

# McCarran Boulevard Corridor Study

Improving Safety and Mobility, and  
Enhancing Economic Development Opportunities  
Along McCarran Boulevard



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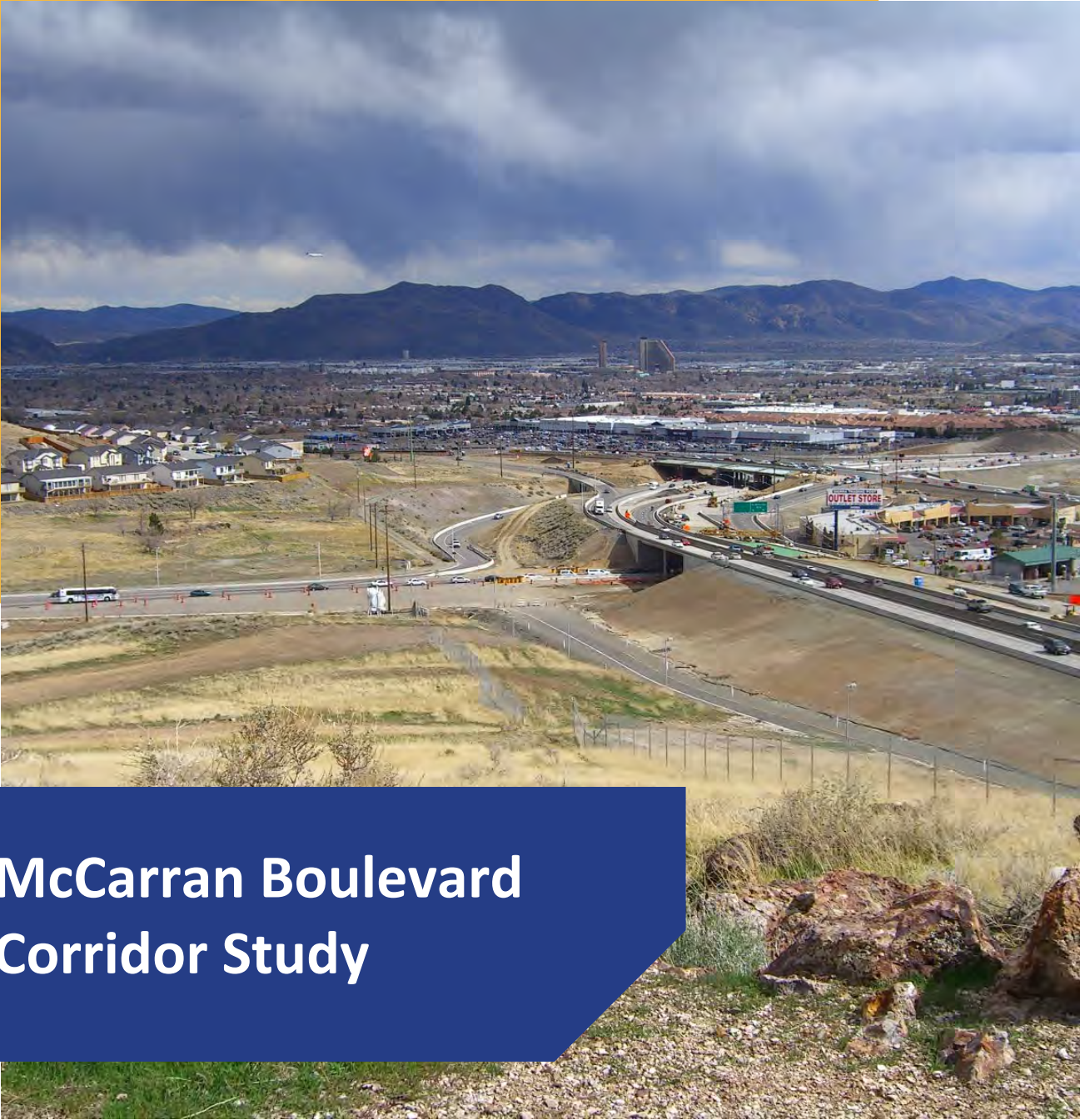
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# Existing Conditions Report

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# McCarran Boulevard Corridor Study

## Existing Conditions Report

March 2022

Prepared by CA Group and Parametrix





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# 1 - INTRODUCTION

## Corridor Overview

McCarran Boulevard is a ring road approximately 23 miles in length that largely encircles the Reno-Sparks urbanized area. Sections of the roadway carry some of the highest traffic volumes in the region, including high percentages of freight traffic. The corridor provides direct access to some of the largest employers in the region and key regional destinations, including the Reno-Tahoe International Airport and the University of Nevada, Reno (UNR). McCarran Boulevard has multiple interchanges with the interstate system and other major highways, such as I-80, I-580, US 395, and Pyramid Highway.

The character of the McCarran Boulevard corridor varies widely throughout the region. Sections of the roadway are highly urbanized, while others are more suburban or rural in nature. The roadway traverses industrial, commercial, and residential land uses, and has varying speed limits, multimodal elements, and traffic patterns throughout. Sections of McCarran Boulevard are also utilized by several transit routes. Due to the varying nature of development that has occurred alongside the corridor over the past several decades, and the piecemeal construction of the roadway itself, McCarran Boulevard is often unable to fulfill its intended function, as a high-capacity ring road or beltway.

Although there have been several localized studies and improvements implemented along sections of McCarran Boulevard in recent years, a comprehensive study of the corridor is needed to help establish a consistent framework for improvements going forward.

## Study Purpose

The intention of this study is to conduct a multimodal analysis for transportation improvements on the McCarran Boulevard loop to identify an overarching vision for future investments, as well as near-term recommendations for enhancing mobility options, improving safety, and addressing economic development efforts within the corridor that could potentially have significant traffic impacts. Recommended improvements will seek to maintain consistency of the roadway character, where feasible and within the context of the varying land use pattern.

Study recommendations will be incorporated into the Nevada Department of Transportation's (NDOT) long-range planning process (One Nevada) and RTC's Regional Transportation Plan (RTP).

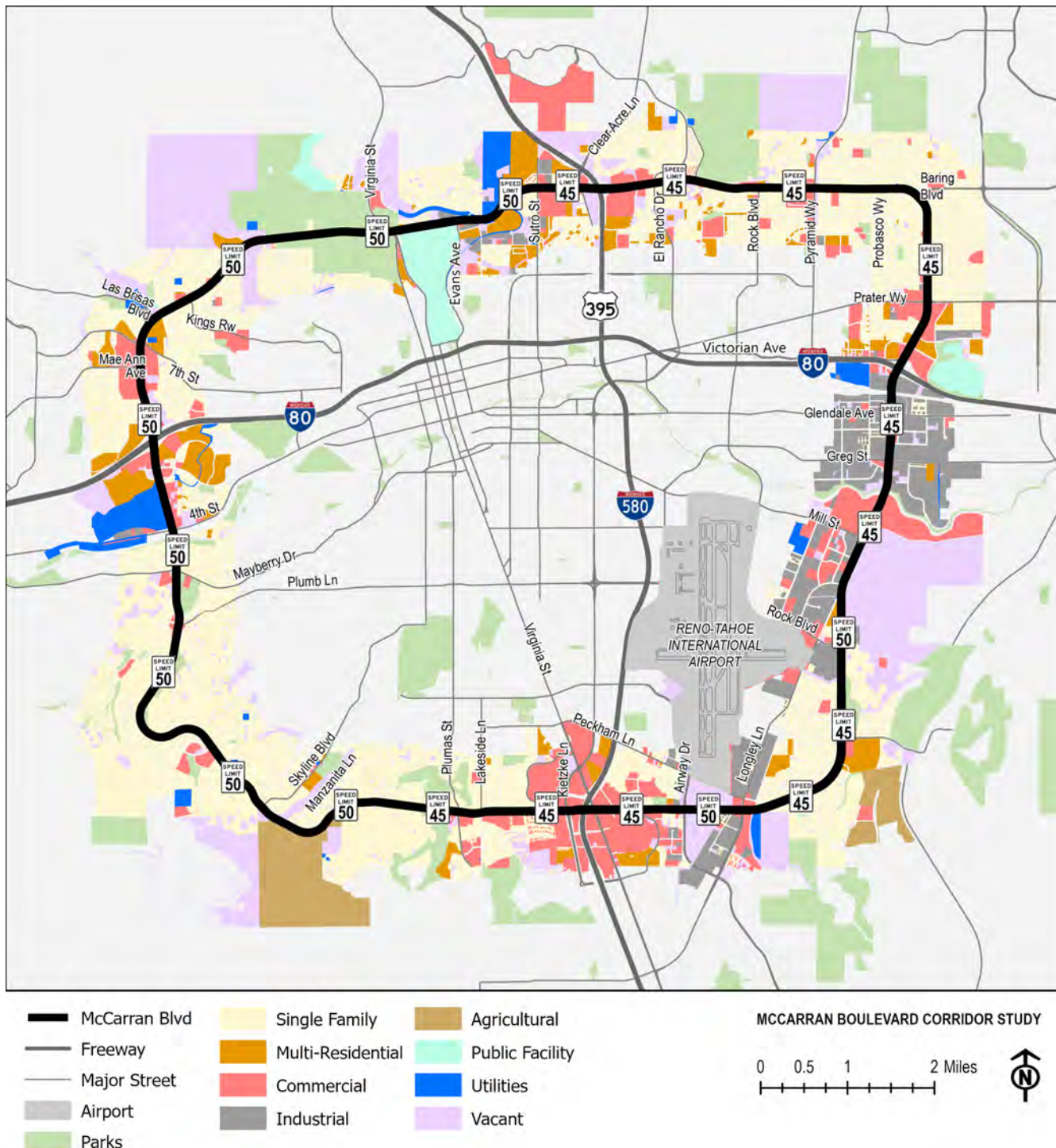
## Report Purpose

This Existing Conditions Report catalogues existing conditions along the corridor and highlights areas needing further assessment. The report addresses existing land use and proposed development along the corridor; planned roadway improvements along and/or impacting the corridor; safety hot spots for pedestrians, bicyclists, and motorists; transit routes running along or crossing the corridor; and areas where non-motorized facilities may be absent or inadequate. The report concludes with a summary of key gaps, issues, and opportunities to be addressed as the study progresses.

## 2 - LAND USE

Although the character of McCarran Boulevard varies widely throughout the region, the predominant land uses along the corridor are Single Family Residential and Commercial, with lower concentrations of Industrial, Multi-Family Residential, Agricultural, Parks, and Vacant land. Figure 1 shows the existing land use in the areas surrounding the corridor.

**Figure 1: Existing Land Use**





## Character Zones

McCarran Boulevard can be divided into four zones based on the types of uses it traverses, including: 1) Residential; 2) Commercial/Freeway Influence Area; 3) Industrial; and 4) Parks and Open Space. Each character zone is described below.

**1) Residential:** Much of the corridor is fronted by Single- or Multi-Family Residential, including a variety of home types, ages, and setbacks. Due to the volumes and speeds of traffic along McCarran Boulevard, homes are typically set back from the road and often include fencing or privacy walls. Thus, there is very little connection between the neighborhoods and the corridor, aside from the residential collectors used for access.



*Image: McCarran Boulevard near Baring Boulevard*

**2) Commercial/Freeway Influence Areas:** There are several sections of Commercial development along the corridor, either in small pockets or longer stretches. Commercial development is often associated with Freeway Influence Areas, such as the one near McCarran Boulevard's southern intersection with Interstate 580, shown below.



*Image: McCarran Boulevard near I-580*

Many of the larger commercial areas generate a significant amount of traffic, acting as local or even regional traffic generators. Commercial areas in Freeway Influence Areas (e.g., on western McCarran Boulevard near I-80) see especially high traffic volumes.

**3) Industrial:** The eastern and southeastern sections of the corridor include higher concentrations of Industrial land uses, as shown in the photo below. Although some stretches include sidewalks – particularly near office parks – other sections are lacking pedestrian facilities.



*Image: McCarran Boulevard near E Greg Street*

**4) Parks and Open Space:** Several stretches of the corridor are bordered by Parks and Open Space, including large regional parks, golf courses, skate parks, and smaller neighborhood pocket parks. Major parks along the corridor include the Rancho San Rafael Regional Park, Wildcreek Golf Course, Rattlesnake Mountain Skate Park, Huffaker Hills, and the Lakeridge Golf Course. Trail connections to more distant park facilities exist as well, specifically along the western portions of the corridor.



*Image: Rancho San Rafael Regional Park*



## Major Traffic Generators

The Reno-Tahoe International Airport is located three miles southeast of downtown Reno, in the southeast quadrant of the McCarran loop. It is the second-busiest commercial airport in Nevada, serving 4.45 million passengers in 2019 before seeing a pandemic-related decline in 2020. The airport is considered a major traffic generator. Airport-related traffic contributes to congestion and safety issues, particularly where McCarran Boulevard intersects with Longley Lane and Rock Boulevard.



*Image: Reno-Tahoe International Airport*

The University of Nevada, Reno (UNR) is located just north of downtown Reno, in the northwestern quadrant of the McCarran loop. The university is home to 21,000 students and over 10,000 faculty and staff. The university is considered a major traffic generator. The higher prevalence of pedestrians and bicyclists near the university contributes to a greater concentration of pedestrian and bicycle-related crashes, particularly near Virginia Street and Evans Avenue. The UNR Campus Master Plan Update and University Regional Center Plan (2015) outlines plans for future expansion to the east, west, and south. There are currently no plans to expand beyond McCarran Boulevard, the university's northern border.



*Image credit: Creative Commons (University of Nevada, Reno)*



## Future Land Use

There are a number of vacant parcels of varying sizes along McCarran Boulevard. Understanding when and how these parcels are likely to change over time is an important component of planning for the corridor's future. The largest vacant parcels include:

**The area directly east of McCarran Boulevard, south of Cottonwood Park.** The westernmost portion of this area is zoned as Planned Development (PD); however, the majority of the area is not zoned (NZ). The DP UNR Farms Industrial Park is planned for the area zoned PD, just east of McCarran Boulevard and Mill Street, as shown in the image below. The development includes 1.35 million square feet of warehousing space and 400,000 square feet of retail space. There is also a 22,000 square foot outdoor storage area proposed on this site. This site is currently under construction.



Source: DP UNR Farms Industrial Park Traffic Impact Study

**The area to the south of the Reno-Tahoe International Airport, just north and south of McCarran Boulevard.** These parcels are zoned Mixed-Use Airport (MA). The parcels southwest of the Airport along Airway Drive are identified for future air cargo development in the 2018 Reno-Tahoe International Airport Master Plan. In 2022, the Airport Authority conducted a public Request for Proposal process to identify a third-party developer to construct air cargo facilities. The parcels north of McCarran Boulevard are restricted for airport infrastructure, such as navigational aids. The parcels south of McCarran Boulevard are identified for airport-compatible non-aeronautical development in the 2018 Reno-Tahoe International Airport Master Plan. The Airport Authority has secured a third-party developer to construct an industrial/commercial development on the site.

**An area in the northwest quadrant of McCarran Boulevard, to the west of existing parks and open space land.** Although much of the vacant area is not currently zoned (NZ), a 342-unit apartment complex has been proposed near the intersection of McCarran Boulevard and Keystone Avenue/Leadership Parkway, northwest of McCarran Boulevard. The Reno Cyclery project is also proposed in this area, on the southeast side of McCarran Boulevard. The project would include a bike shop, two mixed-use buildings, and a 3-acre outdoor recreation space. Approximately 31,000 square feet of building space is proposed.

There are also smaller vacant parcels scattered throughout the study area, especially along the northern section of McCarran Boulevard. These parcels are mainly zoned General Commercial or higher-density Single Family Residential (8-11 dwelling units per acre). One such parcel includes a proposed Washoe County School District Project located northeast of McCarran Boulevard and US 395.

As these areas continue to fill in with development, traffic volumes are likely to continue increasing, which could exacerbate congestion and safety hot spots. The corridor's Freeway Influence Areas are of particular concern due to the relatively high number of fatalities and pedestrian and bicycle crashes already experienced in these zones.

See Figure 8: Issues and Opportunities Map for a visual depiction of some of the larger planned developments along the corridor.

### 3 - PLANNED ROADWAY IMPROVEMENTS

Figure 2 and Table 1 highlight improvements planned along McCarran Boulevard and intersecting roadways identified in the 2050 RTP. Projects have been classified as bicycle, pedestrian, multimodal, roadway widening, safety/operations, or freeway.

**Figure 2: Planned Roadway Improvements**

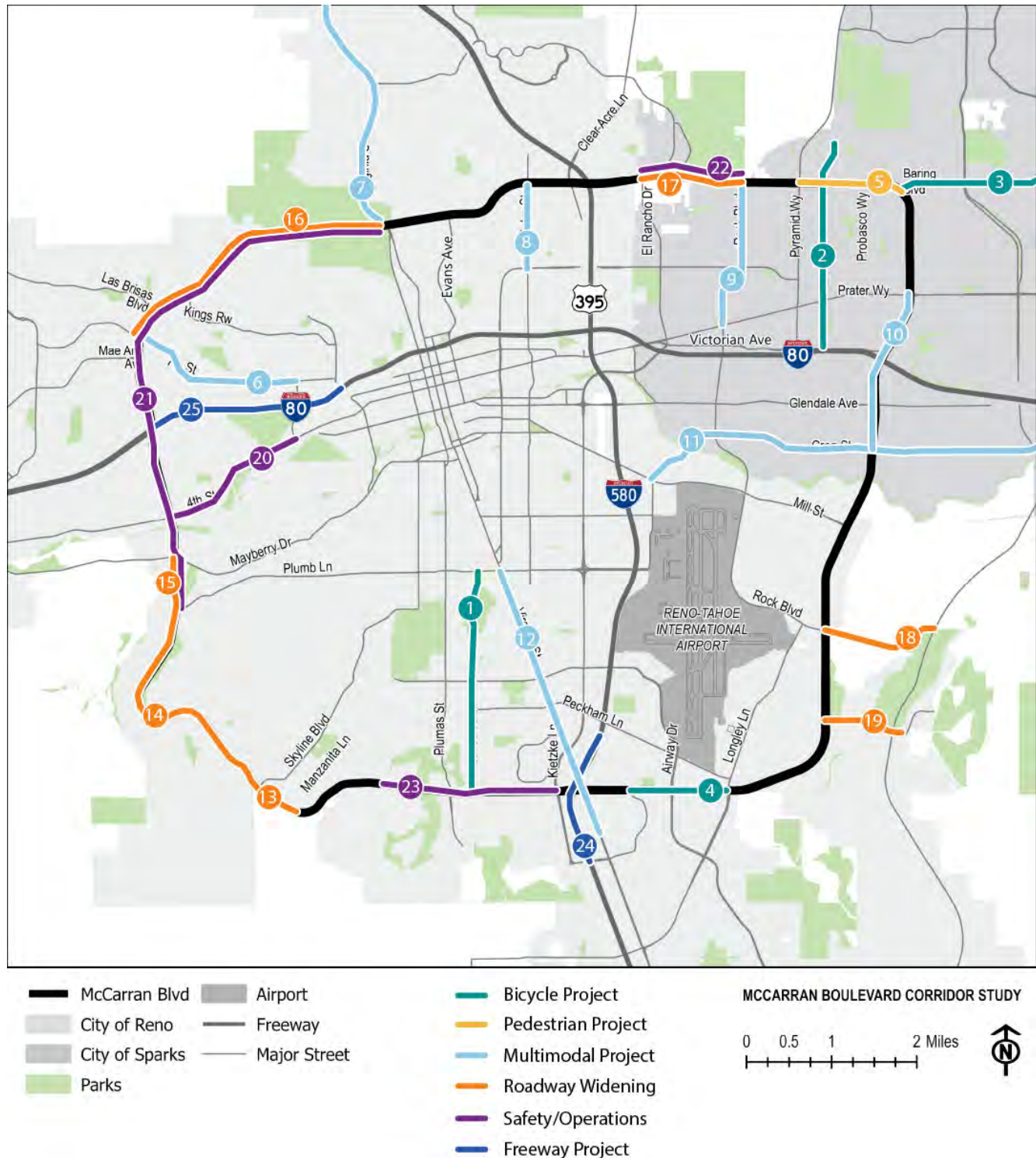




Table 1: Planned Roadway Improvements

Project #	Category	Description	Extent	Phase
1	Bicycle Project	Lakeside Drive Bike Lanes	McCarran Blvd to Plumb Ln	2050
2	Bicycle Project	4th Street Bike lanes (Sparks)	Victorian Ave to Queen Way	2030
3	Bicycle Project	Baring Boulevard Bike Lanes	McCarran Blvd to Vista Blvd	2050
4	Bicycle Project	SE McCarran MultiUse Path	Longley Ln to Neil Rd	2050
5	Pedestrian Project	McCarran Pedestrian Improvements	Baring to Pyramid	2030
6	Multimodal Project	7th Street - Bike Lanes	Stoker Ave to N McCarran	2050
7	Multimodal Project	N Virginia St Sidewalks and bike lanes	Panther Dr to McCarran Blvd	2030
8	Multimodal Project	Sutro - MultiModal	N McCarran to Plumb Ln	2030
9	Multimodal Project	Rock Blvd Enhanced Sidewalks and Bike Lanes	Prater Way to McCarran Blvd	2030
10	Multimodal Project	McCarran Boulevard Sidewalks and Bike Lanes	Greg St to Prater Way	2030
11	Multimodal Project	Greg St Sidewalks and Bike lanes	Mill Street to Vista Blvd	2030
12	Multimodal Project	S. Virginia St	Plumb Lane to Meadowood	2025
13	Roadway Widening	S. McCarran - Widen	Lakeside to Manzanita	2050
14	Roadway Widening	S. McCarran - Widen	Plumb to Manzanita	2050
15	Roadway Widening	S. McCarran - Widen	Mayberry to Plum	2050
16	Roadway Widening	McCarran Boulevard Widen 4 to 6 lanes	7th St to N Virginia St	2050
17	Roadway Widening	McCarran Boulevard Widen 4 to 6 lanes	El Rancho Dr to Rock Blvd	2050
18	Roadway Widening	Pembroke Dr - Widen	McCarran to Veterans	2030
19	Roadway Widening	Mira Loma Drive Widen 2 to 4 lanes	McCarran Blvd to SouthEast Connector	2050
20	Safety/Operations	4th Street Pedestrian and Safety Improvements	Stoker to McCarran	2030
21	Safety/Operations	NW McCarran Safety and Bike Lanes	4th Street to N Virginia	2030
22	Safety/Operations	McCarran Blvd Safety & Operational Improvement	Plumb Ln to W 4th St; El Rancho Dr to Rock Blvd	2030
23	Safety/Operations	McCarran Blvd Intersection & Operations	Keitzke to Greensboro	2025
24	Freeway Project	I-580 Widening	Neil Rd to S Virginia St/Kietzke Ln	2050
25	Freeway Project	I-80 Widening	W McCarran Blvd to Keystone Ave	2050

Some of the projects included in the RTP help fill needs identified as part of this Existing Conditions Report.

Projects 18 and 19 (widening of Pembroke Drive and Mira Loma Drive) will provide additional roadway capacity in the vicinity of Veterans Parkway and enhance connectivity between McCarran Boulevard and Veterans Parkway.

Projects 17 and 22 (roadway widening and safety and operational improvements along McCarran Boulevard between El Rancho Drive and Rock Boulevard) will improve safety and efficiency in the vicinity of Wildcreek High School, which is currently under construction.

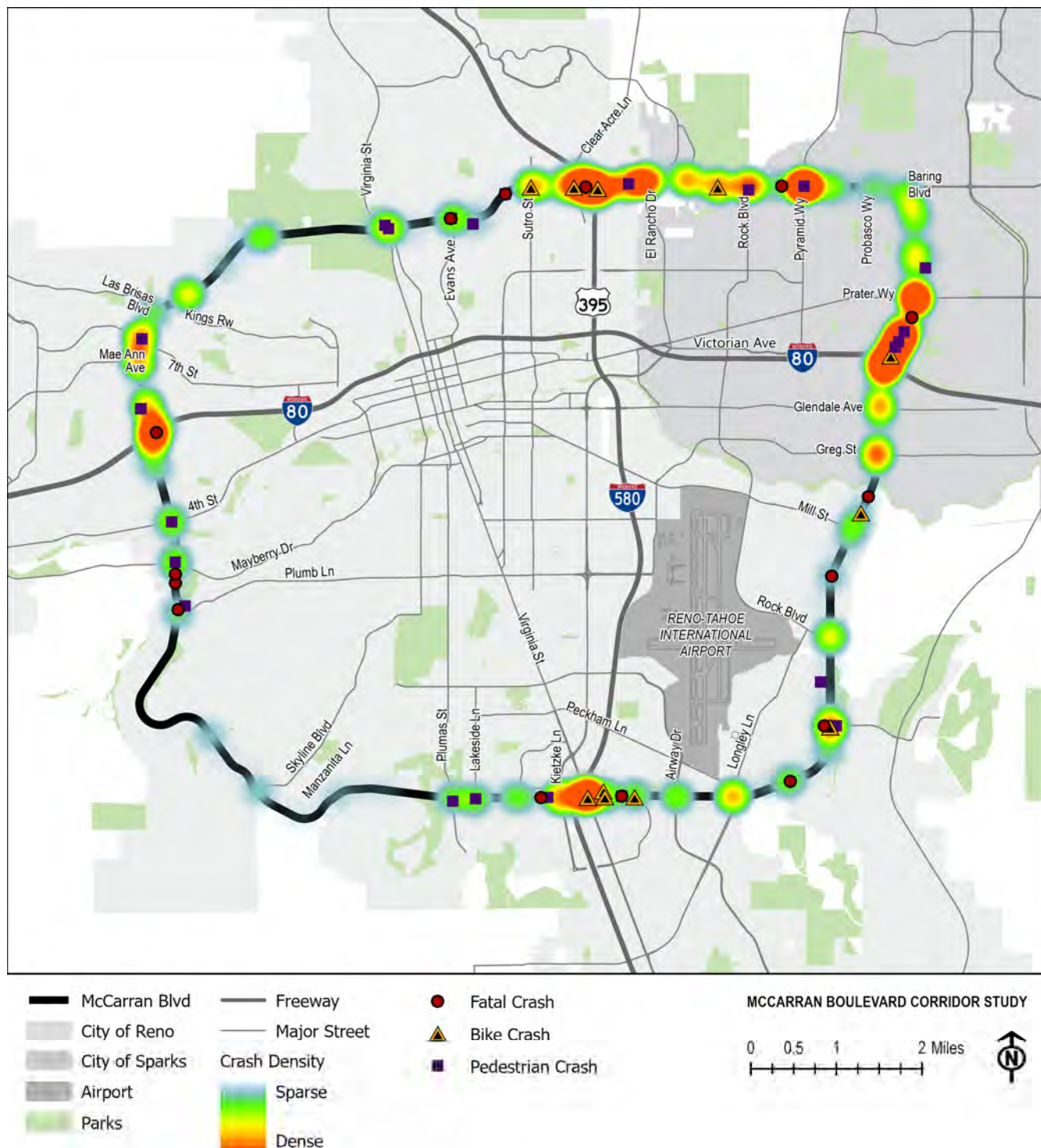
Project 23 (intersection and operations improvements along McCarran Boulevard between Keitzke and Greensboro) will help accommodate increased traffic expected from the proposed Lakeside Development.

Additional analysis and consideration throughout the course of this study will determine whether the implementation timeframe of any of these projects should be reconsidered.

## 4 - SAFETY

The majority of crashes of all types and levels of severity are concentrated in a few areas along the corridor, most notably in the northeast quadrant, as shown in Figure 3 below. As expected, areas with higher traffic volumes, a greater number of access points, and more intense development have higher crash rates.

**Figure 3: Safety**



## Safety Overview

Based on crash data collected between January 1, 2015 and January 01, 2020, overall crash rates along McCarran Boulevard are lower than those of similar roadways in Nevada. However, the corridor still experienced 13 fatal crashes (including 14 fatalities) within this 5-year period. Two of these fatalities involved pedestrians. Table 2 below summarizes the crash characteristics of the 34-mile corridor within the 5-year data period.

**Table 2: McCarran Boulevard Crash Analysis**

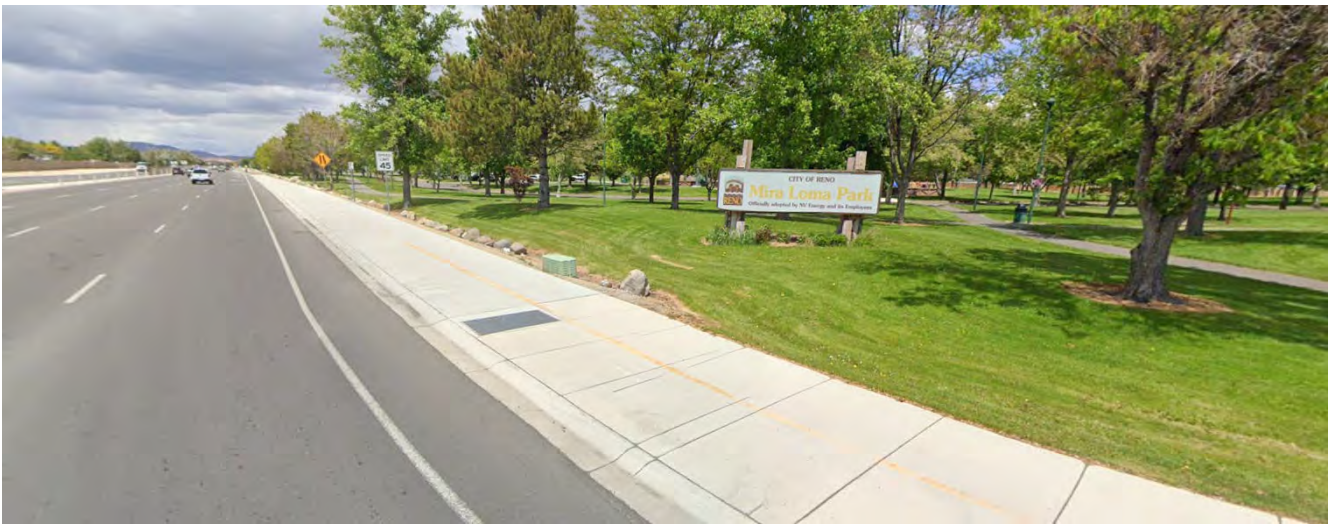
<b>Overall Crashes</b>	<ul style="list-style-type: none"> <li>2,809 total crashes               <ul style="list-style-type: none"> <li>13 fatal crashes with 14 fatalities</li> <li>36 disabling injury crashes with 58 disabling injuries</li> <li>1,213 injury crashes with 1,726 injuries</li> </ul> </li> </ul>			
<b>Crash Rates</b>	<b>McCarran Boulevard</b>		<b>NDOT Principal Arterials</b> (similar roadways in Nevada)	
	Total Crash Rate	2.3970	Total Crash Rate	3.2705
	Fatal Crash Rate	0.0119	Fatal Crash Rate	0.0203
	Injury Crash Rate	1.0351	Injury Crash Rate	1.4953
	PDO Crash Rate	1.3508	PDO Crash Rate	1.7556
	Disabling Injury (A) Rate	4.9493	Disabling Injury (A) Rate	6.1673
<b>Predominant Crash Types</b>	<ul style="list-style-type: none"> <li>1,426 rear-end crashes – 1 fatal crash with 1 fatality</li> <li>751 angle crashes – 2 fatal crashes with 2 fatalities</li> <li>275 sideswipe same direction crashes</li> <li>274 non-collision crashes – 7 fatal crashes with 7 fatalities (2 pedestrian)</li> <li>20 head-on crashes – 3 fatal crashes with 4 fatalities</li> </ul>			
<b>Pedestrian Crashes</b>	<ul style="list-style-type: none"> <li>30 crashes involving pedestrians – 2 fatal crashes with 2 fatalities</li> </ul>			
<b>Bicycle Crashes</b>	<ul style="list-style-type: none"> <li>24 crashes involving bicycles</li> </ul>			
<b>Bus Crashes</b>	<ul style="list-style-type: none"> <li>10 crashes involving buses</li> </ul>			
<b>Motorcycle Crashes</b>	<ul style="list-style-type: none"> <li>62 motorcycle crashes – 2 fatal crashes with 2 fatalities</li> <li>5 moped crashes</li> <li>2 motor scooter crashes</li> </ul>			
<b>Weather Conditions</b>	<ul style="list-style-type: none"> <li>1,878 clear – 11 fatal crashes with 12 fatalities</li> <li>509 cloudy – 1 fatal crash with 1 fatality</li> <li>205 unknown</li> <li>91 rain – 1 fatal crash with 1 fatality</li> <li>85 blowing snow</li> <li>24 snow</li> <li>14 fog, smog, or smoke</li> <li>3 severe crosswind</li> </ul>			
<b>Lighting Conditions</b>	<ul style="list-style-type: none"> <li>1,698 daylight crashes – 6 fatal crashes with 7 fatalities</li> <li>405 unknown conditions</li> <li>367 dark-spot lighting – 2 fatal crashes with 2 fatalities</li> <li>120 dark-continuous lighting – 1 fatal crash with 1 fatality</li> <li>78 at dusk</li> <li>77 dark-no lighting – 4 fatal crashes with 4 fatalities</li> <li>33 dark-unknown lighting</li> <li>31 at dawn</li> </ul>			



## Higher Crash Areas

Freeway Influence Areas have a higher prevalence of all crash types, largely correlated to the increased volumes seen in these locations. The highest traffic volumes along the corridor are seen where McCarran Boulevard intersects with US 395, I-80 (west side), and I-80 (east side). These three areas, along with McCarran/I-580, are among the highest crash rate areas along the corridor.

In addition to the Freeway Influence Areas, higher concentrations of pedestrian and bicycle crashes are also seen where McCarran Boulevard intersects with Mira Loma Drive and N Virginia Street. There is a park, skate park, shopping center, and several apartment complexes located near Mira Loma Drive, which likely contributes to the higher pedestrian and bicycle traffic and incidence of crashes. Mira Loma Drive also serves as an important connector between S McCarran Boulevard and Veterans Parkway and has relatively high traffic volumes for its configuration.



*Image: Mira Loma Park near Mira Loma Drive*

N Virginia Street is on the eastern border of the Rancho San Rafael Regional Park, which is a major attractor for pedestrians and bicyclists, due to its popular and expansive trail network. The park also includes a disc golf course, softball complex, and dog park, making it a regional draw.



*Image: McCarran Boulevard and N Virginia Street intersection*

One of the highest crash locations during the data collection period is the Pyramid Highway and McCarran Boulevard intersection. During this 5-year period, the intersection of McCarran Boulevard and Pyramid Highway was under construction. A before and after evaluation at this intersection, with two years before and two years after construction (2016-2017 and 2018-2019), was conducted. The results of this analysis showed the total number of crashes were reduced from 83 crashes (55 property damage only and 28 injury) to 56 crashes (40 property damage only and 16 injury). During this time period there were also reductions rear-end, sideswipe same direction, and angle crashes.

## 5 - TRAFFIC OPERATIONS ANALYSIS

An analysis was performed of existing traffic conditions and operations during the morning and afternoon (AM and PM) peak periods during 2021. The traffic operations analysis followed the methodologies outlined in the Highway Capacity Manual (6<sup>th</sup> Edition), which is considered industry best practice. The traffic analysis was performed for 19 intersections selected by the project team.

Traffic volumes were collected from the field in addition to some counts provided by RTC Washoe. Geometry and other data needed for modeling were used from existing topography/mapping, field visits, and online resources such as Google Maps/Bing Maps. Traffic signal timing information was requested from the Cities of Reno and Sparks and coordinated with RTC Washoe.

Table 3 shows the intersection delay and level of service (LOS) for 2021 existing conditions. Most of the intersections operate at LOS D or better, which is desirable. However, a few intersections operate at LOS E, which is considered at capacity, either during AM or PM peak hour. The intersection of McCarran Boulevard and Cashill Boulevard operate at LOS F during AM peak hour. Overall, majority of the intersections along McCarran Boulevard operate at an acceptable LOS for the existing year analysis.

