen Vista Drive, Near Term 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 50% 4 Princess Joann Road to Woodglen Vista Drive, Near Term + Pro 4 Princess Joann Road to Woodglen Vista Drive, Near Term + 50% 4 Magnolia Avenue 4 Woodglen Vista Drive to El Nopal, Near Term 4 Woodglen Vista Drive to El Nopal, Near Term + 50% project 4 Woodglen Vista Drive to El Nopal, Near Term + Project 4 Woodglen Vista Drive to El Nopal, Near Term + 50% project + cc 4 Magnolia Avenue El Nopal to Mast Boulevard, Near Term 4	15 15 15 15 15 15 15 15 15 15	2,204 2,859 3,514 3,009 9,415 10,400 11,385 10,550	40 40 40 40 40 40 40 40 40	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	3.0% 3.0% 3.0% 3.0% 3.0% 3.0% 3.0% 3.0%	2.0% 2.0% 2.0% 2.0% 2.0% 2.0% 2.0% 2.0%	60 - 61 - 62 - 61 - 66 - 67 - 67 - 68 -	- - - - 62 66 70 67	- 11 60 13 69 14 62 13 133 28 142 30 151 33 144 30 176 33 186 44 197 42	09	0 0 0 0 0 0 50 1,713 280 212 58 39 3 50 2,221 363 274 75 51 4 50 2,730 446 337 92 63 5 50 2,338 382 289 79 54 5 0 0 0 0 0 0 0 50 7,315 1,196 904 247 168 14 50 8,081 1,321 998 273 185 16 50 8,846 1,446 1,093 299 203 17 50 8,197 1,340 1,013 277 188 16 0 0 0 0 0 0 0 50 11,104 1,815 1,372 375 255 22	0 0 0 0 1 1 5 4 2 6 5 2 8 6 6 2 7 5 0 0 0 0 5 21 15 6 23 17 6 26 18 6 24 17 0 0 0 0 8 32 23 9 35 25 10 38 27	#### #### #### #### #### #### #### #### ####	# #### #### #### #### #### #### #### 9 55.3 45.1 45.7 56.1 44.2 43.2 46.6 56.4 46.2 46.8 57.2 45.4 44.4 48.0 3 56.7 46.5 47.0 57.5 45.6 44.6 48.0 # #### #### #### #### #### #### #### 2 61.6 51.4 52.0 62.4 50.5 49.5 52.9 6 62.1 51.8 52.4 62.9 51.0 50.0 53.4 # #### #### #### #### #### #### #### 6 62.1 51.8 52.4 62.9 51.0 50.0 53.4 # #### #### #### #### #### #### #### 6 63.4 53.2 53.8 64.2 52.4 51.5 55.5 6 63.4 53.2 53.8 64.2 52.7 51.7 55.1	#### 0 0 0 49.7 11 23 5 50.8 13 28 6 51.7 15 32 6 51.1 13 29 6 51.1 13 29 6 #### 0 0 56.0 29 62 13 56.4 31 66 14 56.8 33 70 15 56.5 31 67 14 #### 0 0 57.8 38 82 17 58.2 40 87 18 58.6 42 91 19	0 51 10 60 13 69 14 62 13 0 133 28 142 30 151 32 144 30 0 176 37







Project Number: 1501144001
Project Name: Fanita Ranch - Full Access/Building Construction Scenario

Background Information

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.

Linscott, Law, and Greenspan, September 2020

Lan: X CNEL: "" a contour is legated within the conduct right of year. Model Description: Source of Traffic Volumes: Community Noise Descriptor:

 Day
 Evening
 Night

 77.70%
 12.70%
 9.60%

 87.43%
 5.05%
 7.52%

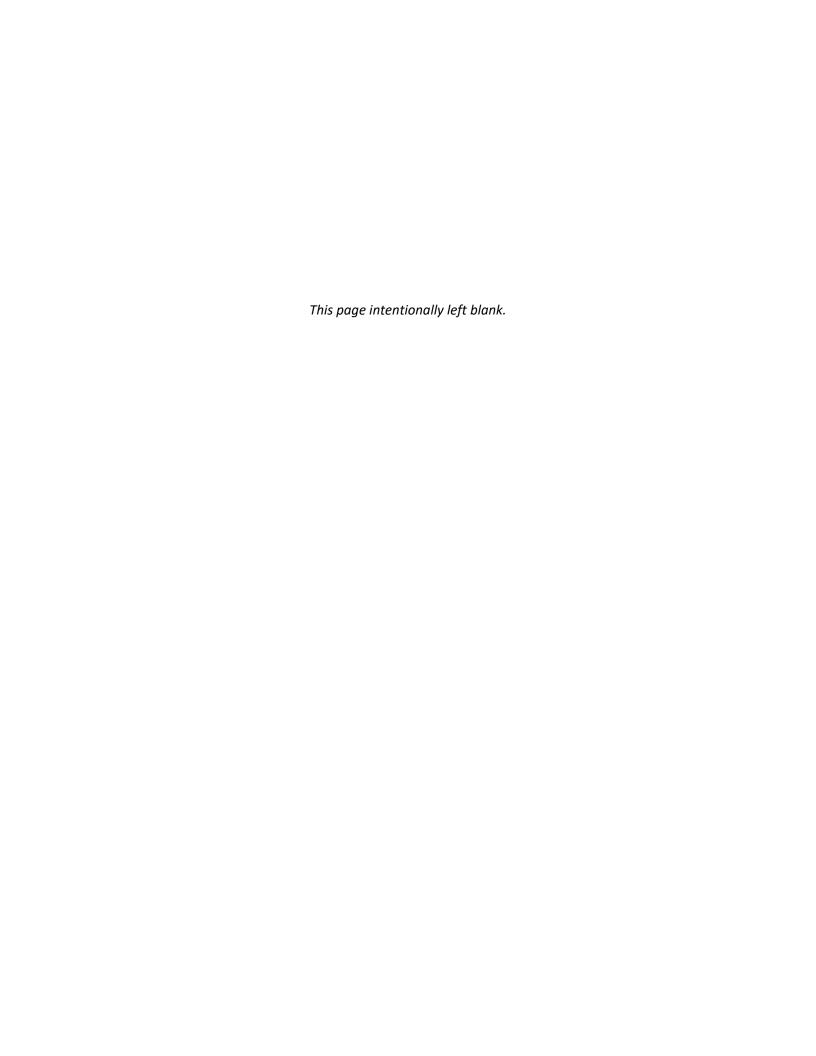
 89.10%
 2.84%
 8.06%
 Assumed 24-Hour Traffic Distribution: Total ADT Volumes Medium-Duty Trucks Heavy-Duty Trucks

"-" = contour is located within the roadway right-of-way. Distance is from the centerline of the roadway segment to the receptor location.