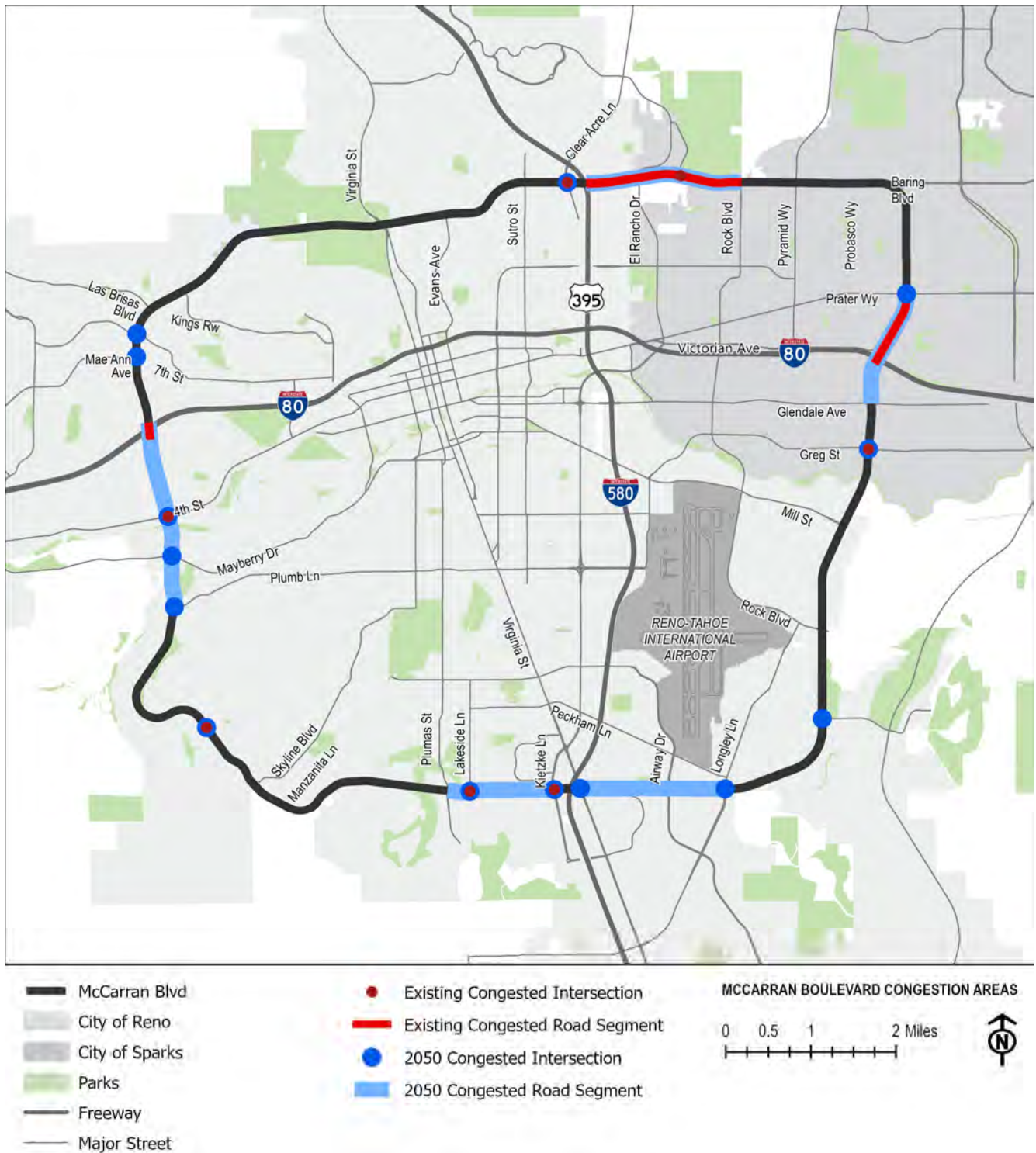
**Table 3: Level of Service and Delay (2021)**

Analyzed Intersection	AM	PM
McCarran Blvd/El Rancho Dr	47.3 (D)	51.7 (D)
McCarran Blvd/Sullivan Ln	<b>63.5 (E)</b>	29.3 (C)
McCarran Blvd/N. Rock Blvd	42.9 (D)	24.4 (C)
McCarran Blvd/Prater Wy	54.2 (D)	52.3 (D)
McCarran Blvd/Nichols Blvd	46.4 (D)	37.8 (D)
McCarran Blvd/Greg St	54.5 (D)	<b>56.1 (E)</b>
McCarran Blvd/Mira Loma Dr	44.9 (D)	38.7 (D)
McCarran Blvd/Longley Ln	49.2 (D)	54.7 (D)
McCarran Blvd/S. Virginia St	48.5 (D)	51.3 (D)
McCarran Blvd/Kietzke Ln	43.2 (D)	<b>61.4 (E)</b>
McCarran Blvd/Lakeside Dr	36.9 (D)	<b>58.7 (E)</b>
McCarran Blvd/Plumas St	29.4 (C)	28.9 (C)
McCarran Blvd/Cashill Blvd	<b>110.4 (F)</b>	38.3 (D)
McCarran Blvd/Plumb Ln/Caughlin Pkwy	50.9 (D)	42.4 (D)
McCarran Blvd/Mayberry Dr	37.4 (D)	48.6 (D)
McCarran Blvd/W. 4th St	<b>60.6 (E)</b>	38.8 (D)
McCarran Blvd/Mae Anne Ave	42.9 (D)	53.7 (D)
McCarran Blvd/W. 7th St	44.5 (D)	44.9 (D)
McCarran Blvd/Clear Acre Ln	<b>57.2 (E)</b>	46.6 (D)



Figure 4 below highlights some of the more congested areas along the corridor, both today and in 2050. The most congested areas are generally in the vicinity of McCarran Boulevard's intersections with freeways and highways, including I-80, I-580, and US 395.

**Figure 4: Existing and Future Congested Areas**





## 6 - FREIGHT

The Nevada State Freight Plan (NSFP) defines Nevada's Highway Freight Network, which is a combination of the National Highway Freight Network (NHFN) and additional important freight corridors in Nevada. The NHFN includes Primary Highway Freight System (PHFS), other Interstate portions not on the PHFS, and Critical Rural/Urban Freight Corridors (CRFC/CUFC) defined by State Departments of Transportation and Metropolitan Planning Organizations. Each state can classify a limited distance of CRFC and CUFC for funding opportunities. Only projects on the NHFN are eligible for funding from the National Highway Freight Program (NHFP) and freight-related discretionary grant programs, e.g., Fostering Advancements in Shipping and Transportation for the Long-Term Achievement of National Efficiencies (FASTLANE).

In addition to National Highway Freight Network, the Nevada State Freight Plan defines other important freight corridors for statewide planning and prioritization purposes. The section of McCarran Boulevard between Longley Lane and Glendale Avenue is part of the NHFN (designated as CUFC) and is eligible for federal freight funding programs. Other sections of McCarran Boulevard are not part of the NHFN but NSFP defines them as additional freight corridors important to Nevada.

Many factors influence the impact freight has on roadway operations. The weight and size of trucks alone is influential. A 70-foot semi-truck is equivalent to approximately 4-5 car lengths, thus taking up more road space and causing more delays than a single car. The weight of a large truck can be 20 times the weight of a car, causing exponentially more wear and tear on the roadway – especially as local roads are often not designed for the impact of 80,000-pound trucks.

The percentage of heavy truck traffic along much of McCarran Boulevard is relatively moderate for an urban area, as shown in Table 4. However, two segments have higher values: between I-580 (south McCarran) and Longley Lane (6.4 percent) and between Longley Lane and I-80 (east McCarran) (4.8 percent). Some of the higher-crash locations along the corridor are located in these segments.

There is a large truck stop located at East McCarran Boulevard and I-80. This stop contributes to the high percentage of truck traffic in the area and can also experience parking capacity issues during I-80 closures.

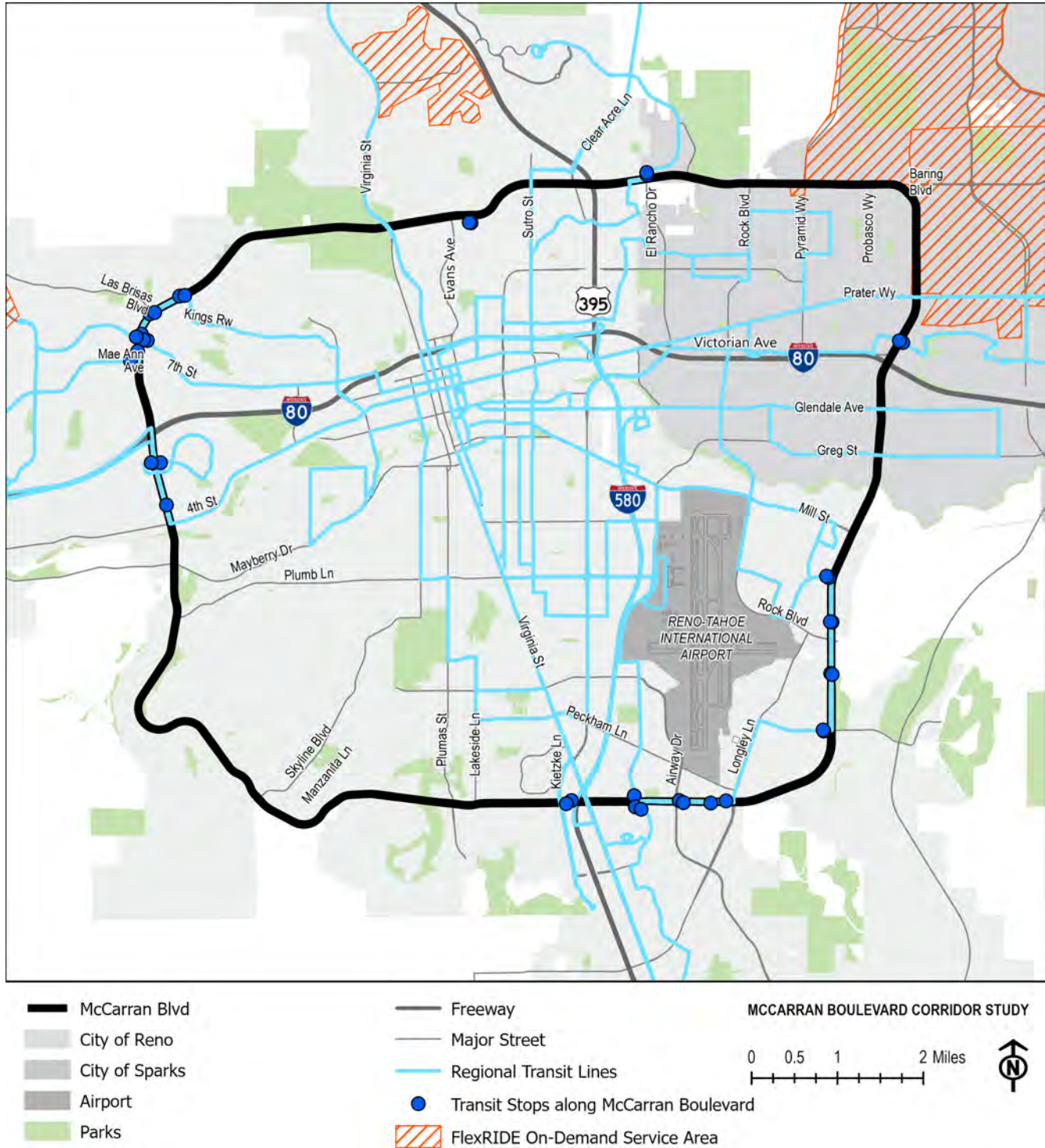
**Table 4: Percent Truck Traffic along McCarran Boulevard**

Route	Segment Description		AADT	Trucks		Total Trucks	Total Truck %
	From	To		Light	Heavy		
SR 659	I-580/ US 395	N. Virginia St.	25,850	297	59	356	1.4%
SR 659	N. Virginia St.	US 395	21,450	297	59	356	1.7%
SR 659	US 395	Pyramid Way	39,000	333	307	640	1.6%
SR 659	Pyramid Way	Prater Way	17,100	288	107	395	2.3%
SR 659	I-80	Longley Ln	21,200	517	491	1,008	4.8%
SR 659	Longley Ln	I-580	20,900	1,040	300	1,340	6.4%

## 7 - TRANSIT

There are a number of places where transit routes cross or briefly run along McCarran Boulevard, as shown in Figure 5 below and described in the following sections.

**Figure 5: McCarran Boulevard Transit**





RTC operates a total of 13 routes that either cross (10) or run along (3) McCarran Boulevard for a short distance. These routes typically have at least one stop along McCarran Boulevard, especially in areas with higher concentrations of jobs or services. Walkability to existing transit stops is an important consideration that will be considered further in future phases of study.

### Routes Crossing McCarran Boulevard

- **Route 9** (Kietzke) runs primarily north-south between the RTC Centennial Plaza and Carrington College, crossing McCarran Boulevard just west of Interstate 580. The route runs mostly along Kietzke Lane, with deviations to reach key stop locations.
- The **RAPID Virginia** line runs primarily north-south between the University of Nevada Reno and the Meadowood Mall, crossing McCarran Boulevard just east of Interstate 580. The route runs mostly along Virginia Street.
- **Route 1** (South Virginia) runs primarily north-south between the RTC 4<sup>th</sup> Street Station and the Meadowood Mall, crossing McCarran Boulevard just east of Interstate 580.
- **Route 12** (Terminal/Neil) runs primarily north-south between the RTC 4<sup>th</sup> Street Station and the Meadowood Mall, following Terminal Way and Neil Road. The route crosses McCarran Boulevard at Neil Road.
- **Route 18** (Glendale/Greg) runs primarily east-west between the RTC 4<sup>th</sup> Street Station and an industrial area located between Glendale Avenue and Greg Street. The route crosses McCarran Boulevard in two locations – at Glendale Avenue and Greg Street.
- **Route 21** (Sparks Marina) runs primarily east-west between the RTC Centennial Plaza and the Sparks Police Station. The route crosses McCarran Boulevard at Nichols Boulevard before heading into the Western Village/Marina area.
- **Route 26** (East Prater) runs primarily east-west between the RTC Centennial Plaza and the Northern Nevada Medical Center. The route crosses McCarran Boulevard at Prater Way.
- **Route 5** (Sutro/Sun Valley) connects several destinations in Sun Valley to the RTC 4<sup>th</sup> Street Station. The route crosses McCarran Boulevard at Clear Acre Lane.
- **Route 7** (Stead) runs primarily north-south between Stead and the RTC 4<sup>th</sup> Street Station in Downtown Reno. The route crosses McCarran Boulevard at Virginia Street.
- **Route 4** (West Seventh) runs primarily east-east, connecting the Bilinghurst Middle School (to the west) with the RTC 4<sup>th</sup> Street Station (to the east). The route crosses McCarran Boulevard at 7<sup>th</sup> Street.

### Routes Running along McCarran Boulevard

- **Route 54** (Sparks/Meadowood) runs primarily north-south between the RTC Centennial Plaza and the Meadowood Mall, on the east side of the Reno-Tahoe International Airport. The route briefly runs along McCarran Boulevard in two locations: between Boynton Lane and Longley Lane, and between Capital Boulevard and Mira Loma Drive.
- **Route 3** runs along a loop connecting the RTC 4<sup>th</sup> Street Station with a number of destinations to the west. The route crosses McCarran Boulevard in two locations: between Kings Row and Mae Anne Avenue, and between Interstate 80 and W 4<sup>th</sup> Street/647.

- **Route 15** (Sutro/Wedekind/TMCC) connects the Truckee Meadows Community College with destinations to the south, terminating at the RTC 4<sup>th</sup> Street Station. The route briefly runs along McCarran Boulevard between El Rancho Drive and Northtowne Lane.

## RTC FlexRIDE

In addition to the fixed routes described above, RTC operates an on-demand transit service called FlexRIDE. There are several designated FlexRIDE zones throughout the RTC planning area, but the one adjacent to the study area extends north from McCarran Boulevard to Spanish Springs, and southeast into Sparks, serving key shopping, civic, and senior destinations. The app-based service operates on a curb-to-curb basis, providing a flexible transit alternative for areas that may not be suitable or ready for fixed-route transit. Similar models may be appropriate for other portions of the study area with non-traditional transit needs.



*Image: FlexRIDE vehicle stopped for passengers*



## 8 - NON-MOTORIZED FACILITIES

Bicycle facilities are present along the majority of the McCarran Boulevard corridor, typically in the form of a dedicated bike lane or shared use path. Pedestrian facilities are present along about two-thirds the corridor, when both sides of the street are considered.

### Bicycle Facilities

Bicycle facilities are present along most of McCarran Boulevard, either in the form of bike lanes or a shared use path, as shown in Figure 6. Bike lanes are the predominant facility type, covering the majority of the corridor.



*Image: Bike lanes along southeastern McCarran Boulevard*

A shared use path is present along a 3.5-mile stretch of southeastern McCarran Boulevard, in lieu of bike lanes. This pathway serves primarily as a bicycle facility but can also accommodate pedestrians.



*Image: shared use path along southeastern McCarran Boulevard*

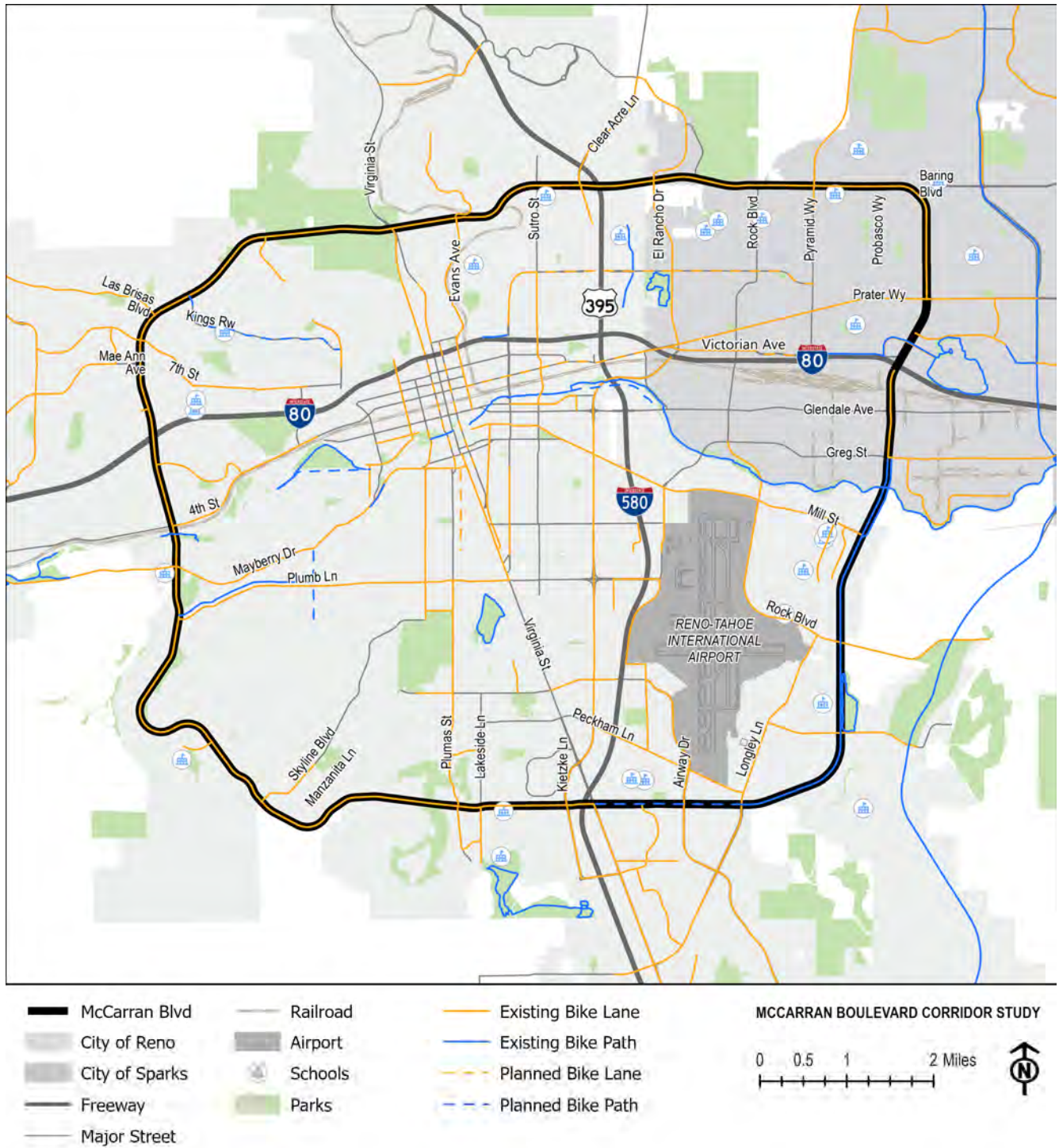


There is one notable gap in the bicycle facility network on the eastern side of McCarran Boulevard just north of I-80. This section of the corridor has relatively high traffic volumes and frequent access points to businesses. These conditions make bicycling especially dangerous, especially without a dedicated facility such as a bike lane or shared use path. However, there is a project proposed in the RTP to add bicycle facilities and sidewalks to the stretch of McCarran Boulevard between Greg Street and Prater Way, which should complete this missing link.



*Image: Missing bike lanes along eastern McCarran Boulevard*

Figure 6: Bicycle Facilities





## Pedestrian Facilities

Sidewalks are present along about two-thirds of McCarran Boulevard, when both sides of the street are considered (see Figure 7). The level of accommodation and comfort provided for pedestrians varies widely along the corridor. Some sections include relatively narrow, attached sidewalks with no amenities, while others include wider, detached sidewalks with planter strips, trees, and a variety of amenities.



*Image: Attached sidewalks along W McCarran Boulevard*

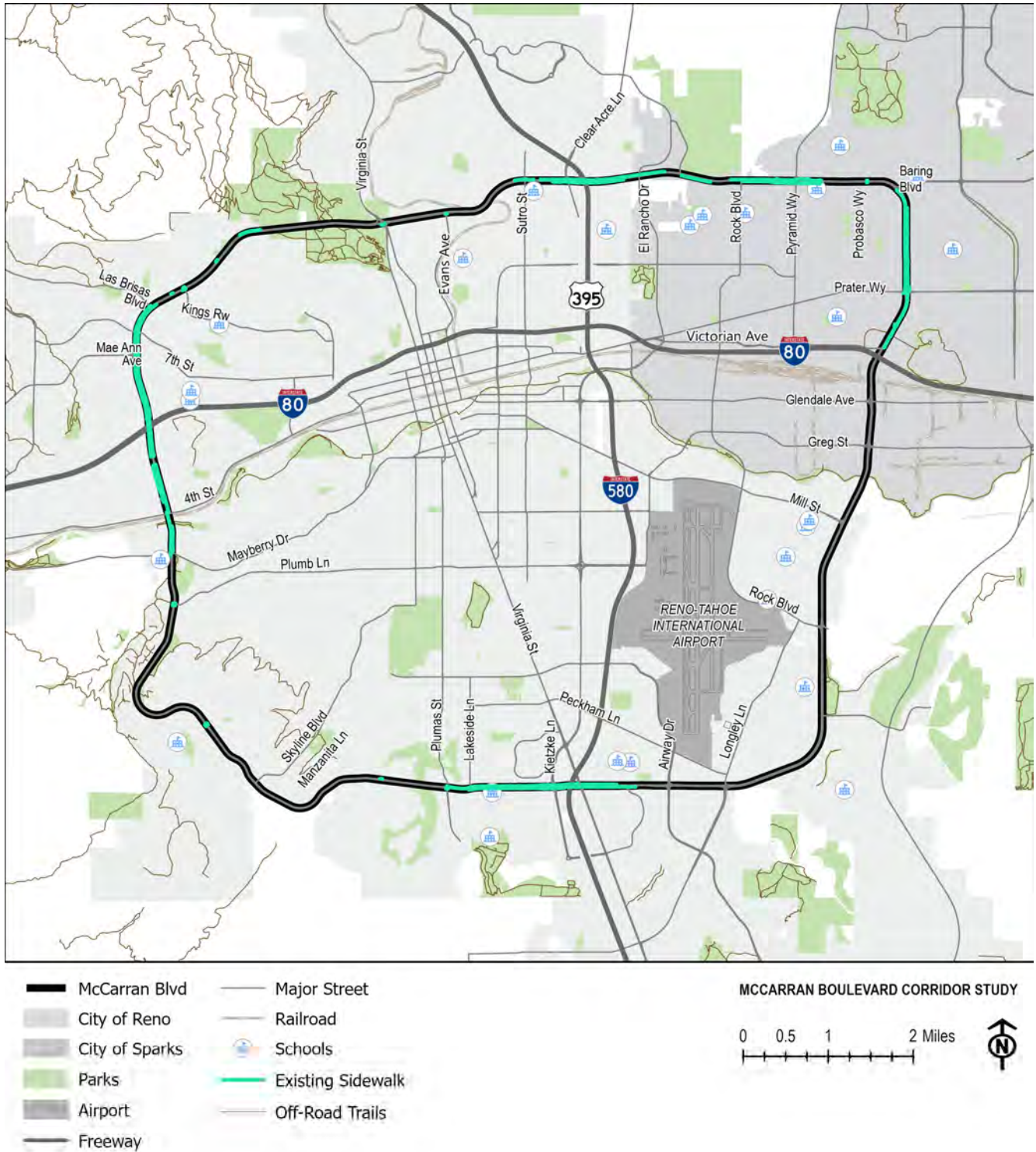


*Image: Detached sidewalks with lighting along northeastern McCarran Boulevard*

A shared use path is present along a 3.5-mile stretch of southeastern McCarran Boulevard. In some instances, this path is provided in lieu of a sidewalk, while other locations include both the side path and a sidewalk.



Figure 7: Pedestrian Facilities



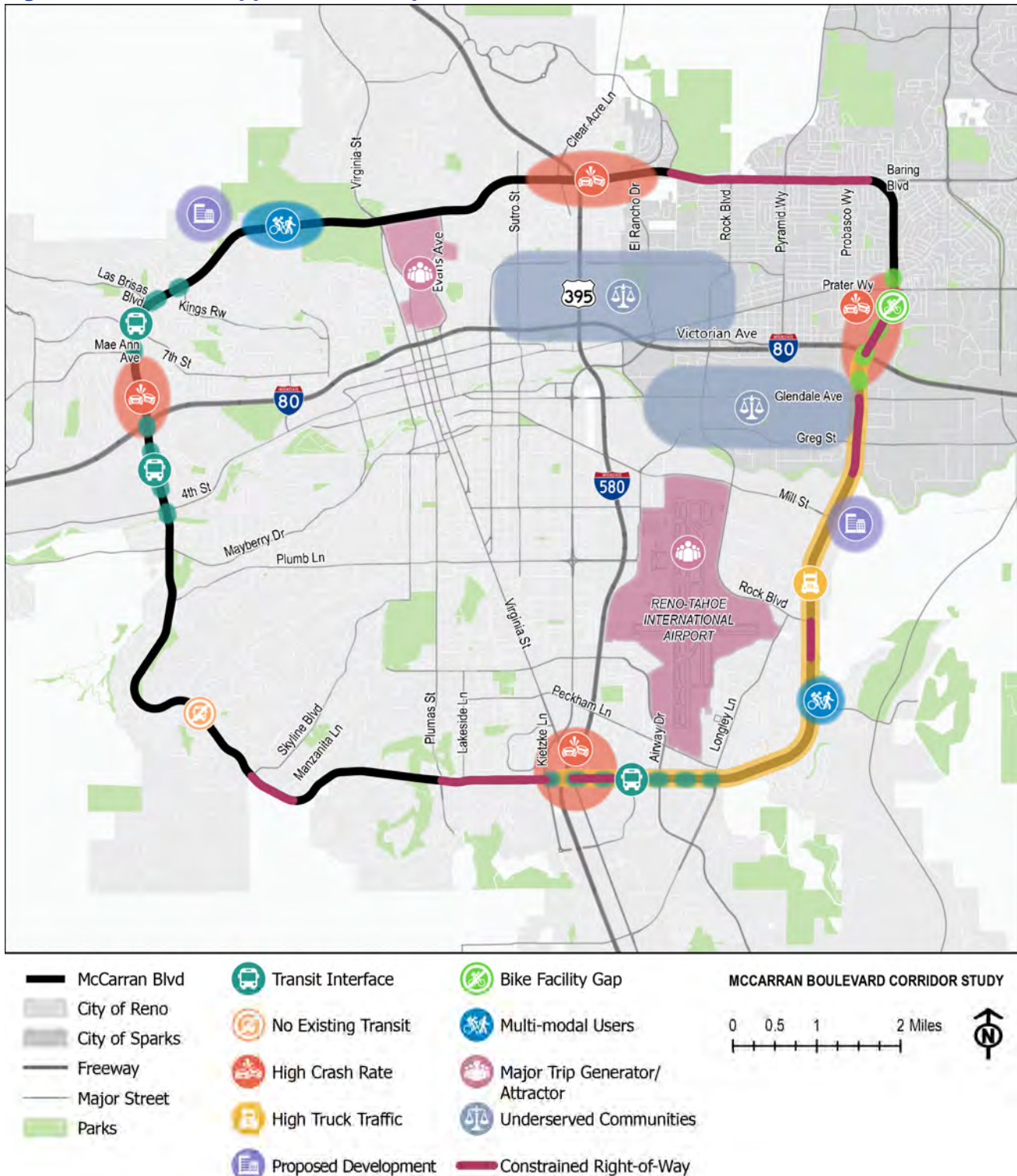
Later in the study, the appropriateness of the pedestrian and bicycle facilities throughout the corridor will be evaluated against the expected and/or desired characteristics of the zones described in Section 2. This evaluation will consider the types of land uses and destinations where people are most likely to walk or bicycle.

Combined with this review of existing facilities, the evaluation will help prioritize resources to make infrastructure improvements in areas with walkable and bikeable land use patterns; areas with pedestrian and bicycle safety concerns; in underserved communities; and in areas with low rates of car ownership. Recommendations will focus on the comfort and safety of pedestrians and bicyclists rather than just the presence or absence of facilities.

## 9 - ISSUES AND OPPORTUNITIES

Figures 8 and 9 combine the issues and opportunities discovered as part of this existing conditions inventory into a single map and infographic, to be used as a framework for public/stakeholder engagement. These graphics summarize the major considerations that may influence the development of a corridor vision and subsequent improvement alternatives to meet this vision.

**Figure 8: Issues and Opportunities Map**





**Figure 9: Issues and Opportunities Infographic**



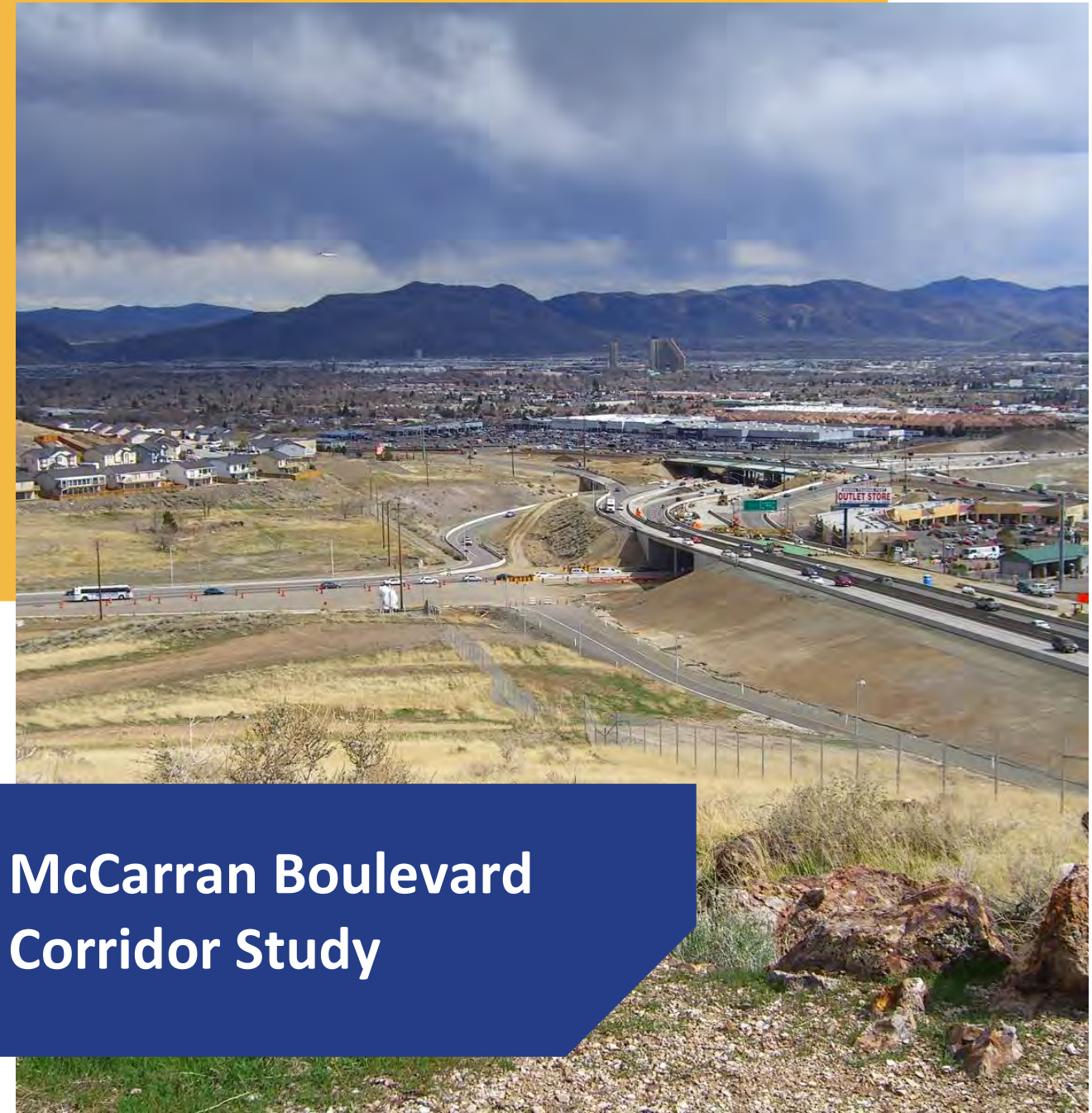
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# Traffic Report



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# McCarran Boulevard Corridor Study

## Traffic Report

December 2022

Prepared by CA Group and Parametrix



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## 1. INTRODUCTION

McCarran Boulevard is a ring road approximately 23 miles in length that largely encircles the Reno-Sparks urbanized area. Sections of the roadway carry some of the highest traffic volumes in the region, including high percentages of freight traffic. McCarran Boulevard has multiple interchanges with the interstate system and other major highways, such as I-80, I-580, US 395, and Pyramid Highway. The characteristics of McCarran Boulevard corridor varies widely throughout the region. Sections of the roadway are highly urbanized, while others are more suburban or rural in nature. The roadway traverses through industrial, commercial, and residential land uses, and has varying speed limits, multimodal elements, and traffic patterns throughout.

The intention of this study is to conduct a multimodal analysis for transportation improvements on the McCarran Boulevard loop to identify an overarching vision for future investments, as well as near-term recommendations for enhancing mobility options, improving safety, and addressing economic development efforts within the corridor that could potentially have significant traffic impacts. Recommended improvements will seek to maintain consistency of the roadway character, where feasible and within the context of the varying land use pattern. Study recommendations will be incorporated into the Nevada Department of Transportation's (NDOT) long-range planning process (One Nevada) and RTC's Regional Transportation Plan (RTP).

## 2. PROJECT LIMITS

The traffic analysis limits include 19 signalized intersections throughout the McCarran Boulevard ring road located in Reno-Sparks, Nevada. Figure 1 shows the project limits:

1. McCarran Boulevard and El Rancho Drive
2. McCarran Boulevard and Sullivan Lane
3. McCarran Boulevard and Rock Boulevard
4. McCarran Boulevard and Prater Way
5. McCarran Boulevard and Nichols Boulevard
6. McCarran Boulevard and Greg Street
7. McCarran Boulevard and Mira Loma Drive
8. McCarran Boulevard and Longley Lane
9. McCarran Boulevard and S. Virginia Street
10. McCarran Boulevard and Kietzke Lane
11. McCarran Boulevard and Lakeside Drive
12. McCarran Boulevard and Plumas Street
13. McCarran Boulevard and Cashill Boulevard
14. McCarran Boulevard and Plumb Lane
15. McCarran Boulevard and Mayberry Drive
16. McCarran Boulevard and W. 4th Street
17. McCarran Boulevard and Mae Anne Avenue
18. McCarran Boulevard and W. 7th Street
19. McCarran Boulevard and Clear Acre Lane

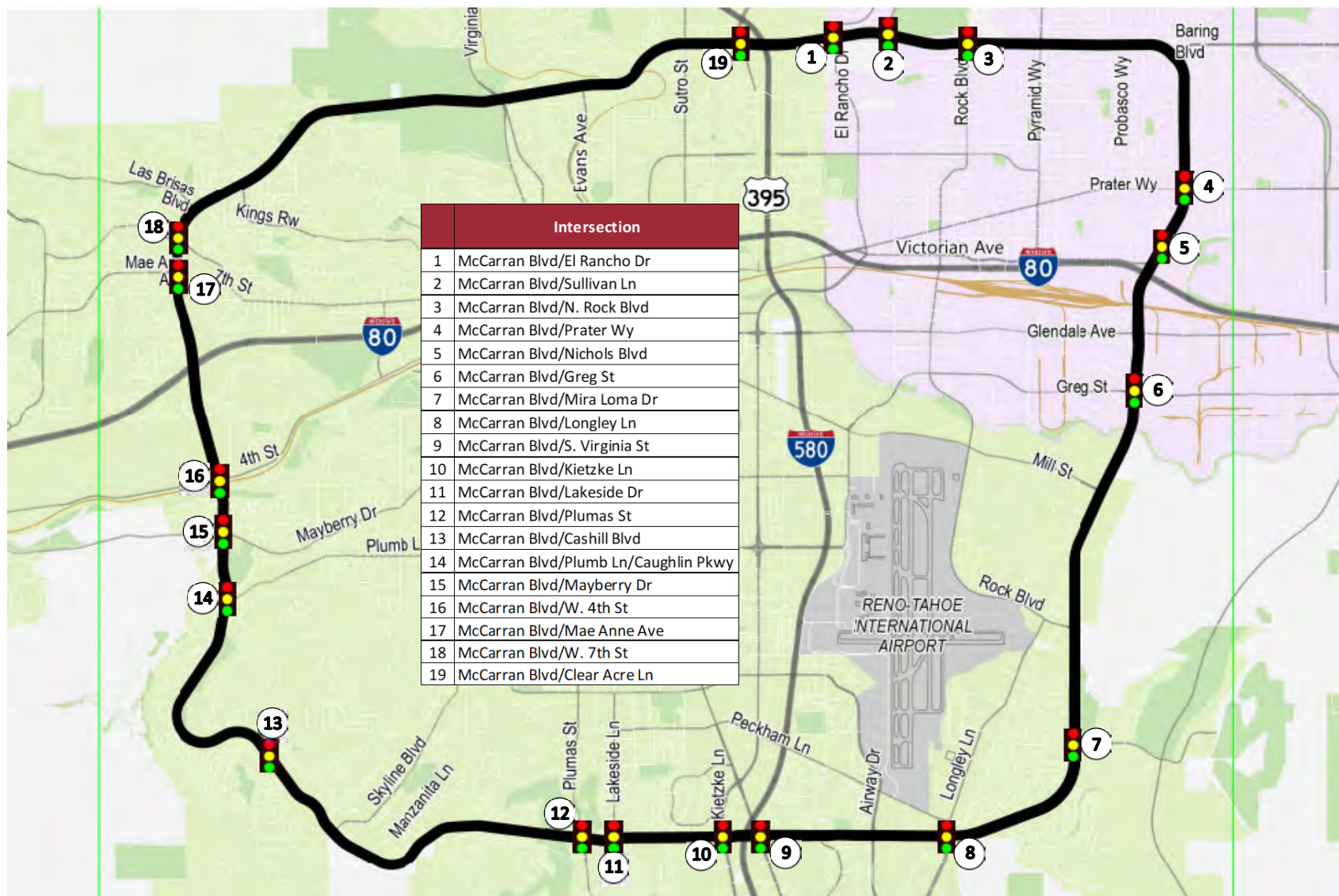


Figure 1: Project Limits for Traffic Analysis

### 3. TECHNICAL GUIDANCE, STANDARDS AND TOOLS

Traffic operations analyses were performed using Synchro 11 from existing topography/mapping, field visits, online resources such as Google Maps/Bing Maps, and traffic signal timing information was requested from City of Reno, City of Sparks and coordinated with RTC Washoe. The various data included:

- Intersection geometry (Number of Right/Through/Left lanes, Turn Pocket Lengths)
- Peak-Hour Volumes (Veh/hr)
- Traffic Signal Timing (City of Reno)
- Roadway Segment Length
- Percent Trucks
- Speed Limit

The technical references for the modeling analysis were:

- CORSIM Modeling Guidelines, NDOT, 2012
- Highway Capacity Manual 6<sup>th</sup> Edition, Transportation Research Board, 2016
- Traffic Analysis Toolbox Volume III: Guidelines for Applying Traffic Microsimulation Modeling Software, FHWA, 2004

Traffic analysis was performed for all 19 signalized intersections. The measures of effectiveness (MOE) that were considered to evaluate the operations include HCM (6<sup>th</sup> Edition) intersection delay and level-of-service (LOS). The LOS criteria for the signalized intersection is shown in Table 1. Traffic operations analysis was performed for both AM and PM peak hours for the 2021 Existing Condition, 2025 No-Action, 2050 No-Action, and 2050 Build alternative.

**Table 1: LOS Criteria for Signalized Intersection (HCM 6<sup>th</sup> Edition Exhibit 19-8)**

Control Delay (s/veh)	LOS by Volume-to-Capacity Ratio <sup>a</sup>	
	≤ 1.0	≥ 1.0
≤ 10	A	F
>10-20	B	F
>20-35	C	F
>35-55	D	F
>55-80	E	F
>80	F	F

Note: <sup>a</sup> For approach-based and intersection wide assessment, LOS is defined solely by control delay

### 4. TRAFFIC VOLUMES AND FORECASTS

Traffic forecasts were developed using the methodology and guidance provided in the *NDOT Traffic Forecasting Guidelines* (2012). NDOT TRINA historical traffic data along the corridor was reviewed to determine the annual growth rate. In addition, RTC Washoe travel-demand model (TransCAD) data was reviewed and used to develop the traffic forecasts.

Table 2 shows the historical AADT of all the available NDOT TRINA counters within the project limits. There were 33 counters along the McCarran Boulevard ring road. In the past 11 years (2011 to 2021), there was



some noticeable growth on the McCarran Boulevard traffic, with the exception between Greg Street and Mira Loma Drive, where a reduction in traffic due to the opening of the Southeast Connector in the summer of 2018. With this size of a project limits, the growth rate was divided into seven smaller corridors based on traffic volumes and land use (urban and suburban). The 8 or 10-year annual growth rates were calculated, and the average of the grouped intersections were used for that specific corridor. If the 2021 AADT's were available and deemed reasonable, a 10-year annual growth rates were used. If not, the 2019 AADT's was used to calculate the 8-year annual growth rates.

**Table 2: NDOT TRINA AADT Data**

Counter	Location	2011	2019	2021	Annual Growth Rate	Avg. By Corridor
310414	410ft E of US395	40,000	45,000	39,700	1.5%	1.9%
310674	875ft W of Sullivan Ln	29,000	32,000	52,050	1.2%	
310675	520ft W of Wedekind Rd	32,000	39,000	49,950	2.5%	
310677	970ft E of Rock Blvd	33,000	40,000	40,000	1.9%	
310467	300ft E of SR445 (Pyramid Way)	16,000	20,100		2.9%	
310466	250ft W of Probasco Way	15,000	17,800	22,200	4.0%	2.3%
310316	150ft W of York Way	17,000	19,200	22,000	2.6%	
312320	200ft N of Prater Way	21,800	22,300	24,333	1.1%	
310517	750ft N of Lincoln Way	26,000	30,000		1.8%	
310254	550ft N of SR648 (Glendale Ave)	31,000	28,300	28,700	-0.8%	-0.7%
310255	740ft S of SR648 (Glendale Ave)	25,000	22,500	24,950	0.0%	
310257	600ft S of Greg St	24,000	18,200	22,800	-0.5%	
310258	230ft N of Equity Ave	22,000	17,200	18,500	-1.7%	
310678	570ft N of Mira Loma Dr	20,000	19,800	17,200	-0.1%	1.7%
310666	570ft N of Rio Poco Rd	20,000	21,100	22,000	1.0%	
310652	660ft E of Neil Rd	15,000	15,000	17,300	1.4%	
310653	550ft W of Neil Rd	16,000	16,300	19,300	1.9%	
310654	300ft W of Smithridge Dr	24,000	31,500	27,200	3.5%	
310148	250ft E of Kietzke Ln	26,000	24,600	23,300	-0.7%	1.7%
310162	600ft E of Talbot Ln	30,000	33,500	26,600	1.4%	
310688	650ft E of Plumas St	23,000	25,200	27,200	1.7%	
311112	480ft N of Skyline Blvd	16,000	18,000	19,800	2.2%	
311018	365ft S of Plumb Ln	16,000	19,100	20,400	2.5%	
311017	500ft N of Plumb Ln	22,000	23,400	25,900	1.6%	
311012	500ft N of Mayberry Dr	25,000	25,900	29,300	1.6%	
310656	755ft N of Summit Ridge Dr	34,000	43,000	40,800	3.0%	
310662	380ft S of Sierra Highlands Dr	38,000	44,500	44,100	2.0%	2.4%
312220	585ft N of Mae Anne Ave	24,000	28,500	27,433	2.2%	
310663	365ft N of W 7th St	23,000	29,900	21,800	3.3%	3.1%
310931	340ft E of Kings Row	18,000	23,600	24,100	3.0%	
310664	638ft W of SR430 (N Virginia St)	20,000	26,100	24,000	3.4%	
310464	750ft E of N Virginia St	16,000	20,700	20,600	3.3%	
310416	665ft E of Sutro St	20,000	24,800	18,800	2.7%	
ATR	AADT used to calculate Annual Growth Rates					

As mentioned, the RTC Washoe TransCAD data was reviewed for the years 2020 and 2050 to determine the growth rates. Table 3 shows the ADT along with growth rates for each studied intersections on McCarran Boulevard. Overall, an average annual growth rate by corridor segment was determined from the TransCAD data.

**Table 3: RTC Washoe TransCAD ADT Data**

Intersection	2020	2050	Overall Growth	Annual Growth	Avg. Growth By Corridor
McCarran Blvd/El Rancho Dr	95,300	83,749	-12%	-0.4%	-0.4%
McCarran Blvd/Sullivan Ln	109,055	94,149	-14%	-0.5%	
McCarran Blvd/N. Rock Blvd	103,418	93,258	-10%	-0.3%	
McCarran Blvd/Prater Wy	102,119	107,669	5%	0.2%	0.0%
McCarran Blvd/Nichols Blvd	112,223	109,203	-3%	-0.1%	
McCarran Blvd/Mira Loma Dr	68,329	86,517	27%	0.8%	1.0%
McCarran Blvd/Longley Ln	97,762	143,263	47%	1.3%	
McCarran Blvd/S. Virginia St	114,187	139,447	22%	0.7%	0.8%
McCarran Blvd/Kietzke Ln	96,338	124,089	29%	0.8%	
McCarran Blvd/Lakeside Dr	75,438	102,681	36%	1.0%	
McCarran Blvd/Plumas St	53,663	75,088	40%	1.1%	1.2%
McCarran Blvd/Cashill Blvd	46,484	68,397	47%	1.3%	
McCarran Blvd/Plumb Ln/Caughlin Pkwy	54,916	85,836	56%	1.5%	
McCarran Blvd/Mayberry Dr	66,028	98,152	49%	1.3%	
McCarran Blvd/W. 4th St	68,537	88,043	28%	0.8%	
McCarran Blvd/Mae Anne Ave	89,910	115,138	28%	0.8%	1.2%
McCarran Blvd/W. 7th St	67,106	94,054	40%	1.1%	
McCarran Blvd/Clear Acre Ln	57,494	92,636	61%	1.6%	

The 2021 traffic volumes after applying the growth rates are shown in Figure 2. Due to existing construction during the traffic data collection, no data was collected for the north approach on Sullivan Lane, a manual calculation was performed to estimate the turning movement volumes. The same manual calculation was performed for the Kietzke Lane at McCarran Boulevard, due to the traffic data collection by the RTC Washoe, which was done during the Black Friday holiday as part of their special study. Assumptions and calculations are included in Appendix A.

As shown in Figure 3, the 2025 traffic volumes were forecasted, using the near-term average growth rates from the 2021 base year traffic volumes. Figure 4 shows the forecasted 2050 traffic volumes, calculated using the long-term average growth rates from the TransCAD model.

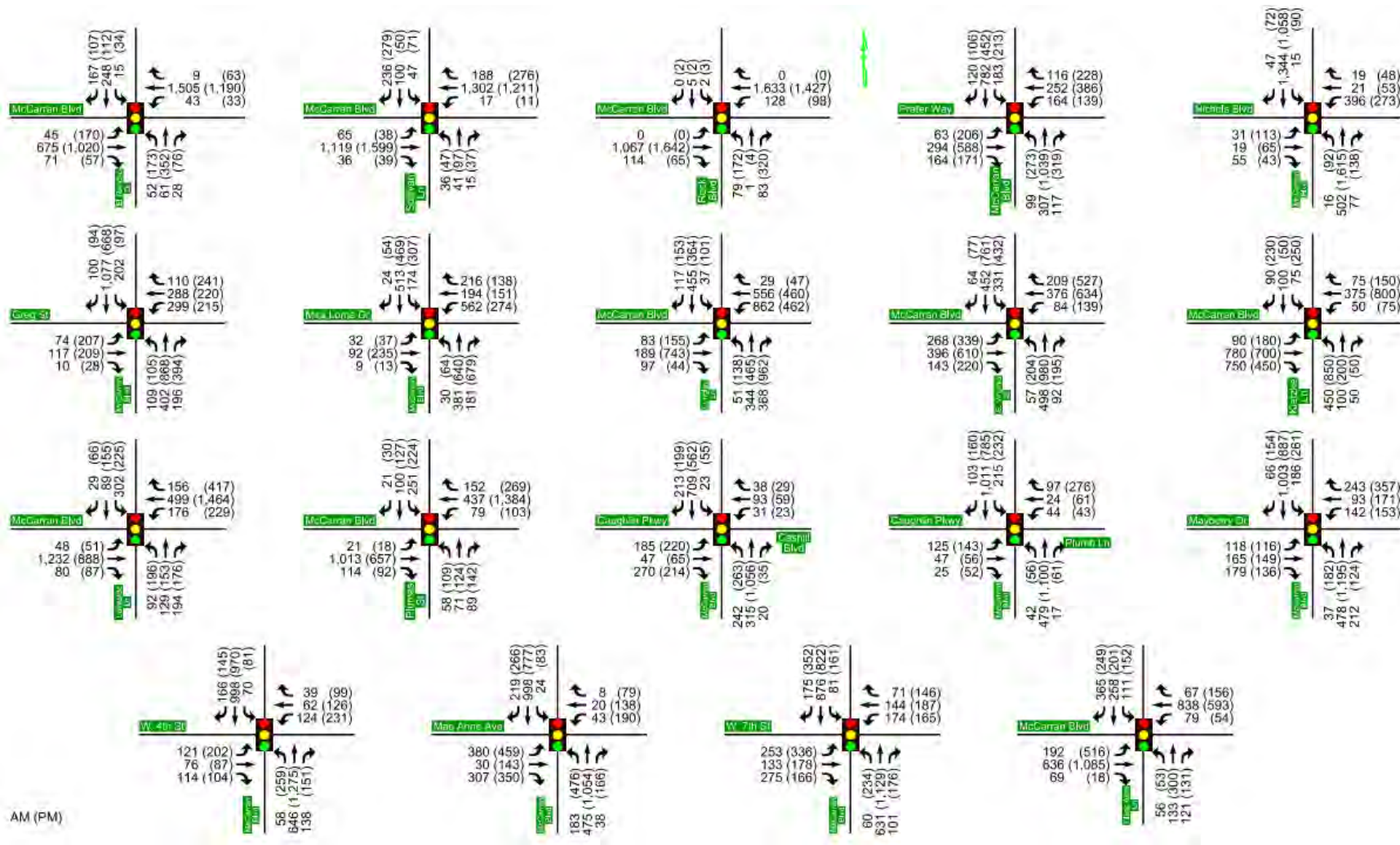


Figure 2: 2021 Peak-Hour Traffic Volumes



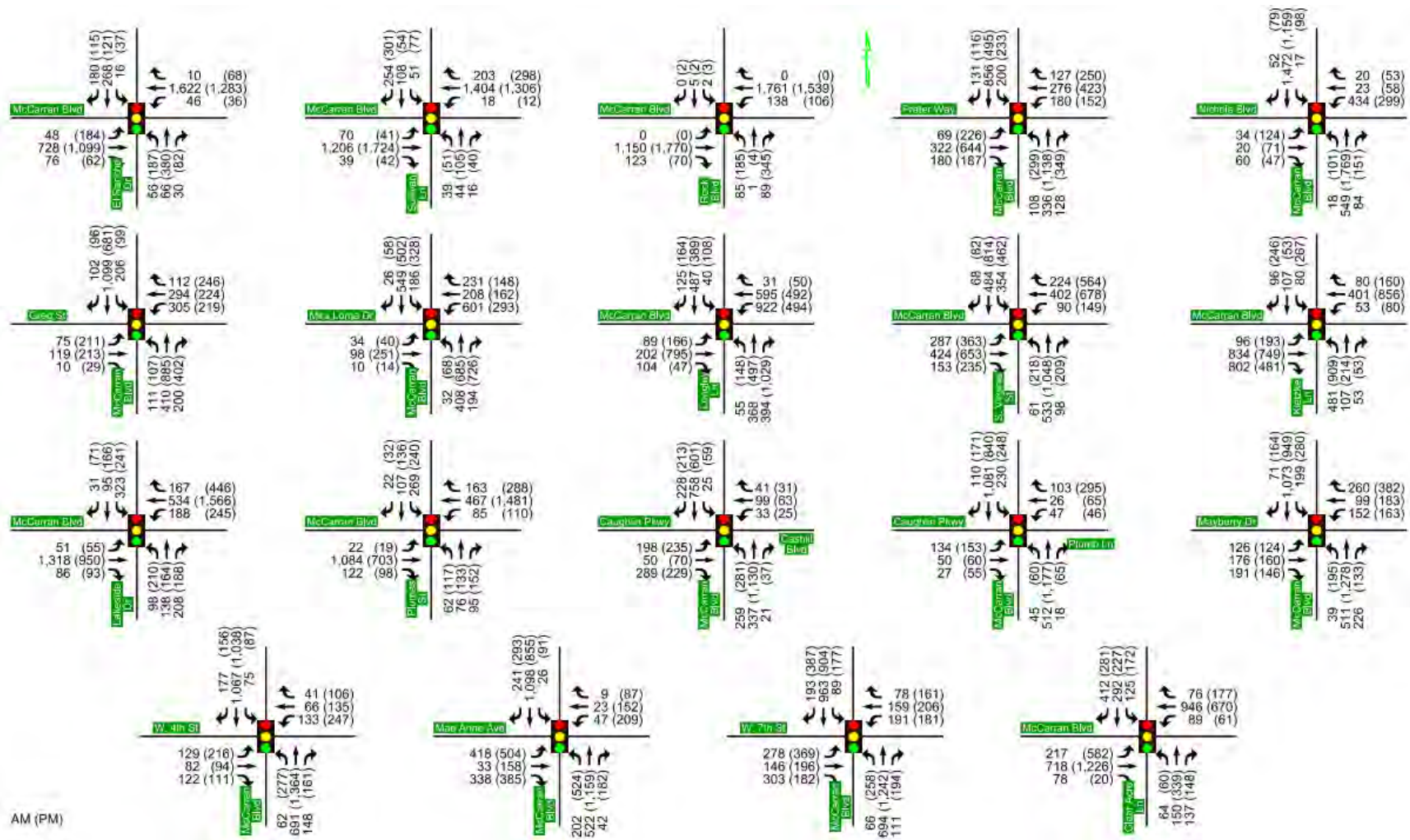


Figure 3: 2025 Peak-Hour Traffic Volumes

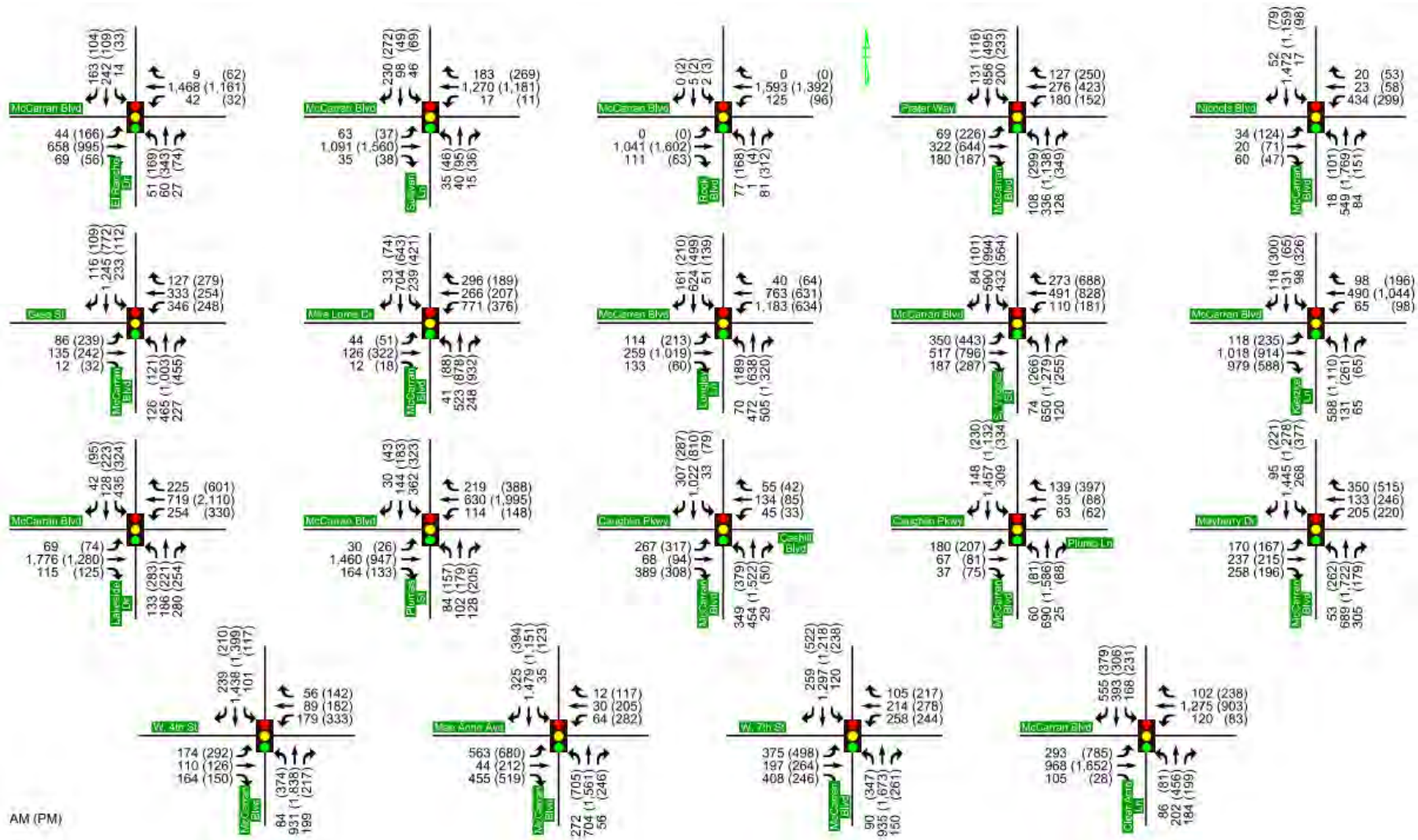


Figure 4: 2050 Peak-Hour Traffic Volumes

## 5. HEAVY VEHICLE/TRUCK PERCENTAGE

The 2020 NDOT Vehicle Classification Distribution Report was used to determine the heavy vehicle/truck percentage for each segment along McCarran Boulevard as shown in Table 4. For traffic analysis purposes, a 2% heavy vehicle/truck percentage was used for all intersection approaches except the following: 5% for McCarran Boulevard at Greg Street, Mira Loma Drive and Longley Lane, and 6% for McCarran Boulevard at S. Virginia Street.

**Table 4: Heavy Vehicle/Truck Percentage**

Segment Description			AADT	Trucks		Total Trucks	Total Truck Percent
No.	From	To		Light	Heavy		
1	IR580/US395	N. Virginia St	25,850	297	59	356	1.4%
2	N. Virginia St.	US395	21,450	297	59	356	1.7%
3	US395	Pyramid Way	39,000	333	307	640	1.6%
4	Pyramid Way	Prater Way	17,100	288	107	395	2.3%
5	IR80	Longley Ln	21,200	517	491	1,008	4.8%
6	Longley Ln	IR580/US395	20,900	1,040	300	1,340	6.4%

## 6. TRAFFIC ANALYSIS SCENARIOS

The existing conditions Synchro model was developed for all 19 project intersection. The 2021 Existing Condition, 2025 No-Action, 2050 No-Action, and 2050 Build scenarios were analyzed to evaluate the traffic operations. Various improvements such as signal retiming/phasing, adding through and/or turn lanes to the intersection's approaches were considered for the 2050 Build alternative. The traffic analysis results are discussed in the following sections.



## 7. TRAFFIC OPERATIONS ANALYSIS

### 7.1 2021 Existing Conditions Results

Table 5 shows the overall intersection delay and LOS for 2021 existing conditions. Majority of the intersections operate at desired LOS D/better. Few intersections operated with LOS E (at capacity) either during AM or PM peak-hour. The intersection at McCarran Boulevard and Cashill Boulevard operated at considerably higher delays with LOS F during AM peak-hour. Overall, majority of the intersections on McCarran Boulevard operated at an acceptable LOS during the existing year.

**Table 5: 2021 Existing Condition Delay (LOS)**

Intersection	AM	PM
McCarran Blvd/El Rancho Dr	47.3 (D)	51.7 (D)
McCarran Blvd/Sullivan Ln	63.5 (E)	29.3 (C)
McCarran Blvd/N. Rock Blvd	42.9 (D)	24.4 (C)
McCarran Blvd/Prater Wy	54.2 (D)	52.3 (D)
McCarran Blvd/Nichols Blvd	46.4 (D)	37.8 (D)
McCarran Blvd/Greg St	54.5 (D)	56.1 (E)
McCarran Blvd/Mira Loma Dr	44.9 (D)	38.7 (D)
McCarran Blvd/Longley Ln	49.2 (D)	54.7 (D)
McCarran Blvd/S. Virginia St	48.5 (D)	51.3 (D)
McCarran Blvd/Kietzke Ln	43.2 (D)	61.4 (E)
McCarran Blvd/Lakeside Dr	36.9 (D)	58.7 (E)
McCarran Blvd/Plumas St	29.4 (C)	28.9 (C)
McCarran Blvd/Cashill Blvd	110.4 (F)	38.3 (D)
McCarran Blvd/Plumb Ln/Caughlin Pkwy	50.9 (D)	42.4 (D)
McCarran Blvd/Mayberry Dr	37.4 (D)	48.6 (D)
McCarran Blvd/W. 4th St	60.6 (E)	38.8 (D)
McCarran Blvd/Mae Anne Ave	42.9 (D)	53.7 (D)
McCarran Blvd/W. 7th St	44.5 (D)	44.9 (D)
McCarran Blvd/Clear Acre Ln	57.2 (E)	46.6 (D)

Detailed results for the approaches, individual movements, and corresponding LOS for the 2021 Existing Conditions are included in Table 6. The results are as follows:

- In the north quadrant, half of the approaches and movements operated with LOS D/better. Most of the other approaches operated at capacity (LOS E), except for the two approaches at the intersection of McCarran Boulevard and Rancho Drive (LOS F). Some movements operated with LOS F, but mostly comprised of the left-turn movements.
- In the east quadrant, half of the approaches and movements operated with LOS D/better. Most of the other approaches operated at capacity (LOS E), except for the eastbound approach at McCarran Boulevard and Nichols Boulevard (LOS F). Some movements operated with considerably higher delays with LOS F, but mostly comprised of the left-turn movements.

- In the south quadrant, less than half of the approaches and movements operated with LOS D/better. More than half of the approaches and movements operated at capacity (LOS E), and a few left-turn movements operated with LOS F.
- In the west quadrant, half of the approaches and movements operated with LOS D/better. Most of the other approaches operated at capacity with LOS E, except for all approaches at McCarran Boulevard and Cashill Boulevard that operated with LOS F. Some movements operated with LOS F, but mostly comprised of the left-turn movements.

**Table 6: 2021 Existing Condition Detail Results (Delay & LOS)**

Intersection		AM Peak-Hour												PM Peak-Hour											
		Eastbound			Westbound			Northbound			Southbound			Eastbound			Westbound			Northbound			Southbound		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
McCarran Blvd/El Rancho Dr	Intersection	47.3 (D)												51.7 (D)											
	Approach	34.1 (C)			44.6 (D)			82.0 (F)			84.0 (F)			53.7 (D)			36.5 (D)			71.7 (E)			81.9 (F)		
	Movement	89.3 (F)	32.5 (C)	7.0 (A)	70.7 (E)	43.9 (F)	-	87.2 (F)	78.9 (E)	57.1 (E)	85.6 (F)	-	77.0 (E)	50.7 (D)	32.0 (C)	48.2 (D)	36.2 (D)	-	55.2 (E)	78.5 (E)	96.5 (F)	77.5 (E)	-		
McCarran Blvd/Sullivan Ln	Intersection	63.5 (E)												29.3 (C)											
	Approach	47.4 (D)			74.8 (E)			79.8 (E)			74.7 (E)			2.1 (A)			50.5 (D)			77.7 (E)			79.6 (E)		
	Movement	83.1 (F)	45.8 (D)	27.0 (C)	96.9 (F)	81.0 (F)	14.4 (B)	79.8 (E)	68.0 (E)	77.8 (E)	-	24.8 (C)	1.6 (A)	-	98.5 (F)	53.1 (D)	33.1 (C)	77.7 (E)	79.6 (E)	79.5 (E)	-				
McCarran Blvd/N. Rock Blvd	Intersection	42.9 (D)												24.4 (C)											
	Approach	39.5 (D)			43.6 (D)			59.1 (E)			52.1 (D)			16.0 (B)			17.5 (B)			73.9 (E)			47.1 (D)		
	Movement	-	40.5 (D)	26.6 (C)	77.8 (E)	40.9 (D)	63.9 (E)	54.3 (D)	52.1 (D)	-	-	-	16.2 (B)	7.7 (A)	79.9 (E)	13.3 (B)	67.4 (E)	77.4 (E)	47.1 (D)						
McCarran Blvd/Prater Wy	Intersection	54.2 (D)												52.3 (D)											
	Approach	64.8 (E)			54.4 (D)			51.4 (D)			51.3 (D)			65.2 (E)			61.2 (E)			46.0 (D)			42.3 (D)		
	Movement	55.0 (D)	66.9 (E)	52.9 (D)	55.4 (E)	-	76.0 (E)	43.5 (D)	-	85.7 (F)	43.3 (D)	-	53.6 (D)	69.3 (E)	54.6 (D)	63.5 (E)	-	78.5 (E)	37.5 (D)	-	79.7 (E)	24.6 (C)	-		
McCarran Blvd/Nichols Blvd	Intersection	46.4 (D)												37.8 (D)											
	Approach	77.5 (E)			67.5 (E)			33.7 (C)			43.1 (D)			81.0 (F)			73.7 (E)			22.1 (C)			43.1 (D)		
	Movement	69.5 (E)	81.2 (F)	68.0 (E)	55.8 (E)	104.9 (F)	31.5 (C)	32.2 (C)	104.7 (F)	41.5 (D)	44.2 (D)	82.1 (F)	79.7 (E)	74.8 (E)	66.6 (E)	45.6 (D)	20.5 (C)	21.6 (C)	96.3 (F)	38.4 (D)	39.8 (D)				
McCarran Blvd/Greg St	Intersection	54.5 (D)												56.1 (E)											
	Approach	71.5 (E)			70.7 (E)			22.0 (C)			57.4 (E)			78.9 (E)			76.6 (E)			66.1 (E)			18.6 (B)		
	Movement	76.9 (E)	68.4 (E)	68.5 (E)	80.4 (F)	60.6 (E)	-	31.4 (C)	19.5 (B)	-	74.3 (E)	54.3 (D)	78.4 (E)	79.0 (E)	79.6 (E)	78.4 (E)	74.8 (E)	-	67.1 (E)	66.0 (E)	-	24.1 (C)	17.8 (B)		
McCarran Blvd/Mira Loma Dr	Intersection	44.9 (D)												38.7 (D)											
	Approach	66.3 (E)			51.1 (D)			33.7 (C)			43.0 (D)			60.4 (E)			48.0 (D)			24.1 (C)			48.0 (D)		
	Movement	74.2 (E)	63.5 (E)	63.8 (E)	60.8 (E)	23.1 (C)	-	65.1 (E)	40.5 (D)	7.6 (A)	59.3 (E)	38.3 (D)	19.2 (B)	73.4 (E)	58.5 (E)	58.5 (E)	55.9 (E)	33.8 (C)	-	32.9 (C)	25.7 (C)	21.0 (C)	61.1 (E)	41.3 (D)	27.4 (C)
McCarran Blvd/Longley Ln	Intersection	49.2 (D)												54.7 (D)											
	Approach	58.2 (E)			46.7 (D)			48.1 (D)			52.3 (D)			61.5 (E)			46.6 (D)			56.6 (E)			55.4 (E)		
	Movement	61.1 (E)	56.9 (E)	50.2 (D)	41.2 (D)	-	73.1 (E)	44.4 (D)	-	79.0 (E)	50.1 (D)	-	59.5 (E)	61.9 (E)	57.6 (E)	35.4 (D)	-	76.7 (E)	50.6 (D)	-	65.6 (E)	52.6 (D)	-		
McCarran Blvd/S. Virginia St	Intersection	48.5 (D)												51.3 (D)											
	Approach	55.8 (E)			46.7 (D)			45.2 (D)			46.2 (D)			59.9 (E)			55.1 (E)			59.5 (E)			32.8 (C)		
	Movement	60.2 (E)	52.9 (D)	-	67.0 (E)	52.0 (D)	17.8 (B)	62.5 (E)	43.2 (D)	55.7 (E)	39.2 (D)	-	68.8 (E)	54.9 (D)	-	78.5 (E)	72.9 (E)	25.3 (C)	73.8 (E)	56.5 (E)	39.6 (D)	29.0 (C)	-		
McCarran Blvd/Kietzke Ln	Intersection	43.2 (D)												61.4 (E)											
	Approach	47.5 (D)			11.6 (B)			55.6 (E)			60.0 (E)			71.1 (E)			56.2 (E)			61.0 (E)			49.8 (D)		
	Movement	65.7 (E)	45.3 (D)	-	22.9 (C)	10.1 (B)	-	58.8 (E)	41.2 (D)	-	61.3 (E)	59.1 (E)	-	85.6 (F)	67.4 (E)	-	54.2 (D)	56.4 (E)	-	58.5 (E)	71.6 (E)	-	45.4 (D)	71.7 (E)	-
McCarran Blvd/Lakeside Dr	Intersection	36.9 (D)												58.7 (E)											
	Approach	5.4 (A)			67.7 (E)			74.0 (E)			51.2 (D)			53.6 (D)			57.5 (E)			69.3 (E)			62.2 (E)		
	Movement	7.9 (A)	5.3 (A)	84.6 (F)	61.8 (E)	-	54.7 (D)	68.2 (E)	91.5 (F)	55.3 (E)	47.9 (D)	7.1 (A)	64.9 (E)	53.0 (D)	58.1 (E)	57.5 (E)	-	57.3 (E)	76.1 (E)	79.4 (E)	63.6 (E)	69.5 (E)	33.6 (C)		
McCarran Blvd/Plumas St	Intersection	29.4 (C)												28.9 (C)											
	Approach	18.9 (B)			18.9 (B)			73.5 (E)			56.2 (E)			40.7 (D)			11.0 (B)			66.9 (E)			51.8 (D)		
	Movement	81.6 (F)	17.7 (B)	17.7 (B)	80.9 (F)	10.2 (B)	9.5 (A)	71.3 (E)	72.9 (E)	76.2 (E)	57.3 (E)	53.9 (D)	64.0 (E)	40.1 (D)	40.1 (D)	46.2 (D)	9.7 (A)	1.5 (A)	68.2 (E)	66.0 (E)	66.6 (E)	52.5 (D)	50.8 (D)		
McCarran Blvd/Cashill Blvd	Intersection	110.4 (F)												38.3 (D)											
	Approach	116.2 (F)			58.6 (E)			92.1 (F)			127.7 (F)			65.1 (E)			83.7 (F)			30.2 (C)			31.0 (C)		
	Movement	200.9 (F)	41.7 (D)	56.2 (E)	80.7 (F)	53.9 (D)	49.7 (D)	183.7 (F)	25.8 (C)	25.8 (C)	88.4 (F)	128.1 (F)	129.3 (F)	72.7 (E)	52.3 (D)	59.9 (E)	106.3 (F)	79.7 (E)	71.0 (E)	77.6 (E)	18.8 (B)	18.7 (B)	86.7 (F)	26.9 (C)	27.0 (C)
McCarran Blvd/Plumb Ln/Caughlin Pkwy	Intersection	50.9 (D)												42.4 (D)											
	Approach	53.7 (D)			56.9 (E)			41.3 (D)			53.7 (D)			46.7 (D)			65.4 (E)			44.9 (D)			32.8 (C)		
	Movement	55.9 (D)	61.6 (E)	25.1 (C)	47.3 (D)	53.2 (D)	63.9 (E)	75.4 (E)	38.4 (D)	38.4 (D)	69.3 (E)	50.7 (D)	50.7 (D)	46.1 (D)	47.7 (D)	47.4 (D)	50.5 (D)	55.1 (E)	71.6 (E)	86.2 (F)	43.0 (D)	42.8 (D)	79.2 (E)	21.2 (C)	21.2 (C)
McCarran Blvd/Mayberry Dr	Intersection	37.4 (D)												48.6 (D)											
	Approach	57.0 (E)			46.1 (D)			41.5 (D)			29.2 (C)			69.6 (E)			69.6 (E)			41.4 (D)			46.4 (D)		
	Movement	42.2 (D)	67.5 (E)	-	44.5 (D)	48.7 (D)	-	62.0 (E)	39.9 (D)	-	51.2 (D)	25.1 (C)	-	57.2 (E)	79.2 (E)	-	61.8 (E)	76.6 (E)	-	53.9 (D)	39.5 (D)	-	80.2 (F)	36.5 (D)	-
McCarran Blvd/W. 4th St	Intersection	60.6 (E)												38.8 (D)											
	Approach	63.0 (E)			67.3 (E)			44.1 (D)			68.7 (E)			79.5 (E)			73.8 (E)			23.3 (C)			35.9 (D)		
	Movement	63.5 (E)	62.2 (E)	-	72.1 (E)	62.6 (E)	57.1 (E)	68.9 (E)	41.9 (D)	-	68.0 (E)	76.9 (F)	4.1 (A)	79.7 (E)	79.0 (E)	-	79.6 (E)	77.1 (E)	50.1 (D)	66.8 (E)	14.5 (B)	-	82.5 (F)	35.0 (D)	9.6 (A)
McCarran Blvd/Mae Anne Ave	Intersection	42.9 (D)												53.7 (D)											
	Approach	53.9 (D)			49.7 (D)			41.8 (D)			38.8 (D)			78.0 (E)			75.7 (E)			39.4 (D)			54.0 (D)		
	Movement	53.6 (D)	57.4 (E)	-	46.5 (D)	56.4 (E)	-	58.6 (E)	35.4 (D)	-	59.1 (E)	38.3 (D)	-	78.6 (E)	75.9 (E)	-	75.1 (E)	76.5 (E)	-	51.6 (D)	33.8 (C)	-	67.2 (E)	52.6 (D)	-
McCarran Blvd/W. 7th St	Intersection	44.5 (D)												44.9 (D)											
	Approach	50.7 (D)			50.2 (D)			37.9 (D)			43.6 (D)			54.9 (D)			65.3 (E)			32.0 (C)			48.6 (D)		
	Movement	47.3 (D)	48.9 (D)	56.0 (E)	42.4 (D)	59.6 (E)	50.9 (D)	59.7 (E)	36.5 (D)	33.2 (C)	61.2 (E)	42.0 (D)	-	68.4 (E)	52.8 (D)	21.3 (C)	50.6 (D)	78.8 (E)	64.5 (E)	52.2 (D)	28.8 (C)	23.9 (C)	74.6 (E)	43.5 (D)	-
McCarran Blvd/Clear Acre Ln	Intersection	57.2 (E)												46.6 (D)											
	Approach	52.0 (D)			53.0 (D)			74.4 (E)			71.6 (E)			27.4 (C)			64.5 (E)			70.7 (E)			71.6 (E)		
	Movement	74.3 (E)	46.0 (D)	45.9 (D)	86.9 (F)	51.0 (D)	34.0 (C)	75.9 (E)	72.8 (E)	54.9 (D)	78.8 (E)	-	33.8 (C)	24.4 (C)	24.3 (C)	87.8 (F)	64.6 (E)	53.0 (D)	72.7 (E)	68.5 (E)	66.1 (E)	75.8 (E)	-		



## 7.2 2025 No-Action Results

Table 7 shows the overall intersection delay and LOS for 2025 No-Action. The signal splits were optimized to accommodate the increase in turning volumes. Eight out of nineteen intersections operate at LOS D/better. Ten intersections operate at capacity (LOS E) during AM and/or PM peak-hour. The intersection of McCarran Boulevard and Cashill Boulevard operate at considerably higher delays with LOS F. As expected, the delays were higher in the 2025 No-Action compared to the 2021 Existing Conditions due to the increase in traffic volumes.