Heavy-Duty Trucks	69.10	% 2.84%	8.06%																					
			Danier		Vahie	ala Miss	Die	-t	Samtaulina ad	Deadway		Traffic Volur	nes					Ref. Energy Leve Dist Ld		Le	Ln	DISTANCE	TO CONTO	UR (2)
Analysis Condition	Media	an ADT	Design Speed		Medium	cle Mix Heavy	Ldn at	stance from C	Distance to C	-		Calc Day Eve	Night	MTd HT	d MTe	HTe N	1Tn HTn	A MT HT Adi A	MT HT Tota	al A MT H	T Total A MT HT Tota	70 Ldn 65 Ld	n 60 Ldn	55 Ldn
Roadway, Segment Lanes				Factor	Trucks	Trucks			65 Ldn 60			Dist						··· ··· ··· ··· ··· ··· ··· ··· ··· ··						
Mast Boulevard		40.040			0.00/	0.00/			404			0 (-	-	0 0	0	0 0				### #### #### #### #### ###	0	-	0 0
Cuyamaca Street to Magnolia Ave, Near Term 4 Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 4	15 15			0.5 0.5	3.0% 3.0%	2.0% 2.0%	70 70	-			468 474	50 15,242 2,4 50 15,549 2,5			50 30 57 30	11	44 32 45 32						01 21 02 22	
Cuyamaca Street to Magnolia Ave, Near Term + project 4	15			0.5	3.0%	2.0%	70	-			480	50 15,855 2,5	. , .		64 31	12	46 33		02.0 00.1 70.0	0 01.0 01.7 0	0.0 00.7 00.0 02.0 00.2 00.1		03 22	
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 4	15	21,084	40	0.5	3.0%	3.1%	71	55	119	256 5	553	50 16,382 2,6			85 32	19	48 53				57.4 66.1 53.9 53.0 58.4 60.5		19 25	
Princess Joann Road		005	05	0.5	0.00/	0.00/						0 (50 532 8	-		0 0 I2 1	0	0 0					3	-	0 0 3 27
Cuyamaca Street to Magnolia Ave, Near Term 2 Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2	0	685 2,000	25 25	0.5	2.0% 2.0%	2.0% 2.0%	51 56	-	-	- !	56	50 532 8 50 1,554 25		12 1 35 3	12 I 36 2	1	3 3	59.4 71.1 78.7 -0.1 46.4 59.4 71.1 78.7 -0.1 51.0			39.3 45.2 30.4 32.3 40.2 41.3 34.0 49.9 35.1 36.9 44.9 45.9	-	6 1 12 2	
Cuyamaca Street to Magnolia Ave, Near Term + project 2	0	3,315		0.5	2.0%	2.0%	58	-	-		78	50 2,576 42		58 5	59 3	2	5 5				6.1 52.1 37.3 39.1 47.1 48.		17 3	
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2	0	3,073	25	0.5	2.0%	9.6%	63	-	37	80 1	172	50 2,388 39	90 295	54 2	64 3	8	5 24							0 172
Woodglen Vista Drive Cuyamaca Street to Magnolia Ave, Near Term 2	0	1,759	25	0.5	2.0%	2.0%	55			_	51	50 1,367 2	U U 23 169	31 3	0 0	1	3 3	#### #### #### #### 59.4 71.1 78.7 -0.1 50.5					0 11 2	0 0
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2	0	2,414		0.5	2.0%	2.0%	57	-	-		63	50 1,876 30		42 4		1	4 4	59.4 71.1 78.7 -0.1 51.8			4.8 50.7 35.9 37.7 45.7 46.3	6	14 2	
Cuyamaca Street to Magnolia Ave, Near Term + project 2	0	3,069	25	0.5	2.0%	2.0%	58	-			74		90 295		55 3	2	5 5	59.4 71.1 78.7 -0.1 52.9					16 3	
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2 El Nopal	0	3,487	25	0.5	2.0%	8.7%	63	-	38	82 1	176	50 2,709 4		61 2	72 4	9	5 25 0 0				52.8 55.0 35.4 39.3 53.7 53.9	18		0 0
Cuyamaca Street to Magnolia Ave, Near Term 2	0	3,886	35	0.5	2.0%	2.0%	60	_	_	51 1	110	50 3,019 49	-	68 6	0 0 39 4	2	6 6						24 5	
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2	0	4,541	35	0.5	2.0%	2.0%	61	-			122	50 3,528 5	77 436	79 8	31 5	3	7 7				7.4 56.7 42.9 42.8 48.3 50.3		26 5	6 122
Cuyamaca Street to Magnolia Ave, Near Term + project 2	0	5,196	35	0.5	2.0%	2.0%	61	-			133	50 4,037 66			93 5	3	8 8		52.8 58.1 62.3	3 56.4 45.2 4	7.9 57.3 43.4 43.4 48.9 50.8			2 133
Cuyamaca Street to Magnolia Avenue, Near Term + 50% project 2 Cuyamaca Street	0	5,614	35	0.5	2.0%	6.2%	65	-	47	100 2	216		13 539 0 0		09 6	10 0	8 28 0 0		53.1 63.4 65.1	1 56.7 45.6 5 # #### #### #	53.2 58.6 42.6 43.7 54.1 54.8 ### #### #### #### #### ####	22	47 10 0	0 216
Project Site to Magnolia Avenue, Near Term 2	10	DNE	40	0.5	2.0%	2.0%	#VALUE!	#VALUE! #	VALUE! #V	ALUE! #VA	ALUE!	50 ###### ###	-	###### ###		•		### 67.4 76.3 81.2 0.1 ####	#### #### ####	,, ,,,,,, ,,,,,, ,, ,, ,,,,,,,,,,,,,,,		#VALUE! #VALU	-	-
Project Site to Magnolia Avenue, Near Term + 50% project 2	10	6,960	40	0.5	2.0%	2.0%	64	-			194		84 668		24 7	4	10 11		55.1 60.0 64.9	9 59.5 47.5 4	9.9 60.2 46.5 45.6 50.8 53.0	19	42 9	