**Table 7: 2025 No-Action Delay (LOS)**

Intersection	AM	PM
McCarran Blvd/El Rancho Dr	66.3 (E)	60.0 (E)
McCarran Blvd/Sullivan Ln	48.1 (D)	36.3 (D)
McCarran Blvd/N. Rock Blvd	53.0 (D)	36.9 (D)
McCarran Blvd/Prater Wy	54.7 (D)	61.3 (E)
McCarran Blvd/Nichols Blvd	48.4 (D)	41.2 (D)
McCarran Blvd/Greg St	53.8 (D)	55.9 (E)
McCarran Blvd/Mira Loma Dr	44.4 (D)	61.9 (E)
McCarran Blvd/Longley Ln	49.4 (D)	56.3 (E)
McCarran Blvd/S. Virginia St	48.0 (D)	54.1 (D)
McCarran Blvd/Kietzke Ln	44.2 (D)	54.5 (D)
McCarran Blvd/Lakeside Dr	39.5 (D)	55.1 (E)
McCarran Blvd/Plumas St	30.4 (C)	23.1 (C)
McCarran Blvd/Cashill Blvd	110.4 (F)	53.0 (D)
McCarran Blvd/Plumb Ln/Caughlin Pkwy	43.8 (D)	55.2 (E)
McCarran Blvd/Mayberry Dr	26.6 (C)	56.3 (E)
McCarran Blvd/W. 4th St	76.9 (E)	36.1 (D)
McCarran Blvd/Mae Anne Ave	33.7 (C)	53.6 (D)
McCarran Blvd/W. 7th St	43.5 (D)	52.3 (D)
McCarran Blvd/Clear Acre Ln	63.9 (E)	58.4 (E)

Detailed results for the approaches, individual movements, and corresponding LOS for the 2025 No-Action are included in Table 8. The results are as follows:

- In the north quadrant, less than half of the approaches and movements operate with LOS D/better. Most of the other approaches and movements operate at capacity (LOS E), except for two approaches at McCarran Boulevard and Rancho Drive, and the southbound approach at McCarran Boulevard and Clear Acre Lane that operate with LOS F. Some movements operate with LOS F, but mostly comprised of the left-turn movements.
- In the east quadrant, less than half of the approaches and movements operate with LOS D/better. Most of the other approaches and movements operate at capacity (LOS E). Some movements operated with considerably higher delays with LOS F, but mostly comprised of the left-turn movements.

- In the south quadrant, less than half of the approaches and movements operate with LOS D/better. More than half of the approaches and movements operate at capacity with LOS E, and a few left-turn movements operate with LOS F.
- In the west quadrant, less than half of the approaches and movements operate with LOS D/better. Most of the other approaches operate at capacity with LOS E, except for all approaches at McCarran Boulevard and Cashill Boulevard, eastbound and southbound approaches at McCarran Boulevard and 4<sup>th</sup> Street, and eastbound approach at McCarran Boulevard and 7<sup>th</sup> Street that operate with LOS F. Some movements operate with LOS F, but mostly comprised of the left-turn movements.

Table 8: 2025 No-Action Detail Results (Delay & LOS)

Intersection		AM Peak-Hour												PM Peak-Hour											
		Eastbound			Westbound			Northbound			Southbound			Eastbound			Westbound			Northbound			Southbound		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
McCarran Blvd/El Rancho Dr	Intersection	66.3 (E)												60.0 (E)											
	Approach	34.8 (C)			77.4 (E)			81.3 (F)			86.1 (F)			55.7 (E)			45.1 (D)			94.4 (F)			80.5 (F)		
	Movement	88.1 (F)	33.4 (C)	7.6 (A)	70.4 (E)	77.6 (F)	-	86.1 (F)	78.5 (E)	56.0 (E)	87.9 (F)	-	98.4 (F)	49.7 (D)	28.9 (C)	53.7 (D)	44.8 (D)	-	57.2 (E)	109.7 (F)	92.8 (F)	76.7 (E)	-		
McCarran Blvd/Sullivan Ln	Intersection	48.1 (D)												36.3 (D)											
	Approach	40.9 (D)			49.4 (D)			79.4 (E)			74.5 (E)			3.2 (A)			65.5 (E)			81.1 (F)			79.0 (E)		
	Movement	82.3 (F)	39.0 (D)	22.7 (C)	95.3 (F)	53.2 (F)	8.8 (A)	79.4 (E)	67.5 (E)	77.8 (E)	-	30.0 (C)	2.6 (A)	-	94.2 (F)	70.9 (F)	32.5 (C)	81.1 (F)	79.0 (E)	79.1 (E)	-				
McCarran Blvd/N. Rock Blvd	Intersection	53.0 (D)												36.9 (D)											
	Approach	44.1 (D)			58.3 (E)			58.6 (E)			50.2 (D)			30.8 (C)			19.3 (B)			111.4 (F)			48.2 (D)		
	Movement	-	45.4 (D)	27.4 (C)	77.3 (E)	56.8 (F)	65.2 (E)	52.2 (D)	50.2 (D)	-	31.4 (F)	8.1 (A)	79.1 (E)	15.2 (B)	94.1 (F)	121.0 (F)	48.2 (D)								
McCarran Blvd/Prater Wy	Intersection	54.7 (D)												61.3 (E)											
	Approach	65.1 (E)			54.9 (D)			52.5 (D)			51.8 (D)			74.2 (E)			61.0 (E)			58.8 (E)			50.9 (D)		
	Movement	54.2 (D)	67.4 (E)	55.1 (E)	54.7 (D)	-	75.8 (E)	45.0 (D)	-	79.8 (E)	45.3 (D)	-	58.1 (E)	79.8 (E)	55.4 (E)	63.0 (E)	-	76.3 (E)	54.2 (D)	-	95.3 (F)	30.0 (C)	-		
McCarran Blvd/Nichols Blvd	Intersection	48.4 (D)												41.2 (D)											
	Approach	76.9 (E)			67.9 (E)			34.3 (C)			46.3 (D)			79.9 (E)			74.0 (E)			27.5 (C)			45.4 (D)		
	Movement	68.9 (E)	80.6 (F)	68.5 (E)	54.2 (D)	105.8 (F)	32.0 (C)	32.7 (C)	105.3 (F)	44.4 (D)	48.1 (D)	81.2 (F)	78.5 (E)	75.4 (E)	65.0 (E)	48.7 (D)	25.7 (C)	27.5 (C)	100.3 (F)	40.4 (D)	42.2 (D)				
McCarran Blvd/Greg St	Intersection	53.8 (D)												55.9 (E)											
	Approach	71.6 (E)			67.2 (E)			22.7 (C)			57.3 (E)			78.3 (E)			76.0 (E)			65.0 (E)			19.9 (B)		
	Movement	76.8 (E)	68.5 (E)	68.6 (E)	74.0 (E)	60.2 (E)	-	32.3 (C)	20.0 (C)	-	74.2 (E)	54.1 (D)	78.0 (E)	78.3 (E)	78.9 (E)	78.0 (E)	73.9 (E)	-	67.7 (E)	64.7 (E)	-	26.6 (C)	18.9 (B)		
McCarran Blvd/Mira Loma Dr	Intersection	44.4 (D)												61.9 (E)											
	Approach	68.9 (E)			26.9 (C)			47.6 (D)			56.2 (E)			59.2 (E)			62.3 (E)			69.7 (E)			51.0 (D)		
	Movement	75.2 (E)	66.3 (E)	67.4 (E)	31.1 (C)	14.8 (B)	-	60.0 (E)	54.0 (D)	27.0 (C)	65.7 (E)	53.9 (D)	29.3 (C)	75.1 (E)	56.8 (E)	56.9 (E)	78.4 (E)	33.2 (C)	-	35.3 (D)	31.3 (C)	122.2 (F)	66.0 (E)	43.2 (D)	27.4 (C)
McCarran Blvd/Longley Ln	Intersection	49.4 (D)												56.3 (E)											
	Approach	58.2 (E)			47.1 (D)			47.4 (D)			52.7 (D)			58.0 (E)			54.6 (D)			57.2 (E)			55.2 (E)		
	Movement	60.8 (E)	57.1 (E)	50.8 (D)	41.5 (D)	-	72.0 (E)	43.7 (D)	-	77.4 (E)	50.7 (D)	-	59.1 (E)	57.7 (E)	75.2 (E)	34.0 (D)	-	79.2 (E)	50.6 (D)	-	68.2 (E)	51.6 (D)	-		
McCarran Blvd/S. Virginia St	Intersection	48.0 (D)												54.1 (D)											
	Approach	54.8 (D)			45.4 (D)			45.5 (D)			46.2 (D)			59.4 (E)			60.6 (E)			61.5 (E)			36.5 (D)		
	Movement	60.0 (E)	51.3 (D)	-	66.3 (E)	50.4 (D)	17.3 (B)	62.2 (E)	43.6 (D)	55.4 (E)	39.5 (D)	-	68.2 (E)	54.5 (D)	-	77.7 (E)	79.7 (E)	31.0 (C)	74.1 (E)	58.9 (E)	42.4 (D)	33.2 (C)	-		
McCarran Blvd/Kietzke Ln	Intersection	44.2 (D)												54.5 (D)											
	Approach	48.8 (D)			12.7 (B)			56.3 (E)			59.8 (E)			53.7 (D)			59.3 (E)			53.8 (D)			45.3 (D)		
	Movement	65.2 (E)	46.9 (D)	-	24.0 (C)	11.2 (B)	-	59.8 (E)	40.4 (D)	-	61.0 (E)	58.9 (E)	-	91.4 (F)	44.0 (D)	-	76.4 (E)	57.7 (E)	-	49.9 (D)	70.6 (E)	-	40.0 (D)	72.2 (E)	-
McCarran Blvd/Lakeside Dr	Intersection	39.5 (D)												55.1 (E)											
	Approach	11.0 (B)			67.4 (E)			75.0 (E)			50.8 (D)			58.1 (E)			45.4 (D)			70.8 (E)			68.6 (E)		
	Movement	10.9 (B)	11.0 (B)	86.4 (F)	60.7 (E)	-	53.6 (D)	68.1 (E)	94.4 (F)	55.8 (E)	46.4 (D)	7.9 (A)	84.4 (F)	56.6 (E)	59.5 (E)	43.2 (D)	-	58.7 (E)	77.6 (E)	80.9 (F)	67.8 (E)	72.2 (E)	60.6 (E)		
McCarran Blvd/Plumas St	Intersection	30.4 (C)												23.1 (C)											
	Approach	21.1 (C)			19.5 (B)			72.7 (E)			55.2 (E)			30.6 (C)			4.4 (A)			66.3 (E)			52.5 (D)		
	Movement	81.7 (F)	20.0 (C)	20.0 (C)	80.1 (F)	10.9 (B)	10.2 (B)	71.0 (E)	72.0 (E)	74.9 (E)	56.4 (E)	52.9 (D)	81.6 (F)	29.4 (C)	29.4 (C)	53.1 (D)	1.4 (A)	0.3 (A)	68.6 (E)	64.9 (E)	65.6 (E)	53.6 (D)	50.8 (D)		
McCarran Blvd/Cashill Blvd	Intersection	110.4 (F)												53.0 (D)											
	Approach	82.8 (F)			57.3 (E)			107.5 (F)			135.0 (F)			62.3 (E)			82.3 (F)			57.6 (E)			35.5 (D)		
	Movement	123.3 (F)	40.6 (D)	55.4 (E)	79.4 (E)	60.2 (E)	25.0 (C)	219.2 (F)	26.2 (C)	26.2 (C)	87.6 (F)	135.7 (F)	136.8 (F)	70.0 (E)	48.8 (D)	57.2 (E)	98.9 (F)	80.2 (F)	70.2 (E)	181.4 (F)	27.7 (C)	27.7 (C)	85.0 (F)	31.6 (C)	31.6 (C)
McCarran Blvd/Plumb Ln/Caughlin Pkwy	Intersection	43.8 (D)												55.2 (E)											
	Approach	62.9 (E)			60.2 (E)			57.2 (E)			33.9 (C)			45.1 (D)			76.4 (E)			63.3 (E)			43.2 (D)		
	Movement	69.5 (E)	50.3 (D)	49.1 (D)	57.6 (E)	53.0 (D)	64.2 (E)	74.3 (E)	55.9 (E)	55.7 (E)	34.4 (C)	33.7 (C)	33.8 (C)	45.5 (D)	46.1 (D)	45.7 (D)	48.4 (D)	53.4 (D)	89.0 (F)	84.9 (F)	62.1 (E)	62.3 (E)	113.8 (F)	25.5 (C)	25.6 (C)
McCarran Blvd/Mayberry Dr	Intersection	26.6 (C)												56.3 (E)											
	Approach	57.7 (E)			49.8 (D)			42.6 (D)			7.8 (A)			71.5 (E)			74.4 (E)			58.0 (E)			45.5 (D)		
	Movement	41.6 (D)	69.3 (E)	-	50.2 (D)	49.2 (D)	-	66.7 (E)	40.8 (D)	-	28.7 (C)	3.9 (A)	-	57.8 (E)	82.1 (F)	-	65.6 (E)	82.2 (F)	-	58.7 (E)	57.9 (E)	-	72.6 (E)	37.5 (D)	-
McCarran Blvd/W. 4th St	Intersection	76.9 (E)												36.1 (D)											
	Approach	62.5 (E)			68.4 (E)			46.5 (D)			98.7 (F)			91.3 (F)			75.1 (E)			8.9 (A)			43.9 (D)		
	Movement	62.5 (E)	62.4 (E)	-	74.2 (E)	62.4 (E)	56.9 (E)	67.1 (E)	44.7 (D)	-	67.4 (E)	112.6 (F)	4.5 (A)	96.8 (F)	78.6 (E)	-	83.4 (F)	75.5 (E)	48.0 (D)	50.2 (D)	0.5 (A)	-	81.6 (F)	44.4 (D)	11.4 (B)
McCarran Blvd/Mae Anne Ave	Intersection	33.7 (C)												53.6 (D)											
	Approach	58.0 (E)			49.2 (D)			36.7 (D)			21.1 (C)			75.0 (E)			79.1 (E)			37.5 (D)			57.5 (E)		
	Movement	58.0 (E)	57.8 (E)	-	45.6 (D)	56.6 (E)	-	59.9 (E)	27.8 (C)	-	58.7 (E)	20.2 (C)	-	75.0 (E)	75.2 (E)	-	73.2 (E)	87.2 (F)	-	52.3 (D)	30.8 (C)	-	86.7 (F)	54.4 (D)	-
McCarran Blvd/W. 7th St	Intersection	43.5 (D)												52.3 (D)											
	Approach	47.8 (D)			50.8 (D)			37.2 (D)			43.0 (D)			90.7 (F)			67.4 (E)			32.9 (C)			49.8 (D)		
	Movement	46.7 (D)	47.3 (D)	49.4 (D)	42.8 (D)	60.6 (E)	50.1 (D)	60.1 (E)	35.6 (D)	32.0 (C)	60.9 (E)	41.3 (D)	-	133.2 (F)	57.5 (E)	22.7 (C)	49.4 (D)	85.4 (F)	63.8 (E)	51.8 (D)	30.0 (C)	24.2 (C)	74.1 (E)	45.1 (D)	-
McCarran Blvd/Clear Acre Ln	Intersection	63.9 (E)												58.4 (E)											
	Approach	55.6 (E)			61.7 (E)			73.0 (E)			85.1 (F)			50.7 (D)			59.8 (E)			74.3 (E)			74.8 (E)		
	Movement	76.3 (E)	49.9 (D)	49.8 (D)	91.1 (F)	60.5 (E)	34.3 (C)	74.4 (E)	71.4 (E)	54.2 (D)	98.3 (F)	-	56.8 (E)	48.0 (D)	47.6 (D)	84.4 (F)	60.2 (E)	46.6 (D)	78.2 (E)	69.8 (E)	64.9 (E)	82.3 (F)	-		



### 7.3 2050 No-Action Results

Table 9 shows the overall intersection delay and LOS for 2050 No-Action. Similar to the 2025 No-Action, the signal splits were optimized to accommodate the increase in traffic volumes. The 2050 No-Action analysis showed only five of the nineteen intersections operate at LOS D/better. Seven intersections operate at capacity (LOS E) either during AM and/or PM peak-hour, and the remaining seven intersections operate with considerably higher delays with LOS F during AM and/or PM peak-hour. Overall, majority of the intersections on McCarran Boulevard do not operate at an acceptable LOS.

**Table 9: 2050 No-Action Delay (LOS)**

Intersection	AM	PM
McCarran Blvd/El Rancho Dr	42.5 (D)	52.0 (D)
McCarran Blvd/Sullivan Ln	37.5 (D)	29.6 (C)
McCarran Blvd/N. Rock Blvd	41.0 (D)	27.2 (C)
McCarran Blvd/Prater Wy	54.7 (D)	61.3 (E)
McCarran Blvd/Nichols Blvd	48.4 (D)	41.2 (D)
McCarran Blvd/Greg St	54.9 (D)	55.0 (D)
McCarran Blvd/Mira Loma Dr	64.3 (E)	121.5 (F)
McCarran Blvd/Longley Ln	48.4 (D)	67.2 (E)
McCarran Blvd/S. Virginia St	48.3 (D)	56.7 (E)
McCarran Blvd/Kietzke Ln	51.5 (D)	63.0 (E)
McCarran Blvd/Lakeside Dr	147.8 (F)	136.9 (F)
McCarran Blvd/Plumas St	42.0 (D)	39.9 (D)
McCarran Blvd/Cashill Blvd	222.4 (F)	116.6 (F)
McCarran Blvd/Plumb Ln/Caughlin Pkwy	71.8 (E)	93.5 (F)
McCarran Blvd/Mayberry Dr	34.9 (C)	69.2 (E)
McCarran Blvd/W. 4th St	159.2 (F)	140.3 (F)
McCarran Blvd/Mae Anne Ave	41.2 (D)	68.8 (E)
McCarran Blvd/W. 7th St	54.1 (D)	66.2 (E)
McCarran Blvd/Clear Acre Ln	126.2 (F)	67.5 (E)

Detailed results for the approach, individual movement, and LOS for the 2050 No-Action are included in Table 10. The results are as follows:

- In the north quadrant, less than half of the approaches and movements operate with LOS D/better. Half of the other approaches operate with LOS F, except for the southbound approach at McCarran Boulevard and Sullivan Lane (LOS E). Half of the movements operate with LOS F, but mostly comprised of the left-turn movements.
- In the east quadrant, less than half of the approaches and movements operate with LOS D/better. Most of the other approaches and movements operate at capacity with LOS E, except for the westbound and northbound approaches at McCarran Boulevard and Mira Loma Drive, and the eastbound and westbound approaches of McCarran Boulevard and Longley Lane that operate with

LOS F. Some movements operated with considerably higher delays with LOS F, but mostly comprised of the left-turn movements.

- In the south quadrant, one fourth of the approaches and movements operate with LOS D/better. Three quarters of the approaches and movements operate at capacity (LOS E) or failing (LOS F), respectively.
- In the west quadrant, eight out of twenty-four approaches operate at capacity with LOS E, and fourteen out of twenty four approaches are failing with LOS F. Most of the movements operate at capacity (LOS E) or failing (LOS F), respectively.

Table 10: 2050 No-Action Detail Results (Delay & LOS)

Intersection		AM Peak-Hour												PM Peak-Hour											
		Eastbound			Westbound			Northbound			Southbound			Eastbound			Westbound			Northbound			Southbound		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
McCarran Blvd/El Rancho Dr	Intersection	42.5 (D)												52.0 (D)											
	Approach	33.9 (C)			36.4 (D)			82.1 (F)			83.4 (F)			51.0 (D)			37.8 (D)			76.4 (E)			81.6 (F)		
	Movement	89.7 (F)	32.3 (C)	6.8 (A)	71.0 (E)	35.4 (F)	-	87.4 (F)	79.0 (E)	57.5 (E)	84.9 (F)	-	94.9 (F)	44.7 (D)	28.8 (C)	52.6 (D)	37.4 (D)	-	55.6 (E)	85.0 (F)	95.8 (F)	77.4 (E)	-		
McCarran Blvd/Sullivan Ln	Intersection	37.5 (D)												29.6 (C)											
	Approach	39.5 (D)			29.3 (C)			80.1 (F)			75.1 (E)			2.2 (A)			51.4 (D)			77.7 (E)			79.5 (E)		
	Movement	83.7 (F)	37.3 (D)	23.6 (C)	97.5 (F)	30.5 (C)	9.5 (A)	80.1 (F)	68.2 (E)	78.3 (E)	-	25.8 (C)	1.7 (A)	-	97.1 (F)	54.2 (D)	32.6 (C)	77.7 (E)	79.5 (E)	79.4 (E)	-				
McCarran Blvd/N. Rock Blvd	Intersection	41.0 (D)												27.2 (C)											
	Approach	38.5 (D)			40.9 (D)			59.5 (E)			52.6 (D)			17.8 (B)			17.8 (B)			87.4 (F)			48.2 (D)		
	Movement	-	39.4 (D)	26.4 (C)	78.0 (E)	38.0 (D)	64.3 (E)	55.0 (D)	52.6 (D)	-	18.1 (B)	7.7 (A)	79.6 (E)	13.6 (B)	78.1 (E)	92.6 (F)	48.2 (D)								
McCarran Blvd/Prater Wy	Intersection	54.7 (D)												61.3 (E)											
	Approach	65.1 (E)			54.9 (D)			52.5 (D)			51.8 (D)			74.2 (E)			61.0 (E)			58.8 (E)			50.9 (D)		
	Movement	54.2 (D)	67.4 (E)	55.1 (E)	54.7 (D)	-	75.8 (E)	45.0 (D)	-	79.8 (E)	45.3 (D)	-	58.1 (E)	79.8 (E)	55.4 (E)	63.0 (E)	-	76.3 (E)	54.2 (D)	-	95.3 (F)	30.0 (C)	-		
McCarran Blvd/Nichols Blvd	Intersection	48.4 (D)												41.2 (D)											
	Approach	76.9 (E)			67.9 (E)			34.3 (C)			46.3 (D)			79.9 (E)			74.0 (E)			27.5 (C)			45.4 (D)		
	Movement	68.9 (E)	80.6 (F)	68.5 (E)	54.2 (D)	105.8 (F)	32.0 (C)	32.7 (C)	105.3 (F)	44.4 (D)	48.1 (D)	81.2 (F)	78.5 (E)	75.4 (E)	65.0 (E)	48.7 (D)	25.7 (C)	27.5 (C)	100.3 (F)	40.4 (D)	42.2 (D)				
McCarran Blvd/Greg St	Intersection	54.9 (D)												55.0 (D)											
	Approach	72.2 (E)			68.0 (E)			25.8 (C)			57.8 (E)			71.7 (E)			70.5 (E)			61.6 (E)			28.0 (C)		
	Movement	76.4 (E)	69.6 (E)	69.7 (E)	75.8 (E)	59.9 (E)	-	36.8 (D)	22.8 (C)	-	76.8 (E)	54.3 (D)	65.5 (E)	76.9 (E)	77.5 (E)	66.6 (E)	74.4 (E)	-	70.0 (E)	60.6 (E)	-	38.4 (C)	26.5 (C)		
McCarran Blvd/Mira Loma Dr	Intersection	64.3 (E)												121.5 (F)											
	Approach	75.0 (E)			51.2 (D)			65.0 (E)			75.9 (E)			56.9 (E)			114.1 (F)			177.0 (F)			65.0 (E)		
	Movement	72.8 (E)	75.0 (E)	76.5 (E)	63.5 (F)	15.4 (B)	-	57.6 (E)	64.5 (E)	68.0 (F)	77.1 (E)	77.0 (E)	31.0 (C)	71.0 (E)	54.8 (D)	54.8 (D)	158.8 (F)	32.7 (C)	-	38.6 (D)	38.8 (D)	366.9 (F)	98.1 (F)	46.6 (D)	27.2 (C)
McCarran Blvd/Longley Ln	Intersection	48.4 (D)												67.2 (E)											
	Approach	51.9 (D)			45.5 (D)			53.4 (D)			50.9 (D)			72.3 (E)			54.6 (D)			76.2 (E)			70.6 (E)		
	Movement	45.0 (D)	55.0 (D)	41.4 (D)	51.9 (D)	-	74.0 (E)	50.3 (D)	-	53.7 (D)	50.6 (D)	-	72.5 (E)	72.3 (E)	74.7 (E)	34.3 (C)	-	74.4 (E)	76.7 (E)	-	79.4 (E)	68.1 (E)	-		
McCarran Blvd/S. Virginia St	Intersection	48.3 (D)												56.7 (E)											
	Approach	54.4 (D)			45.2 (D)			46.8 (D)			47.0 (D)			55.7 (E)			51.4 (E)			59.3 (E)			60.2 (E)		
	Movement	60.1 (E)	50.5 (D)	-	64.8 (E)	49.2 (D)	20.9 (C)	61.5 (E)	45.1 (D)	55.6 (E)	40.6 (D)	-	70.9 (E)	42.7 (E)	-	78.4 (E)	61.9 (E)	29.6 (C)	76.0 (E)	55.8 (E)	63.6 (E)	58.3 (E)	-		
McCarran Blvd/Kietzke Ln	Intersection	51.5 (D)												63.0 (E)											
	Approach	58.5 (E)			22.3 (C)			60.6 (E)			59.3 (E)			48.4 (D)			71.2 (E)			72.7 (E)			47.8 (D)		
	Movement	63.8 (E)	57.8 (E)	-	32.0 (C)	21.0 (C)	-	65.7 (E)	37.7 (D)	-	60.4 (E)	58.4 (E)	-	76.5 (E)	41.2 (D)	-	74.0 (E)	71.0 (E)	-	73.4 (E)	69.4 (E)	-	42.7 (D)	73.3 (E)	-
McCarran Blvd/Lakeside Dr	Intersection	147.8 (F)												136.9 (F)											
	Approach	226.2 (F)			65.7 (E)			95.1 (F)			85.7 (F)			139.6 (F)			155.2 (F)			90.8 (F)			111.0 (F)		
	Movement	34.8 (C)	233.6 (F)	95.0 (F)	55.3 (E)	-	50.4 (D)	77.1 (E)	139.0 (F)	103.0 (F)	45.0 (D)	12.3 (B)	79.1 (E)	143.1 (F)	76.2 (E)	167.6 (F)	-	95.3 (F)	84.7 (F)	91.2 (F)	140.0 (F)	86.0 (F)	58.4 (E)		
McCarran Blvd/Plumas St	Intersection	42.0 (D)												39.9 (D)											
	Approach	45.0 (D)			22.9 (C)			69.8 (E)			50.9 (D)			36.4 (D)			32.0 (C)			70.2 (E)			54.8 (D)		
	Movement	83.1 (F)	43.0 (D)	45.5 (D)	77.1 (E)	15.4 (B)	14.0 (B)	69.6 (E)	68.8 (E)	71.2 (E)	52.2 (E)	48.1 (D)	82.2 (F)	35.3 (D)	35.3 (D)	52.6 (D)	35.2 (F)	0.1 (A)	83.6 (F)	63.2 (E)	64.7 (E)	59.5 (E)	47.9 (D)		
McCarran Blvd/Cashill Blvd	Intersection	222.4 (F)												116.6 (F)											
	Approach	79.4 (E)			57.2 (E)			191.0 (F)			336.8 (F)			58.7 (E)			85.2 (F)			159.3 (F)			80.7 (F)		
	Movement	112.9 (F)	35.2 (D)	59.0 (E)	81.1 (F)	58.3 (E)	28.1 (C)	414.0 (F)	29.0 (C)	28.9 (C)	79.4 (E)	331.3 (F)	355.1 (F)	69.2 (E)	41.8 (D)	51.2 (D)	91.8 (F)	88.9 (F)	68.5 (E)	358.1 (F)	109.2 (F)	113.0 (F)	95.4 (F)	77.8 (E)	
McCarran Blvd/Plumb Ln/Caughlin Pkwy	Intersection	71.8 (E)												93.5 (F)											
	Approach	67.1 (E)			59.0 (E)			63.3 (E)			77.3 (E)			47.1 (D)			106.2 (F)			120.6 (F)			71.4 (E)		
	Movement	78.1 (E)	46.7 (D)	45.4 (D)	56.0 (E)	50.9 (D)	63.4 (E)	73.1 (E)	62.7 (E)	62.2 (E)	46.2 (D)	79.1 (E)	87.4 (F)	48.8 (D)	44.7 (D)	44.3 (D)	44.7 (D)	50.8 (D)	135.1 (F)	88.2 (F)	118.6 (F)	125.6 (F)	236.9 (F)	29.8 (C)	30.6 (C)
McCarran Blvd/Mayberry Dr	Intersection	34.9 (C)												69.2 (E)											
	Approach	63.4 (E)			74.7 (E)			50.2 (D)			13.5 (B)			72.1 (E)			98.4 (F)			56.3 (E)			75.9 (E)		
	Movement	40.6 (D)	79.8 (E)	-	92.4 (F)	47.4 (D)	-	71.5 (E)	48.6 (D)	-	29.3 (C)	10.6 (B)	-	65.1 (E)	77.5 (E)	-	97.5 (F)	99.2 (F)	-	41.9 (D)	58.5 (F)	-	165.6 (F)	49.4 (D)	-
McCarran Blvd/W. 4th St	Intersection	159.2 (F)												140.3 (F)											
	Approach	67.1 (E)			76.6 (E)			79.8 (E)			236.1 (F)			155.4 (F)			105.9 (F)			110.6 (F)			188.4 (F)		
	Movement	70.7 (E)	61.4 (E)	-	89.0 (F)	61.6 (E)	55.4 (E)	61.9 (E)	81.5 (F)	-	65.0 (E)	277.1 (F)	6.5 (A)	189.2 (F)	77.0 (E)	-	139.6 (F)	81.2 (F)	42.9 (D)	59.4 (F)	121.0 (F)	-	86.5 (F)	216.3 (F)	17.9 (B)
McCarran Blvd/Mae Anne Ave	Intersection	41.2 (D)												68.8 (E)											
	Approach	64.0 (E)			46.7 (D)			38.2 (D)			33.7 (C)			107.2 (F)			95.2 (F)			46.3 (D)			71.8 (E)		
	Movement	64.3 (E)	59.9 (E)	-	41.7 (D)	57.4 (E)	-	65.2 (E)	27.8 (C)	-	56.4 (E)	33.1 (C)	-	115.5 (F)	80.5 (F)	-	93.1 (F)	98.2 (F)	-	62.6 (E)	39.0 (D)	-	87.5 (F)	70.2 (E)	-
McCarran Blvd/W. 7th St	Intersection	54.1 (D)												66.2 (E)											
	Approach	60.1 (E)			56.0 (E)			40.3 (D)			60.8 (E)			201.3 (F)			81.5 (F)			10.1 (B)			56.7 (E)		
	Movement	72.3 (E)	42.1 (D)	56.6 (E)	49.2 (D)	67.4 (E)	47.2 (D)	59.9 (E)	39.2 (D)	33.2 (C)	60.1 (E)	60.8 (E)	-	333.3 (F)	71.2 (E)	30.6 (C)	55.0 (E)	113.7 (F)	66.4 (E)	20.9 (C)	8.3 (A)	6.1 (A)	77.0 (E)	52.7 (D)	-
McCarran Blvd/Clear Acre Ln	Intersection	126.2 (F)												67.5 (E)											
	Approach	82.9 (F)			161.3 (F)			70.6 (E)			167.2 (F)			56.9 (E)			70.4 (E)			84.3 (F)			93.3 (F)		
	Movement	82.6 (F)	82.8 (F)	83.1 (F)	101.9 (F)	174.5 (F)	35.5 (D)	72.3 (E)	68.7 (E)	57.6 (E)	214.0 (F)	-	56.7 (E)	56.7 (E)	57.3 (E)	88.7 (F)	74.4 (E)	42.1 (D)	91.4 (F)	76.2 (E)	70.6 (E)	110.5 (F)	-		



## 7.4 2050 Build Results

Table 11 shows the overall intersection delay, LOS, and the list of improvements for 2050 Build alternative. Similar to 2050 No-Action, the signal splits were optimized to accommodate the increase in traffic volumes. The 2050 Build analysis show most of the intersections operate at desired LOS D/better. Five intersections operated with LOS E (at capacity) either during AM or PM peak-hour. Overall, majority of the intersections on McCarran Boulevard operated at an acceptable LOS.

**Table 11: 2050 Build Delay (LOS)**

Intersection	AM	PM	List of Improvements
McCarran Blvd/El Rancho Dr	42.5 (D)	52.0 (D)	None
McCarran Blvd/Sullivan Ln	37.5 (D)	29.6 (C)	None
McCarran Blvd/N. Rock Blvd	41.0 (D)	27.2 (C)	None
McCarran Blvd/Prater Wy	53.1 (D)	52.7 (D)	Southbound (1)
McCarran Blvd/Nichols Blvd	48.4 (D)	41.2 (D)	None
McCarran Blvd/Greg St	54.9 (D)	55.0 (D)	None
McCarran Blvd/Mira Loma Dr	51.2 (D)	51.4 (D)	Westbound (1)
McCarran Blvd/Longley Ln	48.4 (D)	67.2 (E)	None
McCarran Blvd/S. Virginia St	48.3 (D)	56.7 (E)	None
McCarran Blvd/Kietzke Ln	51.5 (D)	63.0 (E)	None
McCarran Blvd/Lakeside Dr	51.5 (D)	52.4 (D)	Eastbound (2), Westbound (2), and Southbound (1)
McCarran Blvd/Plumas St	42.1 (D)	40.6 (D)	None
McCarran Blvd/Cashill Blvd	52.2 (D)	50.5 (D)	Eastbound (1), Northbound (1&2), and Southbound (2)
McCarran Blvd/Plumb Ln/Caughlin Pkwy	40.1 (D)	51.4 (D)	Northbound (2) and Southbound (1&2)
McCarran Blvd/Mayberry Dr	29.1 (C)	54.8 (D)	Northbound (2) and Southbound (1&2)
McCarran Blvd/W. 4th St	52.3 (D)	49.4 (D)	Eastbound (1), Westbound (1), Northbound (2) and Southbound (2)
McCarran Blvd/Mae Anne Ave	40.5 (D)	65.0 (E)	Westbound (1)
McCarran Blvd/W. 7th St	49.0 (D)	51.6 (D)	Eastbound (1)
McCarran Blvd/Keystone Ave*			Developer proposed Traffic Signal
McCarran Blvd/Sutro St*			Northbound & Southbound (1, 3 & 4)
McCarran Blvd/Clear Acre Ln	58.9 (E)	54.6 (D)	Eastbound (2), Westbound (2), Northbound & Southbound with 1L-2T-1R
McCarran Blvd/Norhtowne Ln*			Increase left-turn storage (east & west)

Notes: (1) Add left-turn pocket, (2) Add one through lane, (3) Add right-turn pocket, (4) Add two through lanes

\* Improvements are listed from other studies/projects and not evaluated as part of this Corridor Study

Detailed results for the approach, individual movement, and LOS for the 2050 Build are included in Table

12. The results are as follows:

- In the north quadrant, half of the approaches and movements operate with LOS D/better. A quarter of the approaches and movements operate at capacity with LOS E, and the other quarter are failing with LOS F. But they are mostly comprised of the left-turn movements.
- In the east quadrant, less than half of the approaches and movements operate with LOS D/better. Most of the other approaches and movements operate at capacity with LOS E. Some movements operate with considerably higher delays with LOS F, but mostly comprised of the left-turn movements.
- In the south quadrant, one quarter of the approaches and movements operate with LOS D/better. Three quarters of the approaches and movements operate mostly at capacity with LOS E, and a couple of left-turn movements are failing with LOS F.
- In the west quadrant, half of the approaches and movements operate with LOS D/better. The other half of the approaches and movements operate at capacity with LOS E, and a couple of left-turn movements are failing with LOS F.

Table 12: 2050 Build Detail Results (Delay & LOS)

Intersection		AM Peak-Hour												PM Peak-Hour											
		Eastbound			Westbound			Northbound			Southbound			Eastbound			Westbound			Northbound			Southbound		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
McCarran Blvd/El Rancho Dr	Intersection	42.5 (D)												52.0 (D)											
	Approach	33.9 (C)			36.4 (D)			82.1 (F)			83.4 (F)			51.0 (D)			37.8 (D)			76.4 (E)			81.6 (F)		
	Movement	89.7 (F)	32.3 (C)	6.8 (A)	71.0 (E)	35.4 (F)	-	87.4 (F)	79.0 (E)	57.5 (E)	84.9 (F)	-	94.9 (F)	44.7 (D)	28.8 (C)	52.6 (D)	37.4 (D)	-	55.6 (E)	85.0 (F)	95.8 (F)	77.4 (E)	-		
McCarran Blvd/Sullivan Ln	Intersection	37.5 (D)												29.6 (C)											
	Approach	39.5 (D)			29.3 (C)			80.1 (F)			75.1 (E)			2.2 (A)			51.4 (D)			77.7 (E)			79.5 (E)		
	Movement	83.7 (F)	37.3 (D)	23.6 (C)	97.5 (F)	30.5 (C)	9.5 (A)	80.1 (F)	68.2 (E)	78.3 (E)	-	25.8 (C)	1.7 (A)	-	97.1 (F)	54.2 (D)	32.6 (C)	77.7 (E)	79.5 (E)	79.4 (E)	-				
McCarran Blvd/N. Rock Blvd	Intersection	41.0 (D)												27.2 (C)											
	Approach	38.5 (D)			40.9 (D)			59.5 (E)			52.6 (D)			17.8 (B)			17.8 (B)			87.4 (F)			48.2 (D)		
	Movement	-	39.4 (D)	26.4 (C)	78.0 (E)	38.0 (D)	64.3 (E)	55.0 (D)	52.6 (D)	-	18.1 (B)	7.7 (A)	79.6 (E)	13.6 (B)	78.1 (E)	92.6 (F)	48.2 (D)								
McCarran Blvd/Prater Wy	Intersection	53.1 (D)												52.7 (D)											
	Approach	65.1 (E)			54.9 (D)			52.5 (D)			48.1 (D)			60.1 (E)			57.6 (E)			49.4 (D)			46.4 (D)		
	Movement	54.2 (D)	67.4 (E)	55.1 (E)	54.7 (D)	-	75.8 (E)	45.0 (D)	-	60.1 (E)	45.3 (D)	-	49.3 (D)	63.9 (E)	51.4 (D)	59.8 (E)	-	76.3 (E)	42.3 (D)	-	77.0 (E)	32.0 (C)	-		
McCarran Blvd/Nichols Blvd	Intersection	48.4 (D)												41.2 (D)											
	Approach	76.9 (E)			67.9 (E)			34.3 (C)			46.3 (D)			79.9 (E)			74.0 (E)			27.5 (C)			45.4 (D)		
	Movement	68.9 (E)	80.6 (F)	68.5 (E)	54.2 (D)	105.8 (F)	32.0 (C)	32.7 (C)	105.3 (F)	44.4 (D)	48.1 (D)	81.2 (F)	78.5 (E)	75.4 (E)	65.0 (E)	48.7 (D)	25.7 (C)	27.5 (C)	100.3 (F)	40.4 (D)	42.2 (D)				
McCarran Blvd/Greg St	Intersection	54.9 (D)												55.0 (D)											
	Approach	72.2 (E)			68.0 (E)			25.8 (C)			57.8 (E)			71.7 (E)			70.5 (E)			61.6 (E)			28.0 (C)		
	Movement	76.4 (E)	69.6 (E)	69.7 (E)	75.8 (E)	59.9 (E)	-	36.8 (D)	22.8 (C)	-	76.8 (E)	54.3 (D)	65.5 (E)	76.9 (E)	77.5 (E)	66.6 (E)	74.4 (E)	-	70.0 (E)	60.6 (E)	-	38.4 (D)	26.5 (C)		
McCarran Blvd/Mira Loma Dr	Intersection	51.2 (D)												51.4 (D)											
	Approach	64.1 (D)			52.1 (D)			46.8 (D)			51.2 (D)			57.1 (E)			44.4 (D)			50.3 (D)			54.5 (D)		
	Movement	73.2 (E)	61.0 (E)	61.3 (E)	58.3 (E)	34.2 (C)	-	75.6 (E)	60.0 (E)	3.8 (A)	56.6 (E)	50.8 (D)	13.3 (B)	71.2 (E)	55.0 (D)	55.0 (D)	49.9 (D)	34.4 (C)	-	36.9 (D)	38.7 (D)	66.4 (F)	70.3 (E)	46.6 (D)	27.2 (C)
McCarran Blvd/Longley Ln	Intersection	48.4 (D)												67.2 (E)											
	Approach	51.9 (D)			45.5 (D)			53.4 (D)			50.9 (D)			72.3 (E)			54.6 (D)			76.2 (E)			70.6 (E)		
	Movement	45.0 (D)	55.0 (D)	41.4 (D)	51.9 (D)	-	74.0 (E)	50.3 (D)	-	53.7 (D)	50.6 (D)	-	72.5 (E)	72.3 (E)	74.7 (E)	34.3 (C)	-	74.4 (E)	76.7 (E)	-	79.4 (E)	68.1 (E)	-		
McCarran Blvd/S. Virginia St	Intersection	48.3 (D)												56.7 (E)											
	Approach	54.4 (D)			45.2 (D)			46.8 (D)			47.0 (D)			55.7 (E)			51.4 (D)			59.3 (E)			60.2 (E)		
	Movement	60.1 (E)	50.5 (D)	-	64.8 (E)	49.2 (D)	20.9 (C)	61.5 (E)	45.1 (D)	55.6 (E)	40.6 (D)	-	70.9 (E)	47.2 (D)	-	78.4 (E)	61.9 (E)	29.6 (C)	76.0 (E)	55.8 (E)	63.6 (E)	58.3 (E)	-		
McCarran Blvd/Kietzke Ln	Intersection	51.5 (D)												63.0 (E)											
	Approach	58.5 (E)			22.3 (C)			60.6 (E)			59.3 (E)			48.4 (D)			71.4 (E)			72.7 (E)			47.8 (D)		
	Movement	63.8 (E)	57.8 (E)	-	32.0 (C)	21.0 (C)	-	65.7 (E)	37.7 (D)	-	60.4 (E)	58.4 (E)	-	76.5 (E)	41.2 (D)	-	74.1 (E)	71.2 (E)	-	73.4 (E)	69.4 (E)	-	42.7 (D)	73.3 (E)	-
McCarran Blvd/Lakeside Dr	Intersection	51.5 (D)												52.4 (D)											
	Approach	36.9 (D)			64.1 (E)			63.7 (E)			65.0 (E)			56.1 (E)			48.6 (D)			56.8 (E)			54.8 (D)		
	Movement	24.7 (C)	37.4 (D)	78.5 (E)	59.0 (E)	-	47.2 (D)	61.2 (E)	76.2 (E)	74.2 (E)	47.7 (D)	8.6 (A)	79.0 (E)	54.8 (D)	76.2 (E)	44.2 (D)	-	60.8 (E)	53.8 (D)	54.5 (D)	45.0 (D)	68.9 (E)	54.9 (D)		
McCarran Blvd/Plumas St	Intersection	42.1 (D)												40.6 (D)											
	Approach	45.0 (D)			23.0 (C)			69.8 (E)			50.9 (D)			36.4 (D)			33.4 (C)			70.2 (E)			54.8 (D)		
	Movement	83.1 (F)	43.0 (D)	45.5 (D)	78.3 (E)	15.4 (B)	14.0 (B)	69.6 (E)	68.8 (E)	71.2 (E)	52.2 (E)	48.1 (D)	82.2 (F)	35.3 (D)	35.3 (D)	54.5 (D)	36.7 (F)	0.2 (A)	83.6 (F)	63.2 (E)	64.7 (E)	59.5 (E)	47.9 (D)		
McCarran Blvd/Cashill Blvd	Intersection	52.2 (D)												50.5 (D)											
	Approach	59.1 (E)			56.9 (E)			42.6 (D)			54.2 (D)			77.7 (E)			55.4 (E)			45.3 (D)			43.2 (D)		
	Movement	46.8 (D)	36.1 (D)	75.7 (E)	72.9 (E)	58.9 (E)	33.2 (C)	72.7 (E)	20.6 (C)	21.0 (C)	79.4 (E)	50.5 (D)	59.8 (E)	72.9 (E)	52.4 (D)	94.4 (F)	62.0 (E)	54.1 (D)	52.1 (D)	77.0 (E)	36.6 (D)	39.7 (D)	95.4 (F)	38.9 (D)	40.3 (D)
McCarran Blvd/Plumb Ln/Caughlin Pkwy	Intersection	40.1 (D)												51.4 (D)											
	Approach	67.1 (E)			59.0 (E)			51.7 (D)			29.5 (C)			44.7 (D)			67.8 (E)			55.0 (E)			44.6 (D)		
	Movement	78.1 (E)	46.7 (D)	45.4 (D)	56.0 (E)	50.9 (D)	63.4 (E)	73.1 (E)	49.0 (D)	51.7 (D)	30.9 (C)	28.3 (C)	31.0 (C)	46.5 (D)	42.1 (D)	41.7 (D)	40.8 (D)	46.4 (D)	79.6 (E)	70.2 (E)	51.9 (D)	58.8 (E)	70.0 (E)	37.7 (D)	39.3 (D)
McCarran Blvd/Mayberry Dr	Intersection	29.1 (C)												54.8 (D)											
	Approach	63.4 (E)			74.7 (E)			41.5 (D)			6.6 (A)			67.6 (E)			72.2 (E)			52.1 (D)			50.1 (D)		
	Movement	40.6 (D)	79.8 (E)	-	92.4 (F)	47.4 (D)	-	71.5 (E)	39.2 (D)	-	26.1 (C)	2.9 (A)	-	55.7 (E)	76.8 (E)	-	67.8 (E)	76.1 (E)	-	73.4 (E)	48.8 (D)	-	68.0 (E)	44.9 (D)	-
McCarran Blvd/W. 4th St	Intersection	52.3 (D)												49.4 (D)											
	Approach	61.1 (E)			59.1 (E)			44.4 (D)			54.3 (D)			75.7 (E)			62.5 (E)			39.8 (D)			50.6 (D)		
	Movement	61.0 (E)	61.4 (E)	-	58.8 (E)	61.3 (E)	55.2 (E)	70.7 (E)	42.0 (D)	-	56.3 (E)	60.2 (E)	6.1 (A)	75.5 (E)	76.2 (E)	-	64.1 (E)	71.4 (E)	42.1 (D)	76.2 (E)	32.4 (C)	-	79.1 (E)	51.9 (D)	18.8 (B)
McCarran Blvd/Mae Anne Ave	Intersection	40.5 (D)												65.0 (E)											
	Approach	64.0 (E)			46.0 (D)			38.2 (D)			32.3 (C)			77.2 (E)			71.3 (E)			54.4 (D)			72.9 (E)		
	Movement	64.3 (E)	59.9 (E)	-	40.6 (D)	57.4 (E)	-	65.2 (E)	27.8 (C)	-	55.9 (E)	31.7 (C)	-	78.3 (E)	73.6 (E)	-	51.8 (D)	98.2 (F)	-	77.9 (E)	43.8 (D)	-	79.4 (E)	72.2 (E)	-
McCarran Blvd/W. 7th St	Intersection	49.0 (D)												51.6 (D)											
	Approach	46.9 (D)			40.3 (D)			40.1 (D)			60.8 (E)			50.3 (D)			64.5 (E)			43.3 (D)			59.0 (E)		
	Movement	31.5 (C)	46.4 (D)	66.1 (E)	39.4 (D)	42.3 (D)	37.9 (D)	59.9 (E)	39.0 (D)	33.2 (C)	60.1 (E)	60.8 (E)	-	49.3 (D)	67.9 (E)	27.8 (C)	51.0 (D)	79.8 (E)	58.8 (E)	55.6 (E)	42.3 (D)	29.9 (C)	72.4 (E)	56.4 (E)	-
McCarran Blvd/Clear Acre Ln	Intersection	58.9 (E)												54.6 (D)											
	Approach	54.7 (D)			53.3 (D)			73.2 (E)			76.2 (E)			41.0 (D)			68.2 (E)			74.1 (E)			68.1 (E)		
	Movement	79.0 (E)	46.9 (D)	50.2 (D)	72.2 (E)	52.6 (D)	35.2 (D)	79.9 (E)	70.3 (E)	79.8 (E)	74.7 (E)	-	51.2 (D)	35.2 (D)	38.1 (D)	80.9 (F)	74.1 (E)	32.7 (C)	53.9 (D)	77.7 (E)	79.6 (E)	59.5 (E)	-		



## 8. SUMMARY AND CONCLUSION

Traffic analysis indicate that most project intersections will have higher delays and worsening LOS in 2050 No-Action compared to 2021 Existing Conditions, due to the increase in traffic volumes. The only exceptions is on McCarran Boulevard at El Rancho Drive, Sullivan Lane, and Rock Boulevard where the 2050 volumes are at or below the 2021 volumes, due to the US 395 and Pyramid Highway Connector project. As a result of signal optimization for future year analysis, few intersections results are within the acceptable delays and LOS, thus no geometric improvements are needed at those intersections.

Along the east quadrant of McCarran Boulevard corridor, between Prater Way and I-80 interchange, Synchro results yielded acceptable delays and LOS for McCarran Boulevard at Prater Way, and at Nichols Boulevard, which might not replicate the field observations. This could be due to other existing intersections along this section that was not evaluated as part of this project. Synchro modeling software is a macro-level analysis, and has its limitations with analyzing closely spaced signals with an interchange. It is recommended that a microsimulation software (Vissim or Corsim) be utilized for this section of McCarran Boulevard to identify the true congestion and delays effects.

Due to the opening of Southeast Connector project, the traffic volumes shifted to the intersection of McCarran Boulevard and Mira Loma Drive, specifically, the westbound left and the northbound right turns. To improve the delay and LOS at this intersection, adding one additional westbound left-turn lane and making the northbound right-turn lane an overlap phase is recommended.

Along the south quadrant of McCarran Boulevard, most of the intersection delays and LOS can be improved by modifying/optimizing the signal timing and phasing. The one exception is at McCarran Boulevard and Lakeside Drive, where the improvements of adding one through lane for the eastbound and westbound directions, and one additional southbound left-turn lane is required.

Along the west quadrant of McCarran Boulevard, McCarran Boulevard and Cashill Boulevard will require one additional left-turn lane for eastbound and northbound direction, with one additional through lane for the northbound and southbound directions. The one additional through lane will be tapered back to the existing configuration approximately 1,000 feet downstream of the intersection. McCarran Boulevard at Plumb Lane and Mayberry Drive will require one additional left-turn lane in the southbound, and one additional through lane for the northbound and southbound directions. At McCarran Boulevard and West 4<sup>th</sup> Street, one additional left-turn lane for eastbound and westbound directions, with one additional through lane for the northbound and southbound direction is required to reduce the delays and improve the intersection LOS. McCarran Boulevard at Mae Anne Avenue and West 7<sup>th</sup> Street will require one additional left-turn lane for eastbound and westbound direction.

At McCarran Boulevard and Clear Acre Lane, the recommended improvements are to add one additional through lane along the eastbound and westbound directions, and the Clear Acre Lane improvements will be one left-turn lane, two (2) through lanes, and one right-turn lane.

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## 9. LIST OF APPENDICES

- Appendix A – Traffic Volume Balance (McCarran at Sullivan Lane and Kietzke Lane)
- Appendix B – 2021 Existing Conditions Synchro Output
- Appendix C – 2025 No-Action Synchro Output
- Appendix D – 2050 No-Action Synchro Output
- Appendix E – 2050 Build Synchro Output

# **Appendix A**

## **Traffic Volume Balance**

### **McCarran at Sullivan Lane and Kietzke Lane**



**SULLIVAN Lane @ McCARRAN Blvd. Traffic Volume Balancing Assumption:**

1. Due to ongoing construction, the traffic counts for north approach was not collected.
2. 2019 TRINA count was provided for the roadway (not for the north approach). For the directional traffic volume, the split was assumed to be in half, and grew the AM and PM peak volumes to 2021.
3. El Rancho Dr. and Rock Blvd. intersections were used as the upstream and downstream intersections.
4. The AM peak volume reasonably matched with the TRINA count for upstream, and downstream intersections. This was not the case for PM peak.
5. Engineering judgement was used in balancing the PM peak volume, and to match the TRINA count

**KIETZKE Lane @ McCARRAN Blvd. Traffic Volume Balancing Assumption:**

1. The only available intersection traffic count was from the RTC Washoe, for Black Friday and Super Saturday in November/December, 2019.
2. TRINA data was available for 2021 for the south approach, and 2016 traffic volume for the north approach. The AM and PM were forecasted to 2021.
3. Lakeside Dr. and South Virginia St. were used as the upstream and downstream for the east/west directions. The TRINA counts were used as the upstream and downstream for the north/south directions.
4. Engineering judgement was used in balancing for both AM and PM peaks, but some approaches were still off by approx. 100 vehicles.

11/22/21  
By Hong Hong

AM  $760/2 = 380$   
PM  $800/2 = 400$  } 2019 TRINA counts  
Grow to 2021  
THE COUNTS ARE FOR  
THE ROADWAY SO WE  
SPLITTED  $1/2$  FOR DIR.

WB APPROACH  
① RANCHO  
←  
1574  
(1302)

236  
(279)  
100  
(50)  
47  
(71)

1302  
(1211)  
←  
SULLIVAN WB TURN

SULLIVAN EB TURN  
→  
1119  
(1599)

36  
(47)  
41  
(97)  
15  
(37)

EB APPROACH  
② ROCK  
→  
1181  
(1707)

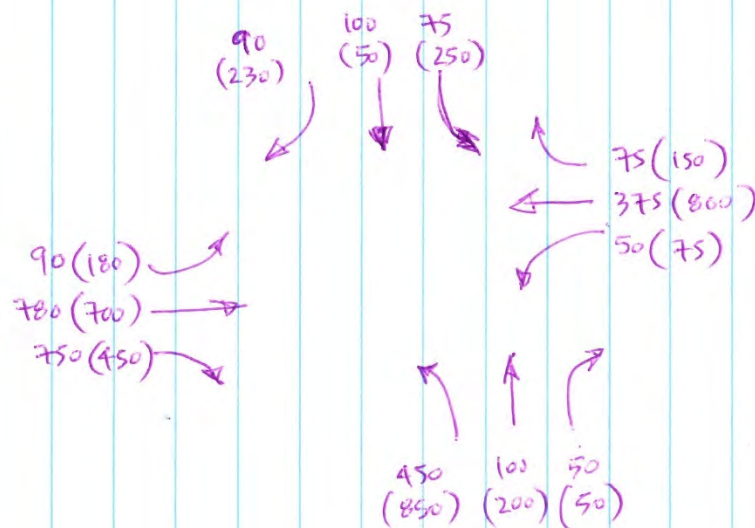
SULLIVAN 2021  
TRAFFIC BALANCING  
ASSUMPTION

1/22/21  
By HONG HONG

831  
(2110)  
←  
RTE 2019  
COUNTS  
Grow To 2021

→  
1728  
(1298)

265  
(530) ↓ TRINA  
2016  
Grow  
To 2021 ↑ 265  
(530)



KIETZKE 2021  
TRAFFIC BALANCING  
ASSUMPTION

497  
(915)  
←  
SST 2021  
FIELD COUNTS

→  
807  
(1169)

USING ENGR. JUDGEMENT  
SOME APPROACHES VOLUMES  
ARE OFF BY 100 VEHICLES

800  
(900) ↓ TRINA  
2021 ↑ 600  
(1000)



























# **Appendix B**

## **2021 Existing Conditions Synchro Output**



























# HCM 6th Signalized Intersection Summary

## 1: El Rancho Dr & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	675	71	43	1505	9	52	61	28	15	248	167
Future Volume (veh/h)	45	675	71	43	1505	9	52	61	28	15	248	167
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	49	742	58	47	1654	0	57	67	28	16	273	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	64	1509	673	82	1566		73	86	36	235	301	
Arrive On Green	0.04	0.42	0.42	0.09	0.88	0.00	0.04	0.07	0.07	0.13	0.16	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1253	523	1781	1870	1585
Grp Volume(v), veh/h	49	742	58	47	1654	0	57	0	95	16	273	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1776	1781	1870	1585
Q Serve(g_s), s	4.1	22.8	1.7	3.8	66.1	0.0	4.8	0.0	7.9	1.2	21.5	0.0
Cycle Q Clear(g_c), s	4.1	22.8	1.7	3.8	66.1	0.0	4.8	0.0	7.9	1.2	21.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	64	1509	673	82	1566		73	0	122	235	301	
V/C Ratio(X)	0.77	0.49	0.09	0.58	1.06		0.78	0.00	0.78	0.07	0.91	
Avail Cap(c_a), veh/h	233	1509	673	229	1566		184	0	359	235	355	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.63	0.63	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	71.7	31.4	6.7	66.7	8.9	0.0	71.2	0.0	68.7	57.0	61.8	0.0
Incr Delay (d2), s/veh	17.6	1.1	0.3	4.0	35.0	0.0	15.9	0.0	10.1	0.1	23.7	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(95%),veh/ln	3.9	14.9	2.2	3.2	16.2	0.0	4.5	0.0	7.1	1.0	17.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.3	32.5	7.0	70.7	43.9	0.0	87.2	0.0	78.9	57.1	85.6	0.0
LnGrp LOS	F	C	A	E	F		F	A	E	E	F	
Approach Vol, veh/h		849			1701	A		152			289	A
Approach Delay, s/veh		34.1			44.6			82.0			84.0	
Approach LOS		C			D			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.3	15.0	13.5	70.0	10.7	30.6	10.8	72.7				
Change Period (Y+Rc), s	* 6.5	* 4.7	6.6	* 6.3	4.5	6.5	5.4	6.6				
Max Green Setting (Gmax), s	* 15	* 30	19.3	* 64	15.5	28.5	19.6	63.4				
Max Q Clear Time (g_c+I1), s	3.2	9.9	5.8	24.8	6.8	23.5	6.1	68.1				
Green Ext Time (p_c), s	0.0	0.4	0.1	5.5	0.1	0.6	0.1	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			47.3									
HCM 6th LOS			D									





















## HCM 6th Signalized Intersection Summary

### 2: Sullivan Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	65	1119	36	17	1302	188	36	41	15	47	100	236
Future Volume (veh/h)	65	1119	36	17	1302	188	36	41	15	47	100	236
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	72	1243	30	19	1447	157	40	46	16	52	111	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	1443	644	26	1296	578	50	57	20	133	140	
Arrive On Green	0.05	0.41	0.41	0.03	0.73	0.73	0.07	0.07	0.07	0.07	0.07	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	700	805	280	1781	1870	1585
Grp Volume(v), veh/h	72	1243	30	19	1447	157	102	0	0	52	111	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1785	0	0	1781	1870	1585
Q Serve(g_s), s	6.0	47.9	1.7	1.6	54.7	5.0	8.4	0.0	0.0	4.2	8.8	0.0
Cycle Q Clear(g_c), s	6.0	47.9	1.7	1.6	54.7	5.0	8.4	0.0	0.0	4.2	8.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.39		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	91	1443	644	26	1296	578	127	0	0	133	140	
V/C Ratio(X)	0.79	0.86	0.05	0.73	1.12	0.27	0.80	0.00	0.00	0.39	0.79	
Avail Cap(c_a), veh/h	277	1443	644	226	1296	578	278	0	0	278	292	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	0.72	0.72	0.72	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	70.3	40.7	27.0	72.5	20.3	13.6	68.6	0.0	0.0	66.1	68.2	0.0
Incr Delay (d2), s/veh	12.8	5.2	0.0	24.4	60.7	0.8	11.2	0.0	0.0	1.8	9.6	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(95%),veh/ln	5.4	28.5	1.2	1.6	29.4	3.1	7.7	0.0	0.0	3.5	8.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.1	45.8	27.0	96.9	81.0	14.4	79.8	0.0	0.0	68.0	77.8	0.0
LnGrp LOS	F	D	C	F	F	B	E	A	A	E	E	
Approach Vol, veh/h		1345			1623			102			163	A
Approach Delay, s/veh		47.4			74.8			79.8			74.7	
Approach LOS		D			E			E			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.3	8.2	67.2		17.8	14.4	61.0				
Change Period (Y+Rc), s		6.6	6.0	6.3		6.6	* 6.7	* 6.3				
Max Green Setting (Gmax), s		23.4	19.0	58.7		23.4	* 23	* 55				
Max Q Clear Time (g_c+I1), s		10.4	3.6	49.9		10.8	8.0	56.7				
Green Ext Time (p_c), s		0.4	0.0	5.1		0.5	0.1	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			63.5									
HCM 6th LOS			E									

# HCM 6th Signalized Intersection Summary
























## 3: Rock Blvd & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1067	114	128	1633	0	79	1	83	2	5	0
Future Volume (veh/h)	0	1067	114	128	1633	0	79	1	83	2	5	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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1226	98	147	1877	0	91	1	95	2	6	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1	1506	672	172	1995	0	157	1	285	36	91	0
Arrive On Green	0.00	0.42	0.42	0.10	0.56	0.00	0.18	0.18	0.18	0.18	0.18	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3647	0	606	8	1585	33	507	0
Grp Volume(v), veh/h	0	1226	98	147	1877	0	92	0	95	8	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	0	614	0	1585	541	0	0
Q Serve(g_s), s	0.0	45.5	5.7	12.2	73.7	0.0	0.0	0.0	7.8	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	45.5	5.7	12.2	73.7	0.0	24.9	0.0	7.8	25.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	0.99		1.00	0.25		0.00
Lane Grp Cap(c), veh/h	1	1506	672	172	1995	0	158	0	285	127	0	0
V/C Ratio(X)	0.00	0.81	0.15	0.85	0.94	0.00	0.58	0.00	0.33	0.06	0.00	0.00
Avail Cap(c_a), veh/h	222	1639	731	403	1995	0	187	0	317	165	0	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)	0.00	0.81	0.81	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	38.0	26.5	66.7	30.6	0.0	60.6	0.0	53.6	51.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.5	0.1	11.2	10.3	0.0	3.3	0.0	0.7	0.2	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(95%),veh/ln	0.0	26.2	3.9	10.0	41.4	0.0	6.5	0.0	5.7	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	40.5	26.6	77.8	40.9	0.0	63.9	0.0	54.3	52.1	0.0	0.0
LnGrp LOS	A	D	C	E	D	A	E	A	D	D	A	A
Approach Vol, veh/h	1324			2024			187			8		
Approach Delay, s/veh	39.5			43.6			59.1			52.1		
Approach LOS	D			D			E			D		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	32.0		20.6	69.4		32.0		0.0	90.0			
Change Period (Y+Rc), s	* 5		* 6.1	5.8		* 5		6.3	5.8			
Max Green Setting (Gmax), s	* 30		* 34	69.2		* 30		18.7	84.2			
Max Q Clear Time (g_c+I1), s	26.9		14.2	47.5		27.0		0.0	75.7			
Green Ext Time (p_c), s	0.2		0.3	9.0		0.0		0.0	6.9			
Intersection Summary												
HCM 6th Ctrl Delay	42.9											
HCM 6th LOS	D											


























# HCM 6th Signalized Intersection Summary

## 4: McCarran Blvd & E Prater Way































												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	294	164	164	252	116	99	307	117	183	782	120
Future Volume (veh/h)	63	294	164	164	252	116	99	307	117	183	782	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	70	327	0	182	280	0	110	341	0	203	869	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	426		263	634		158	1007		227	1286	
Arrive On Green	0.05	0.12	0.00	0.10	0.18	0.00	0.05	0.28	0.00	0.13	0.36	0.00
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	70	327	0	182	280	0	110	341	0	203	869	0
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.1	13.4	0.0	13.0	10.5	0.0	4.7	11.4	0.0	16.8	31.0	0.0
Cycle Q Clear(g_c), s	5.1	13.4	0.0	13.0	10.5	0.0	4.7	11.4	0.0	16.8	31.0	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	426		263	634		158	1007		227	1286	
V/C Ratio(X)	0.28	0.77		0.69	0.44		0.70	0.34		0.89	0.68	
Avail Cap(c_a), veh/h	399	765		405	945		438	1007		309	1286	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.4	64.0	0.0	49.7	54.9	0.0	70.5	42.6	0.0	64.4	40.4	0.0
Incr Delay (d2), s/veh	0.6	2.9	0.0	3.2	0.5	0.0	5.4	0.9	0.0	21.3	2.9	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(95%),veh/ln	4.3	10.4	0.0	10.1	8.4	0.0	3.9	8.8	0.0	13.8	20.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.0	66.9	0.0	52.9	55.4	0.0	76.0	43.5	0.0	85.7	43.3	0.0
LnGrp LOS	D	E		D	E		E	D		F	D	
Approach Vol, veh/h		397	A		462	A		451	A		1072	A
Approach Delay, s/veh		64.8			54.4			51.4			51.3	
Approach LOS		E			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.1	48.0	21.1	23.1	12.9	60.3	12.3	31.9				
Change Period (Y+Rc), s	6.0	5.5	* 5.7	* 5.1	6.0	* 6	5.5	5.1				
Max Green Setting (Gmax), s	26.0	42.5	* 27	* 32	19.0	* 50	19.5	39.9				
Max Q Clear Time (g_c+I1), s	18.8	13.4	15.0	15.4	6.7	33.0	7.1	12.5				
Green Ext Time (p_c), s	0.3	2.1	0.4	1.9	0.2	5.3	0.1	1.8				
Intersection Summary												
HCM 6th Ctrl Delay			54.2									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary 5: McCarran Blvd & Nichols Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	19	55	396	21	19	16	502	77	15	1344	47
Future Volume (veh/h)	31	19	55	396	21	19	16	502	77	15	1344	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	33	20	53	442	0	20	17	540	74	16	1445	46
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	26	70	515	0	229	24	1805	244	23	2014	64
Arrive On Green	0.06	0.06	0.06	0.14	0.00	0.14	0.01	0.40	0.40	0.01	0.40	0.40
Sat Flow, veh/h	1781	453	1201	3563	0	1585	1781	4550	614	1781	5083	162
Grp Volume(v), veh/h	33	0	73	442	0	20	17	402	212	16	968	523
Grp Sat Flow(s),veh/h/ln	1781	0	1654	1781	0	1585	1781	1702	1760	1781	1702	1841
Q Serve(g_s), s	2.7	0.0	6.5	18.2	0.0	1.6	1.4	12.1	12.4	1.3	36.0	36.0
Cycle Q Clear(g_c), s	2.7	0.0	6.5	18.2	0.0	1.6	1.4	12.1	12.4	1.3	36.0	36.0
Prop In Lane	1.00		0.73	1.00		1.00	1.00		0.35	1.00		0.09
Lane Grp Cap(c), veh/h	103	0	96	515	0	229	24	1350	698	23	1348	729
V/C Ratio(X)	0.32	0.00	0.76	0.86	0.00	0.09	0.71	0.30	0.30	0.69	0.72	0.72
Avail Cap(c_a), veh/h	234	0	217	824	0	367	224	1350	698	165	1348	729
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	67.8	0.0	69.6	62.7	0.0	55.6	73.7	31.0	31.0	73.7	38.2	38.2
Incr Delay (d2), s/veh	1.7	0.0	11.6	5.3	0.0	0.2	31.2	0.6	1.1	30.9	3.3	6.0
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(95%),veh/ln	2.3	0.0	5.6	13.5	0.0	1.2	1.5	8.8	9.3	1.5	21.8	24.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.5	0.0	81.2	68.0	0.0	55.8	104.9	31.5	32.2	104.7	41.5	44.2
LnGrp LOS	E	A	F	E	A	E	F	C	C	F	D	D
Approach Vol, veh/h	106			462			631			1507		
Approach Delay, s/veh	77.5			67.5			33.7			43.1		
Approach LOS	E			E			C			D		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	8.0	65.0	27.0		8.1	64.9	14.0					
Change Period (Y+Rc), s	6.1	5.5	* 5.3		6.1	5.5	5.3					
Max Green Setting (Gmax), s	13.9	59.5	* 35		18.9	54.5	19.7					
Max Q Clear Time (g_c+I1), s	3.3	14.4	20.2		3.4	38.0	8.5					
Green Ext Time (p_c), s	0.0	4.1	1.5		0.0	8.9	0.3					
Intersection Summary												
HCM 6th Ctrl Delay	46.4											
HCM 6th LOS	D											






















# HCM 6th Signalized Intersection Summary

## 6: McCarran Blvd & E Greg St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 			  			  	
Traffic Volume (veh/h)	74	117	10	299	288	110	109	402	196	202	1077	100
Future Volume (veh/h)	74	117	10	299	288	110	109	402	196	202	1077	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	80	127	10	325	313	0	118	437	0	220	1171	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	5	5	5	5	5	5
Cap, veh/h	124	267	21	375	530		655	2567		246	1394	
Arrive On Green	0.04	0.08	0.08	0.11	0.15	0.00	0.38	0.51	0.00	0.14	0.28	0.00
Sat Flow, veh/h	3456	3340	260	3456	3554	1585	1739	4985	1547	1739	5149	0
Grp Volume(v), veh/h	80	67	70	325	313	0	118	437	0	220	1171	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1823	1728	1777	1585	1739	1662	1547	1739	1662	0
Q Serve(g_s), s	3.4	5.4	5.5	13.9	12.3	0.0	6.8	7.0	0.0	18.7	33.2	0.0
Cycle Q Clear(g_c), s	3.4	5.4	5.5	13.9	12.3	0.0	6.8	7.0	0.0	18.7	33.2	0.0
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	124	142	146	375	530		655	2567		246	1394	
V/C Ratio(X)	0.65	0.47	0.48	0.87	0.59		0.18	0.17		0.90	0.84	
Avail Cap(c_a), veh/h	445	448	460	445	896		655	2567		447	1682	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	71.4	66.0	66.0	65.8	59.5	0.0	31.3	19.3	0.0	63.3	50.9	0.0
Incr Delay (d2), s/veh	5.5	2.4	2.4	14.6	1.0	0.0	0.1	0.1	0.0	11.0	3.4	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(95%),veh/ln	2.9	4.6	4.8	11.2	9.5	0.0	5.2	4.8	0.0	13.8	20.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.9	68.4	68.5	80.4	60.6	0.0	31.4	19.5	0.0	74.3	54.3	0.0
LnGrp LOS	E	E	E	F	E		C	B		E	D	
Approach Vol, veh/h		217			638	A		555	A		1391	A
Approach Delay, s/veh		71.5			70.7			22.0			57.4	
Approach LOS		E			E			C			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.6	83.2	22.0	17.2	62.5	48.4	11.1	28.1				
Change Period (Y+Rc), s	6.4	* 6	* 5.7	* 5.2	6.0	* 6.4	* 5.7	* 5.7				
Max Green Setting (Gmax), s	38.6	* 31	* 19	* 38	19.0	* 51	* 19	* 38				
Max Q Clear Time (g_c+l1), s	20.7	9.0	15.9	7.5	8.8	35.2	5.4	14.3				
Green Ext Time (p_c), s	0.5	2.6	0.4	0.7	0.2	6.8	0.2	1.9				
Intersection Summary												
HCM 6th Ctrl Delay			54.5									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary
