Project Site to Magnolia Avenue, Near Term + Project 2 Project Site to Magnolia Avenue, Near Term + 50% project + cor 2	10 10	13,920 8.033		0.5 0.5	2.0%	2.0% 4.9%	67 66	-			309 287	50 10,816 1,7 50 6,242 1,0	768 1,336 020 771		48 14 53 8	8 11	21 22 12 32		58.1 63.0 67.9	9 62.5 50.5 5	52.9 63.2 49.5 48.7 53.8 56.0 54.4 61.3 46.3 46.3 55.3 56.3		66 14 62 13	
Project Site to Magnolia Avenue, Near Term + 50% project + cor 2 Cuyamaca Street	10	8,033	40	0.5	2.0%	4.9%	- 66		62	133 2	287		0 0		0 0	0	0 0				### #### #### #### #### ####	: 0		0 0
Magnolia Avenue to Princess Joann Road, Near Term 2	10	DNE	40	0.5	2.0%	2.0%	#VALUE!	#VALUE! #	VALUE! #V	ALUE! #VA	ALUE!	-	*### ######	-		######################################			#### #### ###		*** **** **** **** ****	#VALUE! #VALU	-	-
Magnolia Avenue to Princess Joann Road, Near Term + 50% pro 2	10	6,960	40	0.5	2.0%	2.0%	64	-			194	50 5,408 8			24 7	4	10 11			9 59.5 47.5 4		19	42 9	
Magnolia Avenue to Princess Joann Road, Near Term + Project 2 Magnolia Avenue to Princess Joann Road, Near Term + 50% prc 2	10 10	13,920 8,033		0.5 0.5	2.0% 2.0%	2.0% 4.9%	67 66	-			309 287	50 10,816 1,7 50 6,242 1,0	768 1,336 020 771		48 14 53 8	8 11	21 22 12 32				52.9 63.2 49.5 48.7 53.8 56.0 54.4 61.3 46.3 46.3 55.3 56.3		66 14 62 13	
Cuyamaca Street	10	0,033	40	0.5	2.076	4.970	- 00		02	133 2	201		0 0		0 0	0	0 0			# #### #### #	### #### #### #### #### ####	: 0		0 0
Princess Joann Road to Chaparral Drive, Near Term 2	10	DNE	40	0.5	2.0%	2.0%	#VALUE!	#VALUE! #	VALUE! #V				***** ********	###### ###	····	#######################################		### 67.4 76.3 81.2 0.1 ####	#### #### ###	# #### #### #	*** **** **** **** ****	#VALUE! #VALU		
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El Nopal to Mast Boulevard, Near Term + Project 4	16	17,843		0.5	3.0%	2.0%	71	60			598	50 13,864 2,2	266 1,713	468 3	18 27	10	40 29		63.3 65.9 72.		55.7 67.8 56.2 53.9 56.6 60.5		29 27	
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Princess Joann Road to Woodglen Vista Drive, Near Term + Pro 4	15		40	0.5	3.0%	2.0%	63	-			184		14 464		36 7	3	11 8				9.1 59.5 47.7 46.6 50.0 53.		40 8	
Princess Joann Road to Woodglen Vista Drive, Near Term + 50% 4 Magnolia Avenue	15	4,592	40	0.5	3.0%	7.1%	66	-	59	126 2	272	50 3,568 58	83 441	120 2	91 7	9	10 26				64.4 60.2 46.5 46.4 55.3 56.3 ### #### #### #### #### ####		59 12 0	0 0
Woodglen Vista Drive to El Nopal, Near Term 4	15	9,415	40	0.5	3.0%	2.0%	66	_	62	133 2	287	50 7,315 1,1		247 1	0 0 68 14	5	21 15				### #### #### #### #### 52.0 62.4 50.5 49.5 52.9 56.0	-	62 13	
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Woodglen Vista Drive to El Nopal, Near Term + Project 4	15			0.5	3.0%	2.0%	68	-			362	50 10,377 1,6			38 20	8	30 22				3.5 63.9 52.1 51.1 54.4 57.5		78 16	
Woodglen Vista Drive to El Nopal, Near Term + 50% project + cc 4 Magnolia Avenue	15	12,458	40	0.5	3.0%	3.9%	69	-	90	194 4	418	50 9,680 1,5 0 0	582 1,196 0 0		31 19 0 0	14 0	28 39 0 0				56.1 64.0 51.5 50.8 57.0 58.8 ### #### #### #### #### ####		90 19 0	0 418 0 0
El Nopal to Mast Boulevard, Near Term 4	15	14,291	40	0.5	3.0%	2.0%	68	-	82	176 3	379	50 11,104 1,8		-	55 22	8		3 67.4 76.3 81.2 0.9 66.3					82 17	
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El Nopal to Mast Boulevard, Near Term + Project 4	15			0.5	3.0%	2.0%	69	-				50 13,148 2,1			02 26	10	38 27				54.5 65.0 53.1 52.1 55.5 58.6		91 19	
El Nopal to Mast Boulevard, Near Term + 50% project + construc 4 Magnolia Avenue - MITIGATED	15	16,679	40	0.5	3.0%	3.4%	70	-	105	226 4	486	50 12,960 2,1	118 1,601 0 0		07 <u>25</u> 0 0	16 0	38 46 0 0				66.8 65.2 52.8 52.0 57.7 59.7 ### #### #### #### #### ####		05 22	0 0
Princess Joann Road to Woodglen Vista Drive, Near Term 4	15	2,204	40	0.5	3.0%	2.0%	60	-	-	- 1	109	50 1,713 28		•	39 3	1	5 4				5.7 56.1 44.2 43.2 46.6 49.	-	23 5	-
Princess Joann Road to Woodglen Vista Drive, Near Term + 509 4	15	3,519		0.5	3.0%	2.0%	62	-				50 2,734 4			3 5	2	8 6				7.7 58.2 46.3 45.3 48.7 51.			9 149
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Attachment 6. FHWA Noise Prediction Model Results –
Building Construction Worst-Case Scenario
(Prohibited Southbound Left-Turns from Cuyamaca Street Scenario)