## 7: McCarran Blvd & Mira Loma Dr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	92	9	562	194	216	30	381	181	174	513	24
Future Volume (veh/h)	32	92	9	562	194	216	30	381	181	174	513	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	39	111	10	677	234	0	36	459	164	210	618	22
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	54	169	15	705	790		62	1134	352	270	1317	409
Arrive On Green	0.03	0.05	0.05	0.40	0.42	0.00	0.04	0.23	0.23	0.08	0.26	0.26
Sat Flow, veh/h	1781	3300	294	1781	1870	1585	1739	4985	1547	3374	4985	1547
Grp Volume(v), veh/h	39	59	62	677	234	0	36	459	164	210	618	22
Grp Sat Flow(s),veh/h/ln	1781	1777	1817	1781	1870	1585	1739	1662	1547	1687	1662	1547
Q Serve(g_s), s	2.6	3.9	4.0	44.4	9.9	0.0	2.4	9.4	3.1	7.3	12.5	1.0
Cycle Q Clear(g_c), s	2.6	3.9	4.0	44.4	9.9	0.0	2.4	9.4	3.1	7.3	12.5	1.0
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	54	91	93	705	790		62	1134	352	270	1317	409
V/C Ratio(X)	0.72	0.65	0.67	0.96	0.30		0.58	0.40	0.47	0.78	0.47	0.05
Avail Cap(c_a), veh/h	304	130	133	705	790		148	1134	352	410	1317	409
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.7	55.9	55.9	35.3	22.9	0.0	56.9	39.4	3.2	54.1	37.1	18.9
Incr Delay (d2), s/veh	16.5	7.6	7.9	25.4	0.2	0.0	8.1	1.1	4.4	5.2	1.2	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(95%),veh/ln	2.6	3.5	3.7	31.8	7.9	0.0	2.1	6.9	7.6	5.8	8.8	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.2	63.5	63.8	60.8	23.1	0.0	65.1	40.5	7.6	59.3	38.3	19.2
LnGrp LOS	E	E	E	E	C		E	D	A	E	D	B
Approach Vol, veh/h	160			911			A			659		
Approach Delay, s/veh	66.3			51.1			33.7			43.0		
Approach LOS	E			D			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	34.0	52.7	11.3	11.0	38.0	8.1	55.9				
Change Period (Y+Rc), s	5.4	6.7	* 5.2	* 5.2	6.7	* 6.3	4.5	* 5.2				
Max Green Setting (Gmax), s	14.6	27.3	* 48	* 8.8	10.2	* 32	20.5	* 36				
Max Q Clear Time (g_c+I1), s	9.3	11.4	46.4	6.0	4.4	14.5	4.6	11.9				
Green Ext Time (p_c), s	0.3	3.0	0.3	0.1	0.0	3.6	0.0	1.3				
Intersection Summary												
HCM 6th Ctrl Delay	44.9											
HCM 6th LOS	D											





































# HCM 6th Signalized Intersection Summary

## 8: Longley Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	189	97	862	556	29	51	344	368	37	455	117
Future Volume (veh/h)	83	189	97	862	556	29	51	344	368	37	455	117
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	91	208	0	947	611	0	56	378	0	41	500	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	143	290		1123	963		72	685		53	620	
Arrive On Green	0.04	0.08	0.00	0.23	0.28	0.00	0.04	0.19	0.00	0.03	0.17	0.00
Sat Flow, veh/h	3374	3561	0	4904	3469	1547	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	91	208	0	947	611	0	56	378	0	41	500	0
Grp Sat Flow(s),veh/h/ln	1687	1735	0	1635	1735	1547	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	3.2	7.0	0.0	22.1	18.5	0.0	3.7	11.5	0.0	2.7	16.2	0.0
Cycle Q Clear(g_c), s	3.2	7.0	0.0	22.1	18.5	0.0	3.7	11.5	0.0	2.7	16.2	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	143	290		1123	963		72	685		53	620	
V/C Ratio(X)	0.63	0.72		0.84	0.63		0.78	0.55		0.78	0.81	
Avail Cap(c_a), veh/h	540	847		1123	963		122	897		187	1028	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.5	53.6	0.0	44.2	38.0	0.0	57.0	43.8	0.0	57.8	47.6	0.0
Incr Delay (d2), s/veh	4.6	3.3	0.0	6.0	3.2	0.0	16.1	0.7	0.0	21.2	2.5	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(95%),veh/ln	2.5	5.6	0.0	14.2	12.6	0.0	3.5	8.6	0.0	2.7	11.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.1	56.9	0.0	50.2	41.2	0.0	73.1	44.4	0.0	79.0	50.1	0.0
LnGrp LOS	E	E		D	D		E	D		E	D	
Approach Vol, veh/h	299		A	1558		A	434		A	541		A
Approach Delay, s/veh	58.2			46.7			48.1			52.3		
Approach LOS	E			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	29.8	34.2	16.7	11.6	27.2	10.9	40.0				
Change Period (Y+Rc), s	5.4	6.7	6.7	* 6.7	6.7	* 6.3	5.8	6.7				
Max Green Setting (Gmax), s	12.6	30.3	23.2	* 29	8.2	* 35	19.2	33.3				
Max Q Clear Time (g_c+I1), s	4.7	13.5	24.1	9.0	5.7	18.2	5.2	20.5				
Green Ext Time (p_c), s	0.0	1.9	0.0	1.0	0.0	2.7	0.2	2.9				
Intersection Summary												
HCM 6th Ctrl Delay			49.2									
HCM 6th LOS			D									

































# HCM 6th Signalized Intersection Summary

## 9: S Virginia St & McCarran Blvd
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 	  		  	 	
Traffic Volume (veh/h)	268	396	143	84	376	209	57	498	92	331	452	64
Future Volume (veh/h)	268	396	143	84	376	209	57	498	92	331	452	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811	1811	1811	1811	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	288	426	0	90	443	143	61	535	0	356	486	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	6	6	6	2	2	2	2	2	2
Cap, veh/h	363	800		113	648	183	104	1271		468	952	
Arrive On Green	0.04	0.05	0.00	0.07	0.12	0.12	0.03	0.20	0.00	0.09	0.27	0.00
Sat Flow, veh/h	3346	4944	1535	1725	5433	1535	3456	6696	0	5023	3554	1585
Grp Volume(v), veh/h	288	426	0	90	443	143	61	535	0	356	486	0
Grp Sat Flow(s),veh/h/ln	1673	1648	1535	1725	1811	1535	1728	1609	0	1674	1777	1585
Q Serve(g_s), s	10.3	10.1	0.0	6.2	9.4	5.0	2.1	8.7	0.0	8.3	13.9	0.0
Cycle Q Clear(g_c), s	10.3	10.1	0.0	6.2	9.4	5.0	2.1	8.7	0.0	8.3	13.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	363	800		113	648	183	104	1271		468	952	
V/C Ratio(X)	0.79	0.53		0.79	0.68	0.78	0.58	0.42		0.76	0.51	
Avail Cap(c_a), veh/h	686	1389		282	1299	367	420	1271		820	952	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.5	52.4	0.0	55.3	50.7	10.8	57.4	42.1	0.0	53.1	37.2	0.0
Incr Delay (d2), s/veh	3.7	0.5	0.0	11.7	1.3	7.1	5.1	1.0	0.0	2.6	2.0	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(95%),veh/ln	8.1	7.7	0.0	5.4	7.6	7.5	1.7	6.2	0.0	6.3	10.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.2	52.9	0.0	67.0	52.0	17.8	62.5	43.2	0.0	55.7	39.2	0.0
LnGrp LOS	E	D		E	D	B	E	D		E	D	
Approach Vol, veh/h	714		A	676		596		A	842		A	
Approach Delay, s/veh	55.8			46.7		45.2			46.2			
Approach LOS	E			D		D			D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.5	30.0	13.3	25.7	9.0	38.5	18.4	20.6				
Change Period (Y+Rc), s	6.3	* 6.3	5.4	6.3	5.4	6.3	5.4	6.3				
Max Green Setting (Gmax), s	19.6	* 24	19.6	33.7	14.6	28.7	24.6	28.7				
Max Q Clear Time (g_c+I1), s	10.3	10.7	8.2	12.1	4.1	15.9	12.3	11.4				
Green Ext Time (p_c), s	0.9	2.7	0.1	2.5	0.1	2.3	0.8	2.9				
Intersection Summary												
HCM 6th Ctrl Delay			48.5									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary

## 10: Kietzke Ln & McCarran Blvd
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 		 	 	
Traffic Volume (veh/h)	90	780	750	50	375	75	450	100	50	75	100	90
Future Volume (veh/h)	90	780	750	50	375	75	450	100	50	75	100	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	100	867	0	56	417	0	500	111	0	83	111	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	1221		595	2605		573	658		135	181	
Arrive On Green	0.07	0.24	0.00	0.44	0.68	0.00	0.17	0.19	0.00	0.04	0.05	0.00
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	100	867	0	56	417	0	500	111	0	83	111	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	6.6	18.7	0.0	2.2	3.5	0.0	16.9	3.2	0.0	2.8	3.7	0.0
Cycle Q Clear(g_c), s	6.6	18.7	0.0	2.2	3.5	0.0	16.9	3.2	0.0	2.8	3.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	126	1221		595	2605		573	658		135	181	
V/C Ratio(X)	0.80	0.71		0.09	0.16		0.87	0.17		0.62	0.61	
Avail Cap(c_a), veh/h	291	1221		595	2605		708	850		564	702	
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.81	0.81	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.9	41.8	0.0	22.8	10.0	0.0	48.8	41.1	0.0	56.8	55.8	0.0
Incr Delay (d2), s/veh	10.8	3.5	0.0	0.1	0.1	0.0	9.9	0.1	0.0	4.5	3.3	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(95%),veh/ln	5.9	12.6	0.0	1.6	2.3	0.0	12.5	2.5	0.0	2.3	3.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.7	45.3	0.0	22.9	10.1	0.0	58.8	41.2	0.0	61.3	59.1	0.0
LnGrp LOS	E	D		C	B		E	D		E	E	
Approach Vol, veh/h		967	A		473	A		611	A		194	A
Approach Delay, s/veh		47.5			11.6			55.6			60.0	
Approach LOS		D			B			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.1	28.5	46.4	35.0	26.2	12.4	13.9	67.5				
Change Period (Y+Rc), s	5.4	6.3	6.3	* 6.3	6.3	* 6.3	5.4	6.3				
Max Green Setting (Gmax), s	19.6	28.7	19.6	* 29	24.6	* 24	19.6	28.7				
Max Q Clear Time (g_c+I1), s	4.8	5.2	4.2	20.7	18.9	5.7	8.6	5.5				
Green Ext Time (p_c), s	0.2	0.5	0.1	3.3	0.9	0.5	0.1	2.5				
Intersection Summary												
HCM 6th Ctrl Delay			43.2									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary 11: Lakeside Dr & McCarran Blvd

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	1232	80	176	499	156	92	129	194	302	89	29
Future Volume (veh/h)	48	1232	80	176	499	156	92	129	194	302	89	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	52	1325	0	189	537	0	99	139	156	325	96	23
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	733	1686		213	649		302	212	179	401	419	355
Arrive On Green	0.82	0.95	0.00	0.12	0.18	0.00	0.06	0.11	0.11	0.17	0.22	0.22
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	52	1325	0	189	537	0	99	139	156	325	96	23
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.8	11.3	0.0	15.7	21.8	0.0	7.3	10.7	14.5	23.5	6.3	0.7
Cycle Q Clear(g_c), s	0.8	11.3	0.0	15.7	21.8	0.0	7.3	10.7	14.5	23.5	6.3	0.7
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	733	1686		213	649		302	212	179	401	419	355
V/C Ratio(X)	0.07	0.79		0.89	0.83		0.33	0.66	0.87	0.81	0.23	0.06
Avail Cap(c_a), veh/h	733	1686		303	1552		435	256	217	456	419	355
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.9	2.3	0.0	65.0	59.0	0.0	54.0	63.7	65.4	45.8	47.6	7.1
Incr Delay (d2), s/veh	0.0	3.0	0.0	19.6	2.8	0.0	0.6	4.5	26.0	9.5	0.3	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(95%),veh/ln	0.6	3.5	0.0	12.8	15.1	0.0	6.0	9.1	11.4	17.0	5.4	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.9	5.3	0.0	84.6	61.8	0.0	54.7	68.2	91.5	55.3	47.9	7.1
LnGrp LOS	A	A		F	E		D	E	F	E	D	A
Approach Vol, veh/h	1377		A	726		A	394		444			
Approach Delay, s/veh	5.4			67.7			74.0		51.2			
Approach LOS	A			E			E		D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.4	21.5	22.5	75.7	13.8	38.1	66.2	31.9				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	30.5	20.5	25.5	55.5	20.5	30.5	15.5	65.5				
Max Q Clear Time (g_c+I1), s	25.5	16.5	17.7	13.3	9.3	8.3	2.8	23.8				
Green Ext Time (p_c), s	0.5	0.5	0.3	12.1	0.2	0.5	0.1	3.6				
Intersection Summary												
HCM 6th Ctrl Delay	36.9											
HCM 6th LOS	D											



























# HCM 6th Signalized Intersection Summary 12: Plumas St & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	1013	114	79	437	152	58	71	89	251	100	21
Future Volume (veh/h)	21	1013	114	79	437	152	58	71	89	251	100	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	23	1126	115	88	486	127	64	79	75	279	111	21
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	44	2048	209	110	2341	1044	134	127	108	475	289	55
Arrive On Green	0.02	0.63	0.63	0.06	0.66	0.66	0.07	0.07	0.07	0.09	0.19	0.19
Sat Flow, veh/h	1781	3255	332	1781	3554	1585	1258	1870	1585	3456	1529	289
Grp Volume(v), veh/h	23	614	627	88	486	127	64	79	75	279	0	132
Grp Sat Flow(s),veh/h/ln	1781	1777	1811	1781	1777	1585	1258	1870	1585	1728	0	1818
Q Serve(g_s), s	1.9	29.4	29.5	7.3	8.1	4.5	7.5	6.2	6.9	10.9	0.0	9.5
Cycle Q Clear(g_c), s	1.9	29.4	29.5	7.3	8.1	4.5	7.5	6.2	6.9	10.9	0.0	9.5
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	44	1118	1139	110	2341	1044	134	127	108	475	0	344
V/C Ratio(X)	0.52	0.55	0.55	0.80	0.21	0.12	0.48	0.62	0.70	0.59	0.00	0.38
Avail Cap(c_a), veh/h	162	1118	1139	412	2341	1044	255	308	261	748	0	663
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	0.91	0.91	0.91	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.3	15.8	15.8	69.5	10.1	9.5	68.6	68.0	68.4	56.1	0.0	53.2
Incr Delay (d2), s/veh	9.3	1.9	1.9	11.4	0.0	0.0	2.6	4.9	7.8	1.2	0.0	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(95%),veh/ln	1.8	17.4	17.7	6.6	5.4	2.7	4.5	5.6	5.4	8.5	0.0	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.6	17.7	17.7	80.9	10.2	9.5	71.3	72.9	76.2	57.3	0.0	53.9
LnGrp LOS	F	B	B	F	B	A	E	E	E	E	A	D
Approach Vol, veh/h	1264			701			218			411		
Approach Delay, s/veh	18.9			18.9			73.5			56.2		
Approach LOS	B			B			E			E		
Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	18.2	15.5	14.6	101.8		33.7	10.1	106.2				
Change Period (Y+Rc), s	4.5	* 5.3	* 5.3	7.4		* 5.3	6.4	* 7.4				
Max Green Setting (Gmax), s	25.5	* 25	* 35	42.6		* 55	13.6	* 64				
Max Q Clear Time (g_c+I1), s	12.9	9.5	9.3	31.5		11.5	3.9	10.1				
Green Ext Time (p_c), s	0.8	0.7	0.2	5.6		0.8	0.0	3.6				
Intersection Summary												
HCM 6th Ctrl Delay	29.4											
HCM 6th LOS	C											

























# HCM 6th Signalized Intersection Summary 13: McCarran Blvd & Caughlin Pkwy/Cashil Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	47	270	31	93	38	242	315	20	23	709	213
Future Volume (veh/h)	185	47	270	31	93	38	242	315	20	23	709	213
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	231	59	253	39	116	36	302	394	23	29	886	240
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	340	288	50	198	167	246	1352	79	37	776	210
Arrive On Green	0.10	0.18	0.18	0.03	0.11	0.11	0.14	0.40	0.40	0.02	0.28	0.28
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3413	199	1781	2765	748
Grp Volume(v), veh/h	231	59	253	39	116	36	302	205	212	29	569	557
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1835	1781	1777	1736
Q Serve(g_s), s	12.5	3.2	18.6	2.6	7.1	2.5	16.6	9.4	9.5	1.9	33.7	33.7
Cycle Q Clear(g_c), s	12.5	3.2	18.6	2.6	7.1	2.5	16.6	9.4	9.5	1.9	33.7	33.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.11	1.00		0.43
Lane Grp Cap(c), veh/h	186	340	288	50	198	167	246	704	727	37	499	487
V/C Ratio(X)	1.24	0.17	0.88	0.78	0.59	0.21	1.23	0.29	0.29	0.79	1.14	1.14
Avail Cap(c_a), veh/h	186	652	552	96	566	479	246	704	727	94	499	487
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	53.8	41.5	47.8	58.0	51.2	49.1	51.7	24.7	24.8	58.5	43.1	43.2
Incr Delay (d2), s/veh	147.2	0.2	8.4	22.7	2.8	0.6	132.0	1.0	1.0	29.9	85.0	86.2
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(95%),veh/ln	20.8	2.7	12.7	2.7	6.3	1.9	24.8	7.2	7.4	2.1	36.9	36.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	200.9	41.7	56.2	80.7	53.9	49.7	183.7	25.8	25.8	88.4	128.1	129.3
LnGrp LOS	F	D	E	F	D	D	F	C	C	F	F	F
Approach Vol, veh/h		543			191			719			1155	
Approach Delay, s/veh		116.2			58.6			92.1			127.7	
Approach LOS		F			E			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.2	53.8	7.9	27.0	22.0	40.0	17.0	17.9				
Change Period (Y+Rc), s	5.7	* 6.3	4.5	* 5.2	5.4	6.3	4.5	* 5.2				
Max Green Setting (Gmax), s	6.3	* 44	6.5	* 42	16.6	33.7	12.5	* 36				
Max Q Clear Time (g_c+I1), s	3.9	11.5	4.6	20.6	18.6	35.7	14.5	9.1				
Green Ext Time (p_c), s	0.0	2.2	0.0	1.2	0.0	0.0	0.0	0.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			110.4									
HCM 6th LOS			F									

# HCM 6th Signalized Intersection Summary 14: McCarran Blvd & Caughlin Pkwy/Plumb Ln

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	47	25	44	24	97	42	479	17	215	1011	103
Future Volume (veh/h)	125	47	25	44	24	97	42	479	17	215	1011	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	145	55	26	51	28	85	49	557	18	250	1176	108
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	94	79	266	134	114	63	984	32	280	1305	120
Arrive On Green	0.10	0.05	0.05	0.12	0.07	0.07	0.04	0.28	0.28	0.16	0.40	0.40
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3513	113	1781	3291	302
Grp Volume(v), veh/h	145	55	26	51	28	85	49	281	294	250	634	650
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1850	1781	1777	1816
Q Serve(g_s), s	9.6	3.5	1.2	0.0	1.7	6.3	3.3	16.3	16.3	16.5	40.2	40.4
Cycle Q Clear(g_c), s	9.6	3.5	1.2	0.0	1.7	6.3	3.3	16.3	16.3	16.5	40.2	40.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.17
Lane Grp Cap(c), veh/h	233	94	79	266	134	114	63	498	518	280	705	720
V/C Ratio(X)	0.62	0.59	0.33	0.19	0.21	0.75	0.78	0.57	0.57	0.89	0.90	0.90
Avail Cap(c_a), veh/h	305	469	398	266	396	336	131	498	518	362	705	720
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	53.2	55.8	22.7	46.9	52.5	54.6	57.4	37.0	37.0	49.6	34.0	34.0
Incr Delay (d2), s/veh	2.7	5.8	2.4	0.3	0.8	9.3	18.0	1.5	1.4	19.7	16.7	16.7
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(95%),veh/ln	8.0	3.2	1.5	2.5	1.5	5.1	3.1	11.3	11.7	13.4	26.6	27.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.9	61.6	25.1	47.3	53.2	63.9	75.4	38.4	38.4	69.3	50.7	50.7
LnGrp LOS	E	E	C	D	D	E	E	D	D	E	D	D
Approach Vol, veh/h	226			164			624			1534		
Approach Delay, s/veh	53.7			56.9			41.3			53.7		
Approach LOS	D			E			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.5	40.8	18.5	10.9	10.5	54.8	16.1	13.2				
Change Period (Y+Rc), s	5.6	7.2	4.6	* 4.9	6.2	* 7.2	4.5	4.6				
Max Green Setting (Gmax), s	24.4	31.8	11.5	* 30	8.8	* 48	16.5	25.4				
Max Q Clear Time (g_c+I1), s	18.5	18.3	2.0	5.5	5.3	42.4	11.6	8.3				
Green Ext Time (p_c), s	0.3	2.5	0.1	0.3	0.0	3.2	0.1	0.3				
Intersection Summary												
HCM 6th Ctrl Delay	50.9											
HCM 6th LOS	D											

























# HCM 6th Signalized Intersection Summary 15: McCarran Blvd & Mayberry Dr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	165	179	142	93	243	37	478	212	186	1003	66
Future Volume (veh/h)	118	165	179	142	93	243	37	478	212	186	1003	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	137	192	0	165	108	0	43	556	0	216	1166	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	314	226		257	253		79	974		243	1273	
Arrive On Green	0.08	0.12	0.00	0.10	0.14	0.00	0.04	0.27	0.00	0.27	0.72	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	137	192	0	165	108	0	43	556	0	216	1166	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.0	12.1	0.0	9.6	6.4	0.0	2.8	16.2	0.0	14.0	32.5	0.0
Cycle Q Clear(g_c), s	8.0	12.1	0.0	9.6	6.4	0.0	2.8	16.2	0.0	14.0	32.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	314	226		257	253		79	974		243	1273	
V/C Ratio(X)	0.44	0.85		0.64	0.43		0.55	0.57		0.89	0.92	
Avail Cap(c_a), veh/h	393	302		310	301		281	974		430	1273	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.78	0.78	0.00
Uniform Delay (d), s/veh	41.3	51.7	0.0	41.2	47.6	0.0	56.2	37.5	0.0	42.7	15.5	0.0
Incr Delay (d2), s/veh	1.0	15.8	0.0	3.3	1.1	0.0	5.8	2.4	0.0	8.5	9.6	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(95%),veh/ln	6.4	10.8	0.0	7.8	5.4	0.0	2.5	11.4	0.0	9.1	10.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.2	67.5	0.0	44.5	48.7	0.0	62.0	39.9	0.0	51.2	25.1	0.0
LnGrp LOS	D	E		D	D		E	D		D	C	
Approach Vol, veh/h		329	A		273	A		599	A		1382	A
Approach Delay, s/veh		57.0			46.1			41.5			29.2	
Approach LOS		E			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.4	40.0	16.5	20.2	12.4	50.0	14.7	21.9				
Change Period (Y+Rc), s	6.0	7.1	* 4.8	* 5.7	7.1	* 7	* 4.7	5.7				
Max Green Setting (Gmax), s	29.0	32.9	* 15	* 19	18.9	* 43	* 15	19.3				
Max Q Clear Time (g_c+I1), s	16.0	18.2	11.6	14.1	4.8	34.5	10.0	8.4				
Green Ext Time (p_c), s	0.4	2.8	0.1	0.4	0.0	4.6	0.1	0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			37.4									
HCM 6th LOS			D									



























# HCM 6th Signalized Intersection Summary

## 16: McCarran Blvd & 4th St

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	76	114	124	62	39	58	646	138	70	998	166
Future Volume (veh/h)	121	76	114	124	62	39	58	646	138	70	998	166
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	138	86	0	141	70	33	66	734	0	80	1134	142
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	167	122		168	105	89	85	1031		102	1100	491
Arrive On Green	0.09	0.07	0.00	0.09	0.06	0.06	0.05	0.29	0.00	0.06	0.31	0.31
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	138	86	0	141	70	33	66	734	0	80	1134	142
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	9.1	5.4	0.0	9.3	4.4	2.4	4.4	22.2	0.0	5.3	37.1	2.3
Cycle Q Clear(g_c), s	9.1	5.4	0.0	9.3	4.4	2.4	4.4	22.2	0.0	5.3	37.1	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	167	122		168	105	89	85	1031		102	1100	491
V/C Ratio(X)	0.83	0.71		0.84	0.67	0.37	0.77	0.71		0.78	1.03	0.29
Avail Cap(c_a), veh/h	297	503		223	418	354	223	1031		220	1100	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.89	0.89	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	55.0	0.0	53.4	55.5	54.6	56.5	38.1	0.0	55.8	41.4	2.6
Incr Delay (d2), s/veh	10.0	7.3	0.0	18.7	7.1	2.5	12.4	3.7	0.0	12.2	35.4	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.9	4.9	0.0	8.6	4.0	1.8	4.0	14.6	0.0	4.8	28.8	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.5	62.2	0.0	72.1	62.6	57.1	68.9	41.9	0.0	68.0	76.9	4.1
LnGrp LOS	E	E		E	E	E	E	D		E	F	A
Approach Vol, veh/h		224	A		244			800	A		1356	
Approach Delay, s/veh		63.0			67.3			44.1			68.7	
Approach LOS		E			E			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.1	41.0	16.3	13.5	10.7	44.3	16.9	12.9				
Change Period (Y+Rc), s	7.2	* 6.2	5.0	5.7	5.0	7.2	5.7	* 6.2				
Max Green Setting (Gmax), s	14.8	* 35	15.0	32.3	15.0	34.8	20.0	* 27				
Max Q Clear Time (g_c+I1), s	7.3	24.2	11.3	7.4	6.4	39.1	11.1	6.4				
Green Ext Time (p_c), s	0.1	3.3	0.1	0.3	0.1	0.0	0.2	0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			60.6									
HCM 6th LOS			E									

# HCM 6th Signalized Intersection Summary 17: McCarran Blvd & Mae Anne Ave/Driveway






















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	30	307	43	20	8	183	475	38	24	998	219
Future Volume (veh/h)	380	30	307	43	20	8	183	475	38	24	998	219
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	418	33	0	47	22	0	201	522	0	26	1097	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	501	94		240	90		267	1430		60	1234	
Arrive On Green	0.14	0.05	0.00	0.13	0.05	0.00	0.08	0.28	0.00	0.07	0.48	0.00
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	3456	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	418	33	0	47	22	0	201	522	0	26	1097	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1728	1702	1585	1781	1702	1585
Q Serve(g_s), s	14.1	2.0	0.0	2.8	1.4	0.0	6.8	9.8	0.0	1.7	23.4	0.0
Cycle Q Clear(g_c), s	14.1	2.0	0.0	2.8	1.4	0.0	6.8	9.8	0.0	1.7	23.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	501	94		240	90		267	1430		60	1234	
V/C Ratio(X)	0.83	0.35		0.20	0.24		0.75	0.37		0.43	0.89	
Avail Cap(c_a), veh/h	870	502		260	312		559	1430		205	1234	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.88	0.88	0.00
Uniform Delay (d), s/veh	49.9	55.1	0.0	46.1	55.0	0.0	54.3	34.6	0.0	54.8	29.5	0.0
Incr Delay (d2), s/veh	3.7	2.3	0.0	0.4	1.4	0.0	4.3	0.7	0.0	4.2	8.8	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(95%),veh/ln	10.4	1.8	0.0	2.3	1.2	0.0	5.5	7.2	0.0	1.4	11.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.6	57.4	0.0	46.5	56.4	0.0	58.6	35.4	0.0	59.1	38.3	0.0
LnGrp LOS	D	E		D	E		E	D		E	D	
Approach Vol, veh/h		451	A		69	A		723	A		1123	A
Approach Delay, s/veh		53.9			49.7			41.8			38.8	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.3	40.8	21.2	11.8	14.9	36.2	22.2	10.8				
Change Period (Y+Rc), s	6.2	* 7.2	5.0	* 5.8	5.6	7.2	* 4.8	5.0				
Max Green Setting (Gmax), s	13.8	* 34	17.5	* 32	19.4	27.8	* 30	20.0				
Max Q Clear Time (g_c+I1), s	3.7	11.8	4.8	4.0	8.8	25.4	16.1	3.4				
Green Ext Time (p_c), s	0.0	3.1	0.1	0.1	0.4	1.5	1.3	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			42.9									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary

## 18: McCarran Blvd & 7th St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	253	133	275	174	144	71	60	631	101	81	876	175
Future Volume (veh/h)	253	133	275	174	144	71	60	631	101	81	876	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	284	149	231	196	162	60	67	709	85	91	984	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	363	278	235	340	202	171	129	1424	442	144	1404	
Arrive On Green	0.15	0.15	0.15	0.11	0.11	0.11	0.04	0.28	0.28	0.04	0.28	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	284	149	231	196	162	60	67	709	85	91	984	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	16.4	8.8	10.0	11.5	10.2	4.2	2.3	14.0	4.9	3.1	20.8	0.0
Cycle Q Clear(g_c), s	16.4	8.8	10.0	11.5	10.2	4.2	2.3	14.0	4.9	3.1	20.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	363	278	235	340	202	171	129	1424	442	144	1404	
V/C Ratio(X)	0.78	0.54	0.98	0.58	0.80	0.35	0.52	0.50	0.19	0.63	0.70	
Avail Cap(c_a), veh/h	388	380	322	438	390	330	559	1642	510	403	1404	
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	0.91	0.91	0.91	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.9	47.3	16.6	40.8	52.3	49.6	56.7	36.2	33.0	56.6	39.1	0.0
Incr Delay (d2), s/veh	9.5	1.6	39.4	1.5	7.3	1.2	3.0	0.2	0.2	4.6	2.9	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(95%),veh/ln	12.6	7.6	10.2	8.9	8.8	3.1	1.8	9.3	3.4	2.5	13.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.3	48.9	56.0	42.4	59.6	50.9	59.7	36.5	33.2	61.2	42.0	0.0
LnGrp LOS	D	D	E	D	E	D	E	D	C	E	D	
Approach Vol, veh/h		664			418			861			1075	A
Approach Delay, s/veh		50.7			50.2			37.9			43.6	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	39.9	18.4	23.4	10.9	40.0	23.3	18.5				
Change Period (Y+Rc), s	6.0	6.4	4.6	5.6	6.4	* 7	* 4.7	* 5.6				
Max Green Setting (Gmax), s	14.0	38.6	20.4	24.4	19.4	* 33	* 20	* 25				
Max Q Clear Time (g_c+I1), s	5.1	16.0	13.5	12.0	4.3	22.8	18.4	12.2				
Green Ext Time (p_c), s	0.1	4.7	0.3	1.3	0.1	4.3	0.2	0.8				
Intersection Summary												
HCM 6th Ctrl Delay			44.5									
HCM 6th LOS			D									

























# HCM 6th Signalized Intersection Summary 19: Clear Acre Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	636	69	79	838	67	56	133	121	111	258	365
Future Volume (veh/h)	192	636	69	79	838	67	56	133	121	111	258	365
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	229	757	74	94	998	60	67	158	0	132	307	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	1158	113	115	1222	545	85	217		325	342	
Arrive On Green	0.08	0.35	0.35	0.06	0.34	0.34	0.08	0.08	0.00	0.18	0.18	0.00
Sat Flow, veh/h	3456	3270	320	1781	3554	1585	1016	2674	0	1781	1870	1585
Grp Volume(v), veh/h	229	411	420	94	998	60	120	105	0	132	307	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1813	1781	1777	1585	1820	1777	0	1781	1870	1585
Q Serve(g_s), s	9.8	29.2	29.2	7.8	38.4	3.9	9.7	8.6	0.0	9.8	24.1	0.0
Cycle Q Clear(g_c), s	9.8	29.2	29.2	7.8	38.4	3.9	9.7	8.6	0.0	9.8	24.1	0.0
Prop In Lane	1.00		0.18	1.00		1.00	0.56		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	281	629	642	115	1222	545	153	149		325	342	
V/C Ratio(X)	0.82	0.65	0.65	0.82	0.82	0.11	0.78	0.70		0.41	0.90	
Avail Cap(c_a), veh/h	440	629	642	169	1222	545	300	293		403	423	
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.8	40.7	40.7	69.3	44.9	33.6	67.4	66.9	0.0	54.1	59.9	0.0
Incr Delay (d2), s/veh	6.5	5.2	5.1	17.6	6.1	0.4	8.5	5.9	0.0	0.8	18.9	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(95%),veh/ln	8.0	19.4	19.7	7.3	24.4	2.8	8.5	7.5	0.0	8.0	19.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.3	46.0	45.9	86.9	51.0	34.0	75.9	72.8	0.0	54.9	78.8	0.0
LnGrp LOS	E	D	D	F	D	C	E	E		D	E	
Approach Vol, veh/h		1060			1152			225	A		439	A
Approach Delay, s/veh		52.0			53.0			74.4			71.6	
Approach LOS		D			D			E			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.9	16.5	60.0		33.5	18.1	58.4				
Change Period (Y+Rc), s		* 5.3	6.8	* 6.9		6.1	5.9	6.8				
Max Green Setting (Gmax), s		* 25	14.2	* 53		33.9	19.1	48.2				
Max Q Clear Time (g_c+I1), s		11.7	9.8	31.2		26.1	11.8	40.4				
Green Ext Time (p_c), s		0.9	0.1	4.8		1.3	0.4	3.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				57.2								
HCM 6th LOS				E								

























# HCM 6th Signalized Intersection Summary

## 1: El Rancho Dr & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	1020	57	33	1190	63	173	352	76	34	112	107
Future Volume (veh/h)	170	1020	57	33	1190	63	173	352	76	34	112	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	177	1062	43	34	1240	0	180	367	71	35	117	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	202	1272	567	368	1625		350	392	76	45	146	
Arrive On Green	0.11	0.36	0.36	0.21	0.46	0.00	0.20	0.26	0.26	0.03	0.08	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1523	295	1781	1870	1585
Grp Volume(v), veh/h	177	1062	43	34	1240	0	180	0	438	35	117	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1817	1781	1870	1585
Q Serve(g_s), s	14.7	41.0	2.7	2.3	43.6	0.0	13.6	0.0	35.4	2.9	9.2	0.0
Cycle Q Clear(g_c), s	14.7	41.0	2.7	2.3	43.6	0.0	13.6	0.0	35.4	2.9	9.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	202	1272	567	368	1625		350	0	467	45	146	
V/C Ratio(X)	0.88	0.83	0.08	0.09	0.76		0.51	0.00	0.94	0.77	0.80	
Avail Cap(c_a), veh/h	352	1272	567	368	1625		350	0	512	210	418	
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	0.64	0.64	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.5	44.1	31.8	48.1	33.9	0.0	53.9	0.0	54.5	72.7	68.0	0.0
Incr Delay (d2), s/veh	11.6	6.6	0.3	0.1	2.2	0.0	1.3	0.0	24.0	23.8	9.5	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(95%),veh/ln	11.6	25.8	1.9	1.9	24.3	0.0	10.4	0.0	26.5	2.9	8.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.0	50.7	32.0	48.2	36.2	0.0	55.2	0.0	78.5	96.5	77.5	0.0
LnGrp LOS	E	D	C	D	D		E	A	E	F	E	
Approach Vol, veh/h		1282			1274	A		618			152	A
Approach Delay, s/veh		53.7			36.5			71.7			81.9	
Approach LOS		D			D			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	43.3	37.6	60.0	34.1	18.2	22.4	75.2				
Change Period (Y+Rc), s	* 5.3	* 4.7	6.6	* 6.3	4.7	* 6.5	5.4	6.6				
Max Green Setting (Gmax), s	* 18	* 42	14.3	* 54	25.5	* 34	29.6	38.4				
Max Q Clear Time (g_c+I1), s	4.9	37.4	4.3	43.0	15.6	11.2	16.7	45.6				
Green Ext Time (p_c), s	0.0	1.2	0.0	5.1	0.3	0.5	0.4	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			51.7									
HCM 6th LOS			D									





















## HCM 6th Signalized Intersection Summary

### 2: Sullivan Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	1599	39	11	1211	276	47	97	37	71	50	279
Future Volume (veh/h)	38	1599	39	11	1211	276	47	97	37	71	50	279
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	40	1683	30	12	1275	218	49	102	35	64	68	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	491	2293	1023	19	1368	610	57	118	40	91	95	
Arrive On Green	0.55	1.00	1.00	0.01	0.39	0.39	0.12	0.12	0.12	0.05	0.05	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	471	980	336	1781	1870	1585
Grp Volume(v), veh/h	40	1683	30	12	1275	218	186	0	0	64	68	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1786	0	0	1781	1870	1585
Q Serve(g_s), s	1.6	0.0	0.0	1.0	51.6	14.7	15.3	0.0	0.0	5.3	5.4	0.0
Cycle Q Clear(g_c), s	1.6	0.0	0.0	1.0	51.6	14.7	15.3	0.0	0.0	5.3	5.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.26		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	491	2293	1023	19	1368	610	215	0	0	91	95	
V/C Ratio(X)	0.08	0.73	0.03	0.64	0.93	0.36	0.86	0.00	0.00	0.70	0.71	
Avail Cap(c_a), veh/h	491	2293	1023	166	1414	631	338	0	0	219	229	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.73	0.75	0.75	0.75	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.8	0.0	0.0	73.9	44.2	32.9	64.8	0.0	0.0	70.1	70.1	0.0
Incr Delay (d2), s/veh	0.1	1.6	0.0	24.3	8.8	0.3	12.9	0.0	0.0	9.5	9.4	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(95%),veh/ln	1.2	0.9	0.0	1.0	30.5	9.0	12.4	0.0	0.0	4.8	5.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.8	1.6	0.0	98.3	53.1	33.1	77.7	0.0	0.0	79.6	79.5	0.0
LnGrp LOS	C	A	A	F	D	C	E	A	A	E	E	
Approach Vol, veh/h		1753			1505			186			132	A
Approach Delay, s/veh		2.1			50.5			77.7			79.6	
Approach LOS		A			D			E			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.7	7.6	103.5		14.3	48.0	63.1				
Change Period (Y+Rc), s		6.6	6.0	* 6.7		6.6	6.7	* 5.3				
Max Green Setting (Gmax), s		28.4	14.0	* 64		18.4	18.3	* 60				
Max Q Clear Time (g_c+I1), s		17.3	3.0	2.0		7.4	3.6	53.6				
Green Ext Time (p_c), s		0.7	0.0	20.5		0.3	0.0	4.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				29.3								
HCM 6th LOS				C								
























# HCM 6th Signalized Intersection Summary

## 3: Rock Blvd & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1642	65	98	1427	0	172	4	320	3	2	2
Future Volume (veh/h)	0	1642	65	98	1427	0	172	4	320	3	2	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1747	52	104	1518	0	183	4	340	3	2	2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1	2042	911	129	2444	0	247	4	381	43	28	15
Arrive On Green	0.00	0.76	0.76	0.07	0.69	0.00	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1781	3554	1585	1781	3647	0	831	18	1585	34	117	60
Grp Volume(v), veh/h	0	1747	52	104	1518	0	187	0	340	7	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	0	849	0	1585	212	0	0
Q Serve(g_s), s	0.0	50.2	1.2	8.6	34.9	0.0	0.0	0.0	31.1	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	50.2	1.2	8.6	34.9	0.0	33.9	0.0	31.1	34.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	0.98		1.00	0.43		0.29
Lane Grp Cap(c), veh/h	1	2042	911	129	2444	0	252	0	381	85	0	0
V/C Ratio(X)	0.00	0.86	0.06	0.81	0.62	0.00	0.74	0.00	0.89	0.08	0.00	0.00
Avail Cap(c_a), veh/h	210	2042	911	331	2444	0	252	0	381	88	0	0
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.56	0.56	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	13.4	7.7	68.6	12.8	0.0	56.2	0.0	55.1	46.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.8	0.1	11.3	0.5	0.0	11.3	0.0	22.3	0.4	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(95%),veh/ln	0.0	18.1	0.8	7.7	18.6	0.0	12.4	0.0	20.8	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.2	7.7	79.9	13.3	0.0	67.4	0.0	77.4	47.1	0.0	0.0
LnGrp LOS	A	B	A	E	B	A	E	A	E	D	A	A
Approach Vol, veh/h	1799			1622			527			7		
Approach Delay, s/veh	16.0			17.5			73.9			47.1		
Approach LOS	B			B			E			D		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	41.1		16.9	92.0		41.1		0.0	108.9			
Change Period (Y+Rc), s	* 5		* 6.1	5.8		* 5		6.3	5.8			
Max Green Setting (Gmax), s	* 36		* 28	69.2		* 36		17.7	79.2			
Max Q Clear Time (g_c+I1), s	35.9		10.6	52.2		36.1		0.0	36.9			
Green Ext Time (p_c), s	0.0		0.2	11.4		0.0		0.0	15.1			
Intersection Summary												
HCM 6th Ctrl Delay	24.4											
HCM 6th LOS	C											












# HCM 6th Signalized Intersection Summary

## 4: McCarran Blvd & E Prater Way

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	206	588	171	139	386	228	273	1039	319	213	452	106
Future Volume (veh/h)	206	588	171	139	386	228	273	1039	319	213	452	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	212	606	0	143	398	0	281	1071	0	220	466	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	303	702		213	599		333	1585		245	1731	
Arrive On Green	0.11	0.20	0.00	0.08	0.17	0.00	0.10	0.45	0.00	0.14	0.49	0.00
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	212	606	0	143	398	0	281	1071	0	220	466	0
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	15.4	26.4	0.0	10.5	16.8	0.0	12.8	38.2	0.0	19.4	12.4	0.0
Cycle Q Clear(g_c), s	15.4	26.4	0.0	10.5	16.8	0.0	12.8	38.2	0.0	19.4	12.4	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	303	702		213	599		333	1585		245	1731	
V/C Ratio(X)	0.70	0.86		0.67	0.66		0.84	0.68		0.90	0.27	
Avail Cap(c_a), veh/h	325	895		342	997		518	1585		434	1731	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.6	62.1	0.0	51.0	62.3	0.0	71.1	35.1	0.0	67.9	24.2	0.0
Incr Delay (d2), s/veh	6.0	7.2	0.0	3.6	1.3	0.0	7.4	2.3	0.0	11.8	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(95%),veh/ln	11.9	18.5	0.0	8.6	12.2	0.0	10.0	23.6	0.0	14.7	9.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.6	69.3	0.0	54.6	63.5	0.0	78.5	37.5	0.0	79.7	24.6	0.0
LnGrp LOS	D	E		D	E		E	D		E	C	
Approach Vol, veh/h		818	A		541	A		1352	A		686	A
Approach Delay, s/veh		65.2			61.2			46.0			42.3	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	28.0	76.9	18.4	36.7	21.4	83.4	23.1	32.1				
Change Period (Y+Rc), s	6.0	5.5	* 5.7	* 5.1	6.0	5.5	5.5	5.1				
Max Green Setting (Gmax), s	39.0	34.5	* 24	* 40	24.0	49.5	19.5	44.9				
Max Q Clear Time (g_c+I1), s	21.4	40.2	12.5	28.4	14.8	14.4	17.4	18.8				
Green Ext Time (p_c), s	0.5	0.0	0.3	3.2	0.6	3.1	0.1	2.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			52.3									
HCM 6th LOS			D									


























# HCM 6th Signalized Intersection Summary 5: McCarran Blvd & Nichols Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	65	43	273	53	48	92	1615	138	90	1058	72
Future Volume (veh/h)	113	65	43	273	53	48	92	1615	138	90	1058	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	118	68	41	323	0	50	96	1682	129	94	1102	68
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	90	54	386	0	172	477	2916	223	114	1982	122
Arrive On Green	0.08	0.08	0.08	0.11	0.00	0.11	0.27	0.60	0.60	0.06	0.40	0.40
Sat Flow, veh/h	1781	1093	659	3563	0	1585	1781	4837	370	1781	4917	303
Grp Volume(v), veh/h	118	0	109	323	0	50	96	1183	628	94	763	407
Grp Sat Flow(s),veh/h/ln	1781	0	1752	1781	0	1585	1781	1702	1804	1781	1702	1816
Q Serve(g_s), s	10.4	0.0	9.7	14.2	0.0	4.6	6.7	33.8	33.9	8.3	27.6	27.6
Cycle Q Clear(g_c), s	10.4	0.0	9.7	14.2	0.0	4.6	6.7	33.8	33.9	8.3	27.6	27.6
Prop In Lane	1.00		0.38	1.00		1.00	1.00		0.21	1.00		0.17
Lane Grp Cap(c), veh/h	146	0	144	386	0	172	477	2052	1087	114	1372	732
V/C Ratio(X)	0.81	0.00	0.76	0.84	0.00	0.29	0.20	0.58	0.58	0.82	0.56	0.56
Avail Cap(c_a), veh/h	275	0	270	661	0	294	477	2052	1087	155	1372	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
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	72.2	0.0	71.9	69.9	0.0	65.7	45.4	19.3	19.4	74.0	36.7	36.7
Incr Delay (d2), s/veh	9.9	0.0	7.9	4.8	0.0	0.9	0.2	1.2	2.2	22.3	1.6	3.0
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(95%),veh/ln	9.0	0.0	8.3	11.1	0.0	3.5	5.4	19.3	20.7	8.0	17.3	18.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.1	0.0	79.7	74.8	0.0	66.6	45.6	20.5	21.6	96.3	38.4	39.8
LnGrp LOS	F	A	E	E	A	E	D	C	C	F	D	D
Approach Vol, veh/h	227				373				1907			
Approach Delay, s/veh	81.0				73.7				22.1			
Approach LOS	F				E				C			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.3	102.6		22.6	48.9	70.0		18.4				
Change Period (Y+Rc), s	6.1	* 6.1		* 5.3	6.1	5.5		5.3				
Max Green Setting (Gmax), s	13.9	* 70		* 30	18.9	64.5		24.7				
Max Q Clear Time (g_c+I1), s	10.3	35.9		16.2	8.7	29.6		12.4				
Green Ext Time (p_c), s	0.1	16.6		1.1	0.1	9.0		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	37.8											
HCM 6th LOS	D											
























# HCM 6th Signalized Intersection Summary

## 6: McCarran Blvd & E Greg St
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	209	28	215	220	241	105	868	394	97	668	94
Future Volume (veh/h)	207	209	28	215	220	241	105	868	394	97	668	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	213	215	26	222	227	0	108	895	0	100	689	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	264	279	33	273	308		217	1098		814	2807	
Arrive On Green	0.08	0.09	0.09	0.08	0.09	0.00	0.13	0.22	0.00	0.47	0.56	0.00
Sat Flow, veh/h	3456	3196	382	3456	3554	1585	1739	4985	1547	1739	5149	0
Grp Volume(v), veh/h	213	118	123	222	227	0	108	895	0	100	689	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1802	1728	1777	1585	1739	1662	1547	1739	1662	0
Q Serve(g_s), s	9.7	10.4	10.7	10.1	10.0	0.0	9.3	27.3	0.0	5.2	11.2	0.0
Cycle Q Clear(g_c), s	9.7	10.4	10.7	10.1	10.0	0.0	9.3	27.3	0.0	5.2	11.2	0.0
Prop In Lane	1.00		0.21	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	264	155	157	273	308		217	1098		814	2807	
V/C Ratio(X)	0.81	0.76	0.78	0.81	0.74		0.50	0.82		0.12	0.25	
Avail Cap(c_a), veh/h	525	431	437	482	817		261	1620		814	2807	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	72.7	71.4	71.5	72.5	71.3	0.0	65.3	59.3	0.0	24.0	17.7	0.0
Incr Delay (d2), s/veh	5.7	7.6	8.1	5.8	3.5	0.0	1.8	6.7	0.0	0.1	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(95%),veh/ln	8.0	8.8	9.0	8.3	8.2	0.0	7.5	17.7	0.0	3.9	7.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.4	79.0	79.6	78.4	74.8	0.0	67.1	66.0	0.0	24.1	17.8	0.0
LnGrp LOS	E	E	E	E	E		E	E		C	B	
Approach Vol, veh/h		454			449	A		1003	A		789	A
Approach Delay, s/veh		78.9			76.6			66.1			18.6	
Approach LOS		E			E			E			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	81.3	41.2	18.3	19.2	26.0	96.5	17.9	19.5				
Change Period (Y+Rc), s	* 6.4	6.0	* 5.7	* 5.2	* 6	6.4	* 5.7	* 5.7				
Max Green Setting (Gmax), s	* 24	52.0	* 22	* 39	* 24	51.6	* 24	* 37				
Max Q Clear Time (g_c+I1), s	7.2	29.3	12.1	12.7	11.3	13.2	11.7	12.0				
Green Ext Time (p_c), s	0.2	5.9	0.5	1.3	0.2	4.9	0.5	1.4				
Intersection Summary												
HCM 6th Ctrl Delay			56.1									
HCM 6th LOS			E									

# HCM 6th Signalized Intersection Summary

## 7: McCarran Blvd & Mira Loma Dr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	235	13	274	151	138	64	640	679	307	469	54
Future Volume (veh/h)	37	235	13	274	151	138	64	640	679	307	469	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	37	237	12	277	153	0	65	646	514	310	474	41
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	53	327	16	379	531		478	1967	611	373	1109	344
Arrive On Green	0.03	0.09	0.09	0.21	0.28	0.00	0.28	0.39	0.39	0.11	0.22	0.22
Sat Flow, veh/h	1781	3443	173	1781	1870	1585	1739	4985	1547	3374	4985	1547
Grp Volume(v), veh/h	37	122	127	277	153	0	65	646	514	310	474	41
Grp Sat Flow(s),veh/h/ln	1781	1777	1839	1781	1870	1585	1739	1662	1547	1687	1662	1547
Q Serve(g_s), s	2.5	8.0	8.1	17.4	7.7	0.0	3.4	10.8	17.5	10.8	9.8	2.1
Cycle Q Clear(g_c), s	2.5	8.0	8.1	17.4	7.7	0.0	3.4	10.8	17.5	10.8	9.8	2.1
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	53	169	175	379	531		478	1967	611	373	1109	344
V/C Ratio(X)	0.70	0.72	0.73	0.73	0.29		0.14	0.33	0.84	0.83	0.43	0.12
Avail Cap(c_a), veh/h	304	456	472	379	558		478	1967	611	495	1109	344
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.7	52.8	52.8	44.1	33.5	0.0	32.8	25.3	7.8	52.3	40.1	26.7
Incr Delay (d2), s/veh	15.7	5.7	5.7	11.8	0.3	0.0	0.1	0.4	13.2	8.8	1.2	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(95%),veh/ln	2.4	6.9	7.2	13.8	6.4	0.0	2.5	7.5	12.1	8.5	7.2	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.4	58.5	58.5	55.9	33.8	0.0	32.9	25.7	21.0	61.1	41.3	27.4
LnGrp LOS	E	E	E	E	C		C	C	C	E	D	C
Approach Vol, veh/h		286			430	A		1225			825	
Approach Delay, s/veh		60.4			48.0			24.1			48.0	
Approach LOS		E			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.7	54.1	30.7	16.6	39.7	33.0	8.0	39.2				
Change Period (Y+Rc), s	5.4	6.7	* 5.2	* 5.2	6.7	* 6.3	4.5	* 5.2				
Max Green Setting (Gmax), s	17.6	24.3	* 26	* 31	15.2	* 27	20.5	* 36				
Max Q Clear Time (g_c+I1), s	12.8	19.5	19.4	10.1	5.4	11.8	4.5	9.7				
Green Ext Time (p_c), s	0.5	2.5	0.4	1.3	0.1	2.6	0.0	0.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			38.7									
HCM 6th LOS			D									

























# HCM 6th Signalized Intersection Summary 8: Longley Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	743	44	462	460	47	138	465	962	101	364	153
Future Volume (veh/h)	155	743	44	462	460	47	138	465	962	101	364	153
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	163	782	0	486	484	0	145	489	0	106	383	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	224	836		589	1048		174	603		132	492	
Arrive On Green	0.07	0.24	0.00	0.12	0.30	0.00	0.10	0.17	0.00	0.07	0.14	0.00
Sat Flow, veh/h	3374	3561	0	4904	3469	1547	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	163	782	0	486	484	0	145	489	0	106	383	0
Grp Sat Flow(s),veh/h/ln	1687	1735	0	1635	1735	1547	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.7	26.5	0.0	11.6	13.6	0.0	9.6	15.9	0.0	7.0	12.5	0.0
Cycle Q Clear(g_c), s	5.7	26.5	0.0	11.6	13.6	0.0	9.6	15.9	0.0	7.0	12.5	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	224	836		589	1048		174	603		132	492	
V/C Ratio(X)	0.73	0.94		0.82	0.46		0.83	0.81		0.81	0.78	
Avail Cap(c_a), veh/h	484	847		744	1048		196	986		217	1028	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.0	44.6	0.0	51.6	34.0	0.0	53.2	48.0	0.0	54.7	49.9	0.0
Incr Delay (d2), s/veh	4.5	17.3	0.0	6.1	1.5	0.0	23.5	2.7	0.0	10.9	2.7	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(95%),veh/ln	4.5	18.7	0.0	8.6	9.6	0.0	9.1	11.3	0.0	6.3	9.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.5	61.9	0.0	57.6	35.4	0.0	76.7	50.6	0.0	65.6	52.6	0.0
LnGrp LOS	E	E		E	D		E	D		E	D	
Approach Vol, veh/h		945	A		970	A		634	A		489	A
Approach Delay, s/veh		61.5			46.6			56.6			55.4	
Approach LOS		E			D			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.3	27.1	21.1	35.6	18.4	22.9	13.8	43.0				
Change Period (Y+Rc), s	5.4	6.7	6.7	* 6.7	6.7	* 6.3	5.8	6.7				
Max Green Setting (Gmax), s	14.6	33.3	18.2	* 29	13.2	* 35	17.2	30.3				
Max Q Clear Time (g_c+I1), s	9.0	17.9	13.6	28.5	11.6	14.5	7.7	15.6				
Green Ext Time (p_c), s	0.1	2.5	0.8	0.4	0.1	2.1	0.3	2.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			54.7									
HCM 6th LOS			D									



































# HCM 6th Signalized Intersection Summary

## 9: S Virginia St & McCarran Blvd
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	339	610	220	139	634	527	204	980	195	432	761	77
Future Volume (veh/h)	339	610	220	139	634	527	204	980	195	432	761	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811	1811	1811	1811	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	353	635	0	145	584	462	212	1021	0	450	793	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	6	6	6	6	6	6	2	2	2	2	2	2
Cap, veh/h	415	1027		169	658	557	264	1446		1546	1642	
Arrive On Green	0.12	0.21	0.00	0.10	0.18	0.18	0.08	0.22	0.00	0.31	0.46	0.00
Sat Flow, veh/h	3346	4944	1535	1725	3622	3070	3456	6696	0	5023	3554	1585
Grp Volume(v), veh/h	353	635	0	145	584	462	212	1021	0	450	793	0
Grp Sat Flow(s),veh/h/ln	1673	1648	1535	1725	1811	1535	1728	1609	0	1674	1777	1585
Q Serve(g_s), s	15.5	17.5	0.0	12.4	23.6	11.3	9.1	21.9	0.0	10.2	23.2	0.0
Cycle Q Clear(g_c), s	15.5	17.5	0.0	12.4	23.6	11.3	9.1	21.9	0.0	10.2	23.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	415	1027		169	658	557	264	1446		1546	1642	
V/C Ratio(X)	0.85	0.62		0.86	0.89	0.83	0.80	0.71		0.29	0.48	
Avail Cap(c_a), veh/h	772	1111		340	693	587	452	1446		1546	1642	
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)	0.89	0.89	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	64.4	54.0	0.0	66.6	59.9	16.1	68.2	53.6	0.0	39.5	27.9	0.0
Incr Delay (d2), s/veh	4.5	0.8	0.0	11.8	13.0	9.3	5.6	2.9	0.0	0.1	1.0	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(95%),veh/ln	10.8	11.4	0.0	9.9	17.4	8.1	7.5	13.9	0.0	7.5	15.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.8	54.9	0.0	78.5	72.9	25.3	73.8	56.5	0.0	39.6	29.0	0.0
LnGrp LOS	E	D		E	E	C	E	E		D	C	
Approach Vol, veh/h		988	A		1191			1233	A		1243	A
Approach Delay, s/veh		59.9			55.1			59.5			32.8	
Approach LOS		E			E			E			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	52.5	40.0	20.1	37.4	16.9	75.6	24.0	33.5				
Change Period (Y+Rc), s	6.3	* 6.3	5.4	6.3	5.4	6.3	5.4	6.3				
Max Green Setting (Gmax), s	29.6	* 34	29.6	33.7	19.6	43.7	34.6	28.7				
Max Q Clear Time (g_c+I1), s	12.2	23.9	14.4	19.5	11.1	25.2	17.5	25.6				
Green Ext Time (p_c), s	1.5	4.5	0.3	3.4	0.4	4.8	1.1	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			51.3									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary
























## 10: Kietzke Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 		 	 	
Traffic Volume (veh/h)	180	700	450	75	800	150	850	200	50	250	50	230
Future Volume (veh/h)	180	700	450	75	800	150	850	200	50	250	50	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	186	722	0	77	825	0	876	206	0	258	52	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	847		304	1147		1027	277		875	142	
Arrive On Green	0.12	0.17	0.00	0.17	0.22	0.00	0.30	0.08	0.00	0.25	0.04	0.00
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	186	722	0	77	825	0	876	206	0	258	52	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	15.4	20.6	0.0	5.6	22.4	0.0	35.8	8.5	0.0	9.0	2.1	0.0
Cycle Q Clear(g_c), s	15.4	20.6	0.0	5.6	22.4	0.0	35.8	8.5	0.0	9.0	2.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	210	847		304	1147		1027	277		875	142	
V/C Ratio(X)	0.89	0.85		0.25	0.72		0.85	0.74		0.29	0.37	
Avail Cap(c_a), veh/h	292	977		352	1147		1027	1035		875	561	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.66	0.66	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.2	60.8	0.0	53.9	53.8	0.0	49.6	67.7	0.0	45.2	70.1	0.0
Incr Delay (d2), s/veh	20.5	6.6	0.0	0.3	2.6	0.0	8.9	3.9	0.0	0.2	1.6	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(95%),veh/ln	12.7	14.3	0.0	4.5	13.9	0.0	23.0	7.1	0.0	7.0	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.6	67.4	0.0	54.2	56.4	0.0	58.5	71.6	0.0	45.4	71.7	0.0
LnGrp LOS	F	E		D	E		E	E		D	E	
Approach Vol, veh/h		908	A		902	A		1082	A		310	A
Approach Delay, s/veh		71.1			56.2			61.0			49.8	
Approach LOS		E			E			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	44.3	18.0	31.9	31.2	50.0	12.3	23.1	40.0				
Change Period (Y+Rc), s	6.3	* 6.3	6.3	* 6.3	5.4	6.3	5.4	6.3				
Max Green Setting (Gmax), s	24.6	* 44	29.6	* 29	44.6	23.7	24.6	33.7				
Max Q Clear Time (g_c+I1), s	11.0	10.5	7.6	22.6	37.8	4.1	17.4	24.4				
Green Ext Time (p_c), s	0.7	1.2	0.2	2.3	2.0	0.2	0.3	3.5				
Intersection Summary												
HCM 6th Ctrl Delay			61.4									
HCM 6th LOS			E									

# HCM 6th Signalized Intersection Summary 11: Lakeside Dr & McCarran Blvd

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	888	87	229	1464	417	196	153	176	225	155	66
Future Volume (veh/h)	51	888	87	229	1464	417	196	153	176	225	155	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	55	965	0	249	1591	0	213	166	143	245	168	54
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	163	1154		411	1628		302	202	171	310	230	195
Arrive On Green	0.09	0.32	0.00	0.23	0.46	0.00	0.12	0.11	0.11	0.13	0.12	0.12
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	55	965	0	249	1591	0	213	166	143	245	168	54
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	4.3	37.8	0.0	18.8	65.9	0.0	15.7	13.0	13.3	18.1	13.0	3.4
Cycle Q Clear(g_c), s	4.3	37.8	0.0	18.8	65.9	0.0	15.7	13.0	13.3	18.1	13.0	3.4
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	163	1154		411	1628		302	202	171	310	230	195
V/C Ratio(X)	0.34	0.84		0.61	0.98		0.70	0.82	0.84	0.79	0.73	0.28
Avail Cap(c_a), veh/h	173	1154		411	1628		331	304	258	311	304	258
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)	0.82	0.82	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.9	47.0	0.0	51.6	39.9	0.0	51.4	65.5	65.6	50.7	63.4	32.9
Incr Delay (d2), s/veh	1.0	6.0	0.0	6.5	17.6	0.0	6.0	10.6	13.8	12.9	6.1	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.6	23.4	0.0	13.9	40.5	0.0	12.0	11.1	9.9	14.2	10.8	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	53.0	0.0	58.1	57.5	0.0	57.3	76.1	79.4	63.6	69.5	33.6
LnGrp LOS	E	D		E	E		E	E	E	E	E	C
Approach Vol, veh/h		1020	A		1840	A		522			467	
Approach Delay, s/veh		53.6			57.5			69.3			62.2	
Approach LOS		D			E			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.8	21.8	40.0	55.0	22.6	24.0	20.0	75.0				
Change Period (Y+Rc), s	* 4.7	5.6	5.4	6.3	* 4.7	5.6	6.3	* 6.3				
Max Green Setting (Gmax), s	* 20	24.4	34.6	48.7	* 20	24.4	14.6	* 69				
Max Q Clear Time (g_c+I1), s	20.1	15.3	20.8	39.8	17.7	15.0	6.3	67.9				
Green Ext Time (p_c), s	0.0	0.9	0.6	4.0	0.1	0.7	0.0	0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			58.7									
HCM 6th LOS			E									

# HCM 6th Signalized Intersection Summary 12: Plumas St & McCarran Blvd

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	657	92	103	1384	269	109	124	142	224	127	30
Future Volume (veh/h)	18	657	92	103	1384	269	109	124	142	224	127	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	19	706	89	111	1488	217	117	133	114	241	137	29
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	150	1219	154	293	1630	727	189	216	183	461	331	70
Arrive On Green	0.08	0.38	0.38	0.33	0.92	0.92	0.12	0.12	0.12	0.08	0.22	0.22
Sat Flow, veh/h	1781	3175	400	1781	3554	1585	1220	1870	1585	3456	1497	317
Grp Volume(v), veh/h	19	395	400	111	1488	217	117	133	114	241	0	166
Grp Sat Flow(s),veh/h/ln	1781	1777	1798	1781	1777	1585	1220	1870	1585	1728	0	1813
Q Serve(g_s), s	1.5	26.4	26.4	7.2	31.9	1.2	14.1	10.2	10.3	8.9	0.0	11.8
Cycle Q Clear(g_c), s	1.5	26.4	26.4	7.2	31.9	1.2	14.1	10.2	10.3	8.9	0.0	11.8
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	150	682	691	293	1630	727	189	216	183	461	0	400
V/C Ratio(X)	0.13	0.58	0.58	0.38	0.91	0.30	0.62	0.61	0.62	0.52	0.00	0.41
Avail Cap(c_a), veh/h	162	682	691	293	1630	727	289	370	314	559	0	601
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.49	0.49	0.49	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.6	36.6	36.6	44.4	4.7	1.0	64.9	63.1	63.2	51.6	0.0	50.1
Incr Delay (d2), s/veh	0.4	3.6	3.5	1.8	5.0	0.5	3.3	2.8	3.4	0.9	0.0	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(95%),veh/ln	1.2	17.6	17.7	5.1	5.6	1.3	8.1	8.7	7.6	7.2	0.0	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.0	40.1	40.1	46.2	9.7	1.5	68.2	66.0	66.6	52.5	0.0	50.8
LnGrp LOS	E	D	D	D	A	A	E	E	E	D	A	D
Approach Vol, veh/h		814			1816			364			407	
Approach Delay, s/veh		40.7			11.0			66.9			51.8	
Approach LOS		D			B			E			D	
Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	15.8	22.7	30.0	65.0		38.4	20.0	75.0				
Change Period (Y+Rc), s	4.5	* 5.3	* 5.3	7.4		* 5.3	7.4	* 6.2				
Max Green Setting (Gmax), s	15.5	* 30	* 25	57.6		* 50	13.6	* 69				
Max Q Clear Time (g_c+I1), s	10.9	16.1	9.2	28.4		13.8	3.5	33.9				
Green Ext Time (p_c), s	0.3	1.3	0.2	4.9		1.0	0.0	15.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				28.9								
HCM 6th LOS				C								



























# HCM 6th Signalized Intersection Summary 13: McCarran Blvd & Caughlin Pkwy/Cashil Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	65	214	23	59	29	263	1056	35	55	562	199
Future Volume (veh/h)	220	65	214	23	59	29	263	1056	35	55	562	199
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	242	71	176	25	65	24	289	1160	34	60	618	197
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	270	342	290	32	92	78	316	2155	63	77	1271	405
Arrive On Green	0.15	0.18	0.18	0.02	0.05	0.05	0.18	0.61	0.61	0.04	0.48	0.48
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3525	103	1781	2651	844
Grp Volume(v), veh/h	242	71	176	25	65	24	289	585	609	60	414	401
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1852	1781	1777	1718
Q Serve(g_s), s	20.0	4.8	15.3	2.1	5.1	2.2	23.9	28.6	28.6	5.0	23.7	23.8
Cycle Q Clear(g_c), s	20.0	4.8	15.3	2.1	5.1	2.2	23.9	28.6	28.6	5.0	23.7	23.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.49
Lane Grp Cap(c), veh/h	270	342	290	32	92	78	316	1086	1132	77	852	824
V/C Ratio(X)	0.90	0.21	0.61	0.78	0.71	0.31	0.92	0.54	0.54	0.78	0.49	0.49
Avail Cap(c_a), veh/h	600	342	290	683	253	215	470	1086	1132	146	852	824
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	62.5	52.0	56.3	73.4	70.2	68.8	60.6	16.9	16.9	71.1	26.5	26.5
Incr Delay (d2), s/veh	10.2	0.3	3.6	32.9	9.4	2.2	17.0	1.9	1.8	15.7	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	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.1	4.2	10.7	2.3	4.9	1.7	17.7	16.9	17.5	4.6	14.9	14.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.7	52.3	59.9	106.3	79.7	71.0	77.6	18.8	18.7	86.7	26.9	27.0
LnGrp LOS	E	D	E	F	E	E	E	B	B	F	C	C
Approach Vol, veh/h		489			114			1483			875	
Approach Delay, s/veh		65.1			83.7			30.2			31.0	
Approach LOS		E			F			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	98.0	7.2	32.6	32.0	78.2	27.2	12.6				
Change Period (Y+Rc), s	5.7	* 6.3	4.5	* 5.2	5.4	6.3	4.5	* 5.2				
Max Green Setting (Gmax), s	12.3	* 46	57.5	* 13	39.6	18.7	50.5	* 20				
Max Q Clear Time (g_c+I1), s	7.0	30.6	4.1	17.3	25.9	25.8	22.0	7.1				
Green Ext Time (p_c), s	0.0	6.2	0.1	0.0	0.7	0.0	0.7	0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			38.3									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary 14: McCarran Blvd & Caughlin Pkwy/Plumb Ln

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	56	52	43	61	276	56	1100	61	232	785	160
Future Volume (veh/h)	143	56	52	43	61	276	56	1100	61	232	785	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	157	62	43	47	67	227	62	1209	60	255	863	158
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	343	406	344	310	302	256	79	1539	76	281	1667	305
Arrive On Green	0.09	0.22	0.22	0.03	0.16	0.16	0.04	0.45	0.45	0.16	0.56	0.56
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3446	171	1781	2999	549
Grp Volume(v), veh/h	157	62	43	47	67	227	62	623	646	255	511	510
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1840	1781	1777	1772
Q Serve(g_s), s	10.7	4.0	3.3	3.3	4.7	21.0	5.2	44.8	44.9	21.1	26.9	26.9
Cycle Q Clear(g_c), s	10.7	4.0	3.3	3.3	4.7	21.0	5.2	44.8	44.9	21.1	26.9	26.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		0.31
Lane Grp Cap(c), veh/h	343	406	344	310	302	256	79	794	822	281	988	985
V/C Ratio(X)	0.46	0.15	0.12	0.15	0.22	0.89	0.78	0.78	0.79	0.91	0.52	0.52
Avail Cap(c_a), veh/h	433	687	582	440	628	533	164	794	822	420	988	985
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	45.1	47.6	47.3	50.3	54.7	61.6	70.9	35.4	35.4	62.1	20.8	20.8
Incr Delay (d2), s/veh	1.0	0.2	0.2	0.2	0.4	10.0	15.3	7.7	7.5	17.1	0.5	0.5
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(95%),veh/ln	8.6	3.5	2.4	2.7	4.1	14.3	4.8	27.5	28.4	16.0	16.1	16.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.1	47.7	47.4	50.5	55.1	71.6	86.2	43.0	42.8	79.2	21.2	21.2
LnGrp LOS	D	D	D	D	E	E	F	D	D	E	C	C
Approach Vol, veh/h		262			341			1331			1276	
Approach Delay, s/veh		46.7			65.4			44.9			32.8	
Approach LOS		D			E			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	29.2	74.2	9.1	37.5	12.9	90.6	17.4	29.1				
Change Period (Y+Rc), s	5.6	7.2	4.5	4.9	6.2	* 7.2	4.5	* 4.9				
Max Green Setting (Gmax), s	35.4	21.8	15.5	55.1	13.8	* 44	20.5	* 50				
Max Q Clear Time (g_c+I1), s	23.1	46.9	5.3	6.0	7.2	28.9	12.7	23.0				
Green Ext Time (p_c), s	0.5	0.0	0.0	0.5	0.0	5.2	0.2	1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			42.4									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary 15: McCarran Blvd & Mayberry Dr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	149	136	153	171	357	182	1195	124	261	887	154
Future Volume (veh/h)	116	149	136	153	171	357	182	1195	124	261	887	154
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	130	167	0	172	192	0	204	1343	0	293	997	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	217	195		244	235		380	1644		316	1493	
Arrive On Green	0.08	0.10	0.00	0.10	0.13	0.00	0.21	0.46	0.00	0.18	0.42	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	130	167	0	172	192	0	204	1343	0	293	997	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	9.7	13.2	0.0	12.7	15.0	0.0	15.3	49.0	0.0	24.3	33.9	0.0
Cycle Q Clear(g_c), s	9.7	13.2	0.0	12.7	15.0	0.0	15.3	49.0	0.0	24.3	33.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	217	195		244	235		380	1644		316	1493	
V/C Ratio(X)	0.60	0.85		0.71	0.82		0.54	0.82		0.93	0.67	
Avail Cap(c_a), veh/h	260	304		249	303		380	1644		356	1493	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.59	0.59	0.00
Uniform Delay (d), s/veh	54.6	66.0	0.0	53.2	63.9	0.0	52.4	34.8	0.0	60.8	35.1	0.0
Incr Delay (d2), s/veh	2.6	13.2	0.0	8.6	12.7	0.0	1.5	4.6	0.0	19.5	1.4	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(95%),veh/ln	8.0	11.3	0.0	10.4	12.6	0.0	11.1	28.7	0.0	16.8	19.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.2	79.2	0.0	61.8	76.6	0.0	53.9	39.5	0.0	80.2	36.5	0.0
LnGrp LOS	E	E		E	E		D	D		F	D	
Approach Vol, veh/h		297	A		364	A		1547	A		1290	A
Approach Delay, s/veh		69.6			69.6			41.4			46.4	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	32.6	76.5	19.6	21.4	39.1	70.0	16.4	24.5				
Change Period (Y+Rc), s	6.0	7.1	* 4.8	* 5.7	7.1	* 7	* 4.7	5.7				
Max Green Setting (Gmax), s	30.0	56.9	* 15	* 24	23.9	* 63	* 15	24.3				
Max Q Clear Time (g_c+I1), s	26.3	51.0	14.7	15.2	17.3	35.9	11.7	17.0				
Green Ext Time (p_c), s	0.3	3.9	0.0	0.5	0.3	7.0	0.1	0.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			48.6									
HCM 6th LOS			D									































# HCM 6th Signalized Intersection Summary

## 16: McCarran Blvd & 4th St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	87	104	231	126	99	259	1275	151	81	970	145
Future Volume (veh/h)	202	87	104	231	126	99	259	1275	151	81	970	145
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	220	95	0	251	137	81	282	1386	0	88	1054	119
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	245	122		293	167	141	306	1947		109	1583	706
Arrive On Green	0.14	0.07	0.00	0.16	0.09	0.09	0.23	0.73	0.00	0.06	0.45	0.45
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	220	95	0	251	137	81	282	1386	0	88	1054	119
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	18.2	7.5	0.0	20.6	10.8	6.2	23.2	33.0	0.0	7.3	35.1	4.1
Cycle Q Clear(g_c), s	18.2	7.5	0.0	20.6	10.8	6.2	23.2	33.0	0.0	7.3	35.1	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	245	122		293	167	141	306	1947		109	1583	706
V/C Ratio(X)	0.90	0.78		0.86	0.82	0.57	0.92	0.71		0.81	0.67	0.17
Avail Cap(c_a), veh/h	380	340		321	272	230	416	1947		223	1583	706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.37	0.37	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.6	69.0	0.0	60.9	67.2	46.5	56.9	13.7	0.0	69.5	32.8	9.1
Incr Delay (d2), s/veh	16.1	10.0	0.0	18.6	9.9	3.6	9.9	0.8	0.0	13.0	2.2	0.5
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(95%),veh/ln	14.1	6.9	0.0	16.0	9.4	5.5	13.8	12.3	0.0	6.6	21.3	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.7	79.0	0.0	79.6	77.1	50.1	66.8	14.5	0.0	82.5	35.0	9.6
LnGrp LOS	E	E		E	E	D	E	B		F	D	A
Approach Vol, veh/h		315	A		469			1668	A		1261	
Approach Delay, s/veh		79.5			73.8			23.3			35.9	
Approach LOS		E			E			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.4	89.4	29.7	15.5	30.8	74.0	25.7	19.6				
Change Period (Y+Rc), s	6.2	* 7.2	5.0	5.7	5.0	7.2	5.0	6.2				
Max Green Setting (Gmax), s	18.8	* 54	27.0	27.3	35.0	37.8	32.0	21.8				
Max Q Clear Time (g_c+I1), s	9.3	35.0	22.6	9.5	25.2	37.1	20.2	12.8				
Green Ext Time (p_c), s	0.1	9.1	0.3	0.3	0.6	0.5	0.4	0.6				
Intersection Summary												
HCM 6th Ctrl Delay			38.8									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary

