Project Number: 1501144001
Project Name: Fanita Ranch - Restricted Access/Building Construction

Background Information

Heavy-Duty Trucks

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.

Linscott, Law, and Greenspan, September 2020

Ldn: X CNEL: " a content in legated within the reaction right of uncompared to the content of the conten Model Description: Source of Traffic Volumes: Community Noise Descriptor:

 Day
 Evening
 Night

 77.70%
 12.70%
 9.60%

 87.43%
 5.05%
 7.52%

 89.10%
 2.84%
 8.06%
 Assumed 24-Hour Traffic Distribution:
Total ADT Volumes
Medium-Duty Trucks

"-" = contour is located within the roadway right-of-way. Distance is from the centerline of the roadway segment to the receptor location.

Part	- Toury-Buty Huoko	00.	1070 2.047	0.007									Troffin Valuman					Def Francisco Diet Ld	l a	1-	DISTANCE	O CONTOU	ID (2)
Part				Desia	ın	Vehi	icle Mix	D	istance fron	m Centerline	of Roadway		Traffic Volumes					Ref. Energy Leve Dist Ld	Le	Ln	DISTANCE	O CONTOU	₹ (2)
Composition	Analysis Condition	Me	dian ADT										Calc Day Eve Night M	Td HTd	MTe HT	e MTn	HTn	A MT HT Adj A MT HT	Total A MT HT T	otal A MT HT Total 70	Ldn 65 Ldr	60 Ldn	55 Ldn
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