## 17: McCarran Blvd & Mae Anne Ave/Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 						 	  			  	
Traffic Volume (veh/h)	459	143	350	190	138	79	476	1054	166	83	777	266
Future Volume (veh/h)	459	143	350	190	138	79	476	1054	166	83	777	266
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	499	155	0	207	150	0	517	1146	0	90	845	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	550	185		266	179		885	2131		171	1287	
Arrive On Green	0.16	0.10	0.00	0.15	0.10	0.00	0.26	0.42	0.00	0.10	0.25	0.00
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	3456	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	499	155	0	207	150	0	517	1146	0	90	845	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1728	1702	1585	1781	1702	1585
Q Serve(g_s), s	21.3	12.2	0.0	16.8	11.8	0.0	19.6	25.3	0.0	7.2	22.2	0.0
Cycle Q Clear(g_c), s	21.3	12.2	0.0	16.8	11.8	0.0	19.6	25.3	0.0	7.2	22.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	550	185		266	179		885	2131		171	1287	
V/C Ratio(X)	0.91	0.84		0.78	0.84		0.58	0.54		0.53	0.66	
Avail Cap(c_a), veh/h	604	377		266	312		885	2131		171	1287	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.88	0.88	0.00
Uniform Delay (d), s/veh	62.0	66.4	0.0	61.4	66.7	0.0	48.8	32.8	0.0	64.6	50.3	0.0
Incr Delay (d2), s/veh	16.7	9.5	0.0	13.7	9.8	0.0	2.8	1.0	0.0	2.6	2.3	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(95%),veh/ln	15.9	10.4	0.0	13.5	10.3	0.0	13.4	15.5	0.0	6.0	14.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.6	75.9	0.0	75.1	76.5	0.0	51.6	33.8	0.0	67.2	52.6	0.0
LnGrp LOS	E	E		E	E		D	C		E	D	
Approach Vol, veh/h		654	A		357	A		1663	A		935	A
Approach Delay, s/veh		78.0			75.7			39.4			54.0	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.6	69.0	27.4	20.7	44.6	45.0	28.7	19.4				
Change Period (Y+Rc), s	6.2	6.4	5.0	* 5.8	6.2	* 7.2	* 4.8	5.0				
Max Green Setting (Gmax), s	13.8	62.6	20.5	* 30	38.4	* 38	* 26	25.0				
Max Q Clear Time (g_c+I1), s	9.2	27.3	18.8	14.2	21.6	24.2	23.3	13.8				
Green Ext Time (p_c), s	0.1	8.7	0.1	0.6	1.6	4.3	0.6	0.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			53.7									
HCM 6th LOS			D									
























# HCM 6th Signalized Intersection Summary

## 18: McCarran Blvd & 7th St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	336	178	166	165	187	146	234	1129	176	161	822	352
Future Volume (veh/h)	336	178	166	165	187	146	234	1129	176	161	822	352
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	369	196	136	181	205	119	257	1241	145	177	903	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	405	399	338	359	238	202	712	2384	740	228	1634	
Arrive On Green	0.19	0.21	0.21	0.10	0.13	0.13	0.21	0.47	0.47	0.07	0.32	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	369	196	136	181	205	119	257	1241	145	177	903	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	26.3	13.8	7.0	13.1	16.1	10.6	9.6	25.7	8.1	7.6	21.9	0.0
Cycle Q Clear(g_c), s	26.3	13.8	7.0	13.1	16.1	10.6	9.6	25.7	8.1	7.6	21.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	405	399	338	359	238	202	712	2384	740	228	1634	
V/C Ratio(X)	0.91	0.49	0.40	0.50	0.86	0.59	0.36	0.52	0.20	0.78	0.55	
Avail Cap(c_a), veh/h	405	399	338	536	337	285	712	2384	740	438	1634	
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	0.79	0.79	0.79	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.0	51.8	20.5	49.5	64.2	61.8	51.1	28.2	23.5	69.0	42.1	0.0
Incr Delay (d2), s/veh	24.4	0.9	0.8	1.1	14.7	2.7	1.1	0.6	0.5	5.6	1.4	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(95%),veh/ln	20.5	10.8	4.9	9.9	13.4	7.9	7.2	14.9	5.7	6.2	14.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.4	52.8	21.3	50.6	78.8	64.5	52.2	28.8	23.9	74.6	43.5	0.0
LnGrp LOS	E	D	C	D	E	E	D	C	C	E	D	
Approach Vol, veh/h		701			505			1643			1080	A
Approach Delay, s/veh		54.9			65.3			32.0			48.6	
Approach LOS		D			E			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.9	76.4	20.1	37.6	37.3	55.0	33.0	24.7				
Change Period (Y+Rc), s	6.0	6.4	4.6	5.6	6.4	* 7	* 4.7	* 5.6				
Max Green Setting (Gmax), s	19.0	53.6	30.4	24.4	24.4	* 48	* 28	* 27				
Max Q Clear Time (g_c+I1), s	9.6	27.7	15.1	15.8	11.6	23.9	28.3	18.1				
Green Ext Time (p_c), s	0.3	9.5	0.4	1.0	0.7	5.9	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay			44.9									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary

## 19: Clear Acre Ln & McCarran Blvd
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	516	1085	18	54	593	156	53	300	131	152	201	249
Future Volume (veh/h)	516	1085	18	54	593	156	53	300	131	152	201	249
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	521	1096	16	55	599	119	54	303	0	154	203	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1325	1964	29	71	701	313	65	386		227	238	
Arrive On Green	0.38	0.55	0.55	0.04	0.20	0.20	0.12	0.12	0.00	0.13	0.13	0.00
Sat Flow, veh/h	3456	3585	52	1781	3554	1585	522	3192	0	1781	1870	1585
Grp Volume(v), veh/h	521	543	569	55	599	119	191	166	0	154	203	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1861	1781	1777	1585	1844	1777	0	1781	1870	1585
Q Serve(g_s), s	16.4	29.9	29.9	4.6	24.4	9.8	15.1	13.6	0.0	12.4	15.9	0.0
Cycle Q Clear(g_c), s	16.4	29.9	29.9	4.6	24.4	9.8	15.1	13.6	0.0	12.4	15.9	0.0
Prop In Lane	1.00		0.03	1.00		1.00	0.28		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	1325	973	1019	71	701	313	230	221		227	238	
V/C Ratio(X)	0.39	0.56	0.56	0.78	0.85	0.38	0.83	0.75		0.68	0.85	
Avail Cap(c_a), veh/h	1325	973	1019	169	905	404	365	352		343	360	
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.6	22.1	22.1	71.4	58.1	52.3	64.1	63.4	0.0	62.5	64.1	0.0
Incr Delay (d2), s/veh	0.2	2.3	2.2	16.4	6.5	0.8	8.6	5.1	0.0	3.5	11.7	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(95%),veh/ln	11.1	18.4	19.1	4.3	16.9	7.0	12.2	10.6	0.0	9.8	13.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.8	24.4	24.3	87.8	64.6	53.0	72.7	68.5	0.0	66.1	75.8	0.0
LnGrp LOS	C	C	C	F	E	D	E	E		E	E	
Approach Vol, veh/h	1633			773			357			A	357	A
Approach Delay, s/veh	27.4			64.5			70.7				71.6	
Approach LOS	C			E			E				E	
Timer - Assigned Phs	2			3			4			6		
Phs Duration (G+Y+Rc), s	24.0			11.8			89.1			25.2		
Change Period (Y+Rc), s	* 5.3			5.8			6.9			6.1		
Max Green Setting (Gmax), s	* 30			14.2			53.1			28.9		
Max Q Clear Time (g_c+I1), s	17.1			6.6			31.9			17.9		
Green Ext Time (p_c), s	1.6			0.0			6.8			1.1		
Intersection Summary												
HCM 6th Ctrl Delay	46.6											
HCM 6th LOS	D											

# **Appendix C**

## **2025 No-Action Synchro Output**























# HCM 6th Signalized Intersection Summary

## 1: El Rancho Dr & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	728	76	46	1622	10	56	66	30	16	268	180
Future Volume (veh/h)	48	728	76	46	1622	10	56	66	30	16	268	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	53	800	63	51	1782	0	62	73	30	18	295	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	1509	673	84	1561		79	92	38	252	321	
Arrive On Green	0.04	0.42	0.42	0.09	0.88	0.00	0.04	0.07	0.07	0.14	0.17	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1260	518	1781	1870	1585
Grp Volume(v), veh/h	53	800	63	51	1782	0	62	0	103	18	295	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1777	1781	1870	1585
Q Serve(g_s), s	4.4	25.1	1.9	4.1	65.9	0.0	5.2	0.0	8.6	1.3	23.3	0.0
Cycle Q Clear(g_c), s	4.4	25.1	1.9	4.1	65.9	0.0	5.2	0.0	8.6	1.3	23.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	69	1509	673	84	1561		79	0	130	252	321	
V/C Ratio(X)	0.77	0.53	0.09	0.61	1.14		0.78	0.00	0.79	0.07	0.92	
Avail Cap(c_a), veh/h	233	1509	673	229	1561		184	0	359	252	355	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.53	0.53	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	71.5	32.0	7.3	66.6	9.1	0.0	70.9	0.0	68.4	55.8	61.1	0.0
Incr Delay (d2), s/veh	16.6	1.3	0.3	3.8	68.5	0.0	15.2	0.0	10.1	0.1	26.8	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(95%),veh/ln	4.2	16.2	2.4	3.4	26.0	0.0	4.9	0.0	7.7	1.1	19.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.1	33.4	7.6	70.4	77.6	0.0	86.1	0.0	78.5	56.0	87.9	0.0
LnGrp LOS	F	C	A	E	F		F	A	E	E	F	
Approach Vol, veh/h		916			1833	A		165			313	A
Approach Delay, s/veh		34.8			77.4			81.3			86.1	
Approach LOS		C			E			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.7	15.7	13.6	70.0	11.2	32.2	11.2	72.5				
Change Period (Y+Rc), s	* 6.5	* 4.7	6.6	* 6.3	4.5	6.5	5.4	6.6				
Max Green Setting (Gmax), s	* 15	* 30	19.3	* 64	15.5	28.5	19.6	63.4				
Max Q Clear Time (g_c+I1), s	3.3	10.6	6.1	27.1	7.2	25.3	6.4	67.9				
Green Ext Time (p_c), s	0.0	0.5	0.1	6.0	0.1	0.5	0.1	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			66.3									
HCM 6th LOS			E									

# HCM 6th Signalized Intersection Summary





















## 2: Sullivan Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	1206	39	18	1404	203	39	44	16	51	108	254
Future Volume (veh/h)	70	1206	39	18	1404	203	39	44	16	51	108	254
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	78	1340	32	20	1560	169	43	49	16	57	120	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	98	1620	723	27	1462	652	53	60	20	141	148	
Arrive On Green	0.06	0.46	0.46	0.03	0.82	0.82	0.07	0.07	0.07	0.08	0.08	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	712	811	265	1781	1870	1585
Grp Volume(v), veh/h	78	1340	32	20	1560	169	108	0	0	57	120	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1787	0	0	1781	1870	1585
Q Serve(g_s), s	6.5	49.4	1.7	1.7	61.7	3.6	8.9	0.0	0.0	4.6	9.5	0.0
Cycle Q Clear(g_c), s	6.5	49.4	1.7	1.7	61.7	3.6	8.9	0.0	0.0	4.6	9.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.40		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	98	1620	723	27	1462	652	133	0	0	141	148	
V/C Ratio(X)	0.80	0.83	0.04	0.74	1.07	0.26	0.81	0.00	0.00	0.40	0.81	
Avail Cap(c_a), veh/h	229	1620	723	261	1462	652	279	0	0	242	254	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	0.65	0.65	0.65	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	70.0	35.6	22.7	72.5	13.3	8.1	68.4	0.0	0.0	65.7	67.9	0.0
Incr Delay (d2), s/veh	12.2	3.3	0.0	22.9	39.9	0.6	11.0	0.0	0.0	1.8	9.9	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(95%),veh/ln	5.9	28.5	1.1	1.7	19.0	2.2	8.0	0.0	0.0	3.9	8.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.3	39.0	22.7	95.3	53.2	8.8	79.4	0.0	0.0	67.5	77.8	0.0
LnGrp LOS	F	D	C	F	F	A	E	A	A	E	E	
Approach Vol, veh/h		1450			1749			108			177	A
Approach Delay, s/veh		40.9			49.4			79.4			74.5	
Approach LOS		D			D			E			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.8	8.3	74.7		18.5	15.0	68.0				
Change Period (Y+Rc), s		6.6	6.0	6.3		6.6	* 6.7	* 6.3				
Max Green Setting (Gmax), s		23.4	22.0	58.7		20.4	* 19	* 62				
Max Q Clear Time (g_c+I1), s		10.9	3.7	51.4		11.5	8.5	63.7				
Green Ext Time (p_c), s		0.4	0.0	4.7		0.4	0.1	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			48.1									
HCM 6th LOS			D									


























# HCM 6th Signalized Intersection Summary

## 3: Rock Blvd & McCarran Blvd

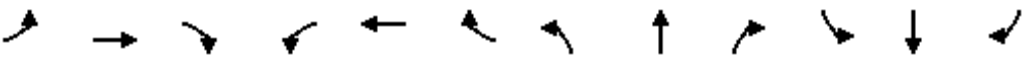
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1150	123	138	1761	0	85	1	89	2	5	0
Future Volume (veh/h)	0	1150	123	138	1761	0	85	1	89	2	5	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1322	105	159	2024	0	98	1	102	2	6	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1	1482	661	185	1995	0	163	1	314	36	91	0
Arrive On Green	0.00	0.42	0.42	0.10	0.56	0.00	0.20	0.20	0.20	0.20	0.20	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3647	0	580	7	1585	28	458	0
Grp Volume(v), veh/h	0	1322	105	159	2024	0	99	0	102	8	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	0	587	0	1585	486	0	0
Q Serve(g_s), s	0.0	51.8	6.2	13.2	84.2	0.0	0.0	0.0	8.3	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	51.8	6.2	13.2	84.2	0.0	27.7	0.0	8.3	27.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	0.99		1.00	0.25		0.00
Lane Grp Cap(c), veh/h	1	1482	661	185	1995	0	164	0	314	126	0	0
V/C Ratio(X)	0.00	0.89	0.16	0.86	1.01	0.00	0.60	0.00	0.33	0.06	0.00	0.00
Avail Cap(c_a), veh/h	222	1639	731	403	1995	0	167	0	317	134	0	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)	0.00	0.76	0.76	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	40.6	27.3	66.2	32.9	0.0	59.3	0.0	51.6	50.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	4.8	0.1	11.1	23.9	0.0	5.9	0.0	0.6	0.2	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(95%),veh/ln	0.0	29.7	4.2	10.6	51.1	0.0	7.2	0.0	5.9	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	45.4	27.4	77.3	56.8	0.0	65.2	0.0	52.2	50.2	0.0	0.0
LnGrp LOS	A	D	C	E	F	A	E	A	D	D	A	A
Approach Vol, veh/h	1427			2183			201			8		
Approach Delay, s/veh	44.1			58.3			58.6			50.2		
Approach LOS	D			E			E			D		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	34.7		21.6	68.4		34.7		0.0	90.0			
Change Period (Y+Rc), s	* 5		* 6.1	5.8		* 5		6.3	5.8			
Max Green Setting (Gmax), s	* 30		* 34	69.2		* 30		18.7	84.2			
Max Q Clear Time (g_c+I1), s	29.7		15.2	53.8		29.8		0.0	86.2			
Green Ext Time (p_c), s	0.0		0.4	8.2		0.0		0.0	0.0			
Intersection Summary												
HCM 6th Ctrl Delay	53.0											
HCM 6th LOS	D											

# HCM 6th Signalized Intersection Summary

## 4: McCarran Blvd & E Prater Way































												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	322	180	180	276	127	108	336	128	200	856	131
Future Volume (veh/h)	69	322	180	180	276	127	108	336	128	200	856	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	77	358	0	200	307	0	120	373	0	222	951	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	444		272	665		169	983		248	1292	
Arrive On Green	0.05	0.12	0.00	0.11	0.19	0.00	0.05	0.28	0.00	0.14	0.36	0.00
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	77	358	0	200	307	0	120	373	0	222	951	0
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.6	14.7	0.0	14.3	11.5	0.0	5.1	12.7	0.0	18.4	34.9	0.0
Cycle Q Clear(g_c), s	5.6	14.7	0.0	14.3	11.5	0.0	5.1	12.7	0.0	18.4	34.9	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	254	444		272	665		169	983		248	1292	
V/C Ratio(X)	0.30	0.81		0.74	0.46		0.71	0.38		0.90	0.74	
Avail Cap(c_a), veh/h	339	765		340	945		438	983		380	1292	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.5	63.9	0.0	48.9	54.2	0.0	70.3	43.8	0.0	63.5	41.5	0.0
Incr Delay (d2), s/veh	0.7	3.5	0.0	6.2	0.5	0.0	5.5	1.1	0.0	16.3	3.8	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(95%),veh/ln	4.6	11.2	0.0	11.1	9.0	0.0	4.3	9.7	0.0	14.4	22.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.2	67.4	0.0	55.1	54.7	0.0	75.8	45.0	0.0	79.8	45.3	0.0
LnGrp LOS	D	E		E	D		E	D		E	D	
Approach Vol, veh/h		435	A		507	A		493	A		1173	A
Approach Delay, s/veh		65.1			54.9			52.5			51.8	
Approach LOS		E			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.8	47.0	22.2	23.8	13.3	60.5	12.9	33.2				
Change Period (Y+Rc), s	6.0	5.5	* 5.7	* 5.1	6.0	* 6	5.5	5.1				
Max Green Setting (Gmax), s	32.0	41.5	* 22	* 32	19.0	* 55	14.5	39.9				
Max Q Clear Time (g_c+I1), s	20.4	14.7	16.3	16.7	7.1	36.9	7.6	13.5				
Green Ext Time (p_c), s	0.5	2.3	0.3	2.0	0.2	6.0	0.1	1.9				
Intersection Summary												
HCM 6th Ctrl Delay			54.7									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary 5: McCarran Blvd & Nichols Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↷		↰	↷	↷	↰	↷		↰	↷	↷
Traffic Volume (veh/h)	34	20	60	434	23	20	18	549	84	17	1472	52
Future Volume (veh/h)	34	20	60	434	23	20	18	549	84	17	1472	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	37	22	59	485	0	22	19	590	81	18	1583	51
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	28	76	559	0	249	26	1804	244	25	2013	65
Arrive On Green	0.06	0.06	0.06	0.16	0.00	0.16	0.01	0.40	0.40	0.01	0.40	0.40
Sat Flow, veh/h	1781	449	1204	3563	0	1585	1781	4547	616	1781	5081	164
Grp Volume(v), veh/h	37	0	81	485	0	22	19	440	231	18	1060	574
Grp Sat Flow(s),veh/h/ln	1781	0	1654	1781	0	1585	1781	1702	1759	1781	1702	1841
Q Serve(g_s), s	3.0	0.0	7.2	19.9	0.0	1.8	1.6	13.4	13.7	1.5	41.0	41.0
Cycle Q Clear(g_c), s	3.0	0.0	7.2	19.9	0.0	1.8	1.6	13.4	13.7	1.5	41.0	41.0
Prop In Lane	1.00		0.73	1.00		1.00	1.00		0.35	1.00		0.09
Lane Grp Cap(c), veh/h	113	0	105	559	0	249	26	1350	698	25	1349	729
V/C Ratio(X)	0.33	0.00	0.77	0.87	0.00	0.09	0.73	0.33	0.33	0.72	0.79	0.79
Avail Cap(c_a), veh/h	234	0	217	824	0	367	224	1350	698	165	1349	729
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	67.2	0.0	69.2	61.7	0.0	54.1	73.6	31.4	31.4	73.6	39.7	39.7
Incr Delay (d2), s/veh	1.7	0.0	11.4	6.7	0.0	0.2	32.2	0.6	1.3	31.6	4.7	8.4
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(95%),veh/ln	2.6	0.0	6.2	14.7	0.0	1.3	1.7	9.5	10.1	1.6	24.6	27.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.9	0.0	80.6	68.5	0.0	54.2	105.8	32.0	32.7	105.3	44.4	48.1
LnGrp LOS	E	A	F	E	A	D	F	C	C	F	D	D
Approach Vol, veh/h	118			507			690			1652		
Approach Delay, s/veh	76.9			67.9			34.3			46.3		
Approach LOS	E			E			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	65.0		28.8	8.3	64.9		14.8				
Change Period (Y+Rc), s	6.1	5.5		* 5.3	6.1	5.5		5.3				
Max Green Setting (Gmax), s	13.9	59.5		* 35	18.9	54.5		19.7				
Max Q Clear Time (g_c+I1), s	3.5	15.7		21.9	3.6	43.0		9.2				
Green Ext Time (p_c), s	0.0	4.6		1.6	0.0	7.6		0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	48.4											
HCM 6th LOS	D											
























# HCM 6th Signalized Intersection Summary

## 6: McCarran Blvd & E Greg St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 			  			  	
Traffic Volume (veh/h)	75	119	10	305	294	112	111	410	200	206	1099	102
Future Volume (veh/h)	75	119	10	305	294	112	111	410	200	206	1099	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	82	129	10	332	320	0	121	446	0	224	1195	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	5	5	5	5	5	5
Cap, veh/h	126	268	21	389	543		640	2535		250	1416	
Arrive On Green	0.04	0.08	0.08	0.11	0.15	0.00	0.37	0.51	0.00	0.14	0.28	0.00
Sat Flow, veh/h	3456	3344	257	3456	3554	1585	1739	4985	1547	1739	5149	0
Grp Volume(v), veh/h	82	68	71	332	320	0	121	446	0	224	1195	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1824	1728	1777	1585	1739	1662	1547	1739	1662	0
Q Serve(g_s), s	3.5	5.5	5.6	14.1	12.6	0.0	7.1	7.2	0.0	19.0	33.9	0.0
Cycle Q Clear(g_c), s	3.5	5.5	5.6	14.1	12.6	0.0	7.1	7.2	0.0	19.0	33.9	0.0
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	126	142	146	389	543		640	2535		250	1416	
V/C Ratio(X)	0.65	0.48	0.49	0.85	0.59		0.19	0.18		0.90	0.84	
Avail Cap(c_a), veh/h	445	389	399	560	896		640	2535		447	1682	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	71.3	66.0	66.1	65.3	59.2	0.0	32.2	19.9	0.0	63.1	50.6	0.0
Incr Delay (d2), s/veh	5.5	2.5	2.5	8.6	1.0	0.0	0.1	0.2	0.0	11.0	3.6	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(95%),veh/ln	3.0	4.7	4.9	10.9	9.7	0.0	5.4	5.0	0.0	13.9	20.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.8	68.5	68.6	74.0	60.2	0.0	32.3	20.0	0.0	74.2	54.1	0.0
LnGrp LOS	E	E	E	E	E		C	C		E	D	
Approach Vol, veh/h		221			652	A		567	A		1419	A
Approach Delay, s/veh		71.6			67.2			22.7			57.3	
Approach LOS		E			E			C			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.9	82.3	22.6	17.2	61.2	49.0	11.2	28.6				
Change Period (Y+Rc), s	6.4	* 6	* 5.7	* 5.2	6.0	* 6.4	* 5.7	* 5.7				
Max Green Setting (Gmax), s	38.6	* 31	* 24	* 33	19.0	* 51	* 19	* 38				
Max Q Clear Time (g_c+I1), s	21.0	9.2	16.1	7.6	9.1	35.9	5.5	14.6				
Green Ext Time (p_c), s	0.5	2.7	0.7	0.7	0.2	6.7	0.2	2.0				
Intersection Summary												
HCM 6th Ctrl Delay				53.8								
HCM 6th LOS				D								

# HCM 6th Signalized Intersection Summary
































## 7: McCarran Blvd & Mira Loma Dr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	98	10	601	208	231	32	408	194	186	549	26
Future Volume (veh/h)	34	98	10	601	208	231	32	408	194	186	549	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	41	118	11	724	251	0	39	492	175	224	661	23
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	55	174	16	913	1010		82	719	223	280	860	267
Arrive On Green	0.03	0.05	0.05	0.51	0.54	0.00	0.05	0.14	0.14	0.08	0.17	0.17
Sat Flow, veh/h	1781	3290	303	1781	1870	1585	1739	4985	1547	3374	4985	1547
Grp Volume(v), veh/h	41	63	66	724	251	0	39	492	175	224	661	23
Grp Sat Flow(s),veh/h/ln	1781	1777	1816	1781	1870	1585	1739	1662	1547	1687	1662	1547
Q Serve(g_s), s	2.7	4.2	4.3	40.1	8.6	0.0	2.6	11.2	3.4	7.8	15.2	1.2
Cycle Q Clear(g_c), s	2.7	4.2	4.3	40.1	8.6	0.0	2.6	11.2	3.4	7.8	15.2	1.2
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	55	94	96	913	1010		82	719	223	280	860	267
V/C Ratio(X)	0.74	0.67	0.69	0.79	0.25		0.48	0.68	0.78	0.80	0.77	0.09
Avail Cap(c_a), veh/h	497	115	118	913	1010		119	719	223	326	860	267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.7	55.8	55.8	24.0	14.6	0.0	55.7	48.8	3.4	54.1	47.4	28.7
Incr Delay (d2), s/veh	17.5	10.5	11.6	7.0	0.1	0.0	4.2	5.2	23.6	11.7	6.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.7	3.9	4.1	25.1	6.6	0.0	2.2	8.5	10.1	6.7	10.8	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.2	66.3	67.4	31.1	14.8	0.0	60.0	54.0	27.0	65.7	53.9	29.3
LnGrp LOS	E	E	E	C	B		E	D	C	E	D	C
Approach Vol, veh/h		170			975	A		706			908	
Approach Delay, s/veh		68.9			26.9			47.6			56.2	
Approach LOS		E			C			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.3	24.0	66.7	11.6	12.3	27.0	8.2	70.0				
Change Period (Y+Rc), s	5.4	6.7	* 5.2	* 5.2	6.7	* 6.3	4.5	* 5.2				
Max Green Setting (Gmax), s	11.6	17.3	* 62	* 7.8	8.2	* 21	33.5	* 36				
Max Q Clear Time (g_c+I1), s	9.8	13.2	42.1	6.3	4.6	17.2	4.7	10.6				
Green Ext Time (p_c), s	0.1	1.4	2.6	0.1	0.0	1.4	0.1	1.5				
Intersection Summary												
HCM 6th Ctrl Delay			44.4									
HCM 6th LOS			D									



























# HCM 6th Signalized Intersection Summary

## 8: Longley Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		  	 			 		 	 	
Traffic Volume (veh/h)	89	202	104	922	595	31	55	368	394	40	487	125
Future Volume (veh/h)	89	202	104	922	595	31	55	368	394	40	487	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	98	222	0	1013	654	0	60	404	0	44	535	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	152	300		1151	984		77	720		57	652	
Arrive On Green	0.05	0.09	0.00	0.23	0.28	0.00	0.04	0.20	0.00	0.03	0.18	0.00
Sat Flow, veh/h	3374	3561	0	4904	3469	1547	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	98	222	0	1013	654	0	60	404	0	44	535	0
Grp Sat Flow(s),veh/h/ln	1687	1735	0	1635	1735	1547	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	3.4	7.5	0.0	23.9	20.0	0.0	4.0	12.3	0.0	2.9	17.4	0.0
Cycle Q Clear(g_c), s	3.4	7.5	0.0	23.9	20.0	0.0	4.0	12.3	0.0	2.9	17.4	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	300		1151	984		77	720		57	652	
V/C Ratio(X)	0.64	0.74		0.88	0.66		0.78	0.56		0.77	0.82	
Avail Cap(c_a), veh/h	596	645		1316	984		122	838		187	968	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.3	53.5	0.0	44.3	37.9	0.0	56.8	43.1	0.0	57.7	47.1	0.0
Incr Delay (d2), s/veh	4.5	3.6	0.0	6.5	3.5	0.0	15.2	0.7	0.0	19.7	3.6	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(95%),veh/ln	2.7	6.0	0.0	15.1	13.4	0.0	3.7	9.0	0.0	2.9	12.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.8	57.1	0.0	50.8	41.5	0.0	72.0	43.7	0.0	77.4	50.7	0.0
LnGrp LOS	E	E		D	D		E	D		E	D	
Approach Vol, veh/h		320	A		1667	A		464	A		579	A
Approach Delay, s/veh		58.2			47.1			47.4			52.7	
Approach LOS		E			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	31.0	34.9	17.1	11.9	28.3	11.2	40.7				
Change Period (Y+Rc), s	5.4	6.7	6.7	* 6.7	6.7	* 6.3	5.8	6.7				
Max Green Setting (Gmax), s	12.6	28.3	32.2	* 22	8.2	* 33	21.2	33.3				
Max Q Clear Time (g_c+I1), s	4.9	14.3	25.9	9.5	6.0	19.4	5.4	22.0				
Green Ext Time (p_c), s	0.0	1.9	2.3	0.9	0.0	2.7	0.2	3.0				
Intersection Summary												
HCM 6th Ctrl Delay			49.4									
HCM 6th LOS			D									

































# HCM 6th Signalized Intersection Summary

## 9: S Virginia St & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	287	424	153	90	402	224	61	533	98	354	484	68
Future Volume (veh/h)	287	424	153	90	402	224	61	533	98	354	484	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1811	1811	1811	1811	1811	1811	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	309	456	0	97	541	168	66	573	0	381	520	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	6	6	6	2	2	2	2	2	2
Cap, veh/h	385	915		121	764	216	111	1271		494	963	
Arrive On Green	0.04	0.06	0.00	0.07	0.14	0.14	0.03	0.20	0.00	0.10	0.27	0.00
Sat Flow, veh/h	3346	4944	1535	1725	5433	1535	3456	6696	0	5023	3554	1585
Grp Volume(v), veh/h	309	456	0	97	541	168	66	573	0	381	520	0
Grp Sat Flow(s),veh/h/ln	1673	1648	1535	1725	1811	1535	1728	1609	0	1674	1777	1585
Q Serve(g_s), s	11.0	10.7	0.0	6.6	11.4	6.0	2.3	9.4	0.0	8.9	15.0	0.0
Cycle Q Clear(g_c), s	11.0	10.7	0.0	6.6	11.4	6.0	2.3	9.4	0.0	8.9	15.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	385	915		121	764	216	111	1271		494	963	
V/C Ratio(X)	0.80	0.50		0.80	0.71	0.78	0.59	0.45		0.77	0.54	
Avail Cap(c_a), veh/h	686	1389		282	1299	367	420	1271		820	963	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.4	50.9	0.0	54.9	49.2	11.3	57.3	42.4	0.0	52.8	37.3	0.0
Incr Delay (d2), s/veh	3.6	0.4	0.0	11.4	1.2	6.0	4.9	1.2	0.0	2.6	2.2	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(95%),veh/ln	8.6	8.0	0.0	5.8	8.8	8.4	1.9	6.7	0.0	6.8	10.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.0	51.3	0.0	66.3	50.4	17.3	62.2	43.6	0.0	55.4	39.5	0.0
LnGrp LOS	E	D		E	D	B	E	D		E	D	
Approach Vol, veh/h	765		A	806			639		A	901		A
Approach Delay, s/veh	54.8			45.4			45.5			46.2		
Approach LOS	D			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.1	30.0	13.8	28.5	9.3	38.8	19.2	23.2				
Change Period (Y+Rc), s	6.3	* 6.3	5.4	6.3	5.4	6.3	5.4	6.3				
Max Green Setting (Gmax), s	19.6	* 24	19.6	33.7	14.6	28.7	24.6	28.7				
Max Q Clear Time (g_c+I1), s	10.9	11.4	8.6	12.7	4.3	17.0	13.0	13.4				
Green Ext Time (p_c), s	0.9	2.8	0.1	2.7	0.1	2.4	0.8	3.5				
Intersection Summary												
HCM 6th Ctrl Delay	48.0											
HCM 6th LOS	D											
























# HCM 6th Signalized Intersection Summary

## 10: Kietzke Ln & McCarran Blvd
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 		 	 	
Traffic Volume (veh/h)	96	834	802	53	401	80	481	107	53	80	107	96
Future Volume (veh/h)	96	834	802	53	401	80	481	107	53	80	107	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	107	927	0	59	446	0	534	119	0	89	119	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	133	1221		574	2524		604	691		143	190	
Arrive On Green	0.07	0.24	0.00	0.43	0.66	0.00	0.17	0.19	0.00	0.04	0.05	0.00
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	107	927	0	59	446	0	534	119	0	89	119	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	7.1	20.3	0.0	2.4	4.1	0.0	18.1	3.3	0.0	3.0	3.9	0.0
Cycle Q Clear(g_c), s	7.1	20.3	0.0	2.4	4.1	0.0	18.1	3.3	0.0	3.0	3.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	133	1221		574	2524		604	691		143	190	
V/C Ratio(X)	0.80	0.76		0.10	0.18		0.88	0.17		0.62	0.62	
Avail Cap(c_a), veh/h	291	1221		574	2524		708	850		564	702	
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.81	0.81	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.6	42.4	0.0	23.9	11.1	0.0	48.3	40.3	0.0	56.6	55.6	0.0
Incr Delay (d2), s/veh	10.6	4.5	0.0	0.1	0.1	0.0	11.5	0.1	0.0	4.4	3.3	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(95%),veh/ln	6.3	13.6	0.0	1.8	2.6	0.0	13.3	2.6	0.0	2.5	3.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.2	46.9	0.0	24.0	11.2	0.0	59.8	40.4	0.0	61.0	58.9	0.0
LnGrp LOS	E	D		C	B		E	D		E	E	
Approach Vol, veh/h		1034	A		505	A		653	A		208	A
Approach Delay, s/veh		48.8			12.7			56.3			59.8	
Approach LOS		D			B			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.3	29.7	45.0	35.0	27.3	12.7	14.4	65.6				
Change Period (Y+Rc), s	5.4	6.3	6.3	* 6.3	6.3	* 6.3	5.4	6.3				
Max Green Setting (Gmax), s	19.6	28.7	19.6	* 29	24.6	* 24	19.6	28.7				
Max Q Clear Time (g_c+I1), s	5.0	5.3	4.4	22.3	20.1	5.9	9.1	6.1				
Green Ext Time (p_c), s	0.2	0.6	0.1	3.0	0.9	0.5	0.2	2.7				
Intersection Summary												
HCM 6th Ctrl Delay			44.2									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary

## 11: Lakeside Dr & McCarran Blvd























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	1318	86	188	534	167	98	138	208	323	95	31
Future Volume (veh/h)	51	1318	86	188	534	167	98	138	208	323	95	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	55	1417	0	202	574	0	105	148	168	347	102	30
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	684	1604		226	690		314	225	190	419	444	376
Arrive On Green	0.77	0.90	0.00	0.13	0.19	0.00	0.06	0.12	0.12	0.18	0.24	0.24
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	55	1417	0	202	574	0	105	148	168	347	102	30
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.1	28.7	0.0	16.8	23.3	0.0	7.7	11.3	15.6	24.9	6.6	0.9
Cycle Q Clear(g_c), s	1.1	28.7	0.0	16.8	23.3	0.0	7.7	11.3	15.6	24.9	6.6	0.9
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	684	1604		226	690		314	225	190	419	444	376
V/C Ratio(X)	0.08	0.88		0.89	0.83		0.33	0.66	0.88	0.83	0.23	0.08
Avail Cap(c_a), veh/h	684	1604		303	1552		443	256	217	458	444	376
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.9	5.4	0.0	64.5	58.1	0.0	53.0	63.0	64.9	44.6	46.2	7.8
Incr Delay (d2), s/veh	0.0	5.6	0.0	22.0	2.7	0.0	0.6	5.1	29.5	11.2	0.3	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(95%),veh/ln	0.8	6.6	0.0	13.7	15.8	0.0	6.3	9.6	12.4	18.0	5.6	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.9	11.0	0.0	86.4	60.7	0.0	53.6	68.1	94.4	55.8	46.4	7.9
LnGrp LOS	B	B		F	E		D	E	F	E	D	A
Approach Vol, veh/h	1472		A	776		A	421		479			
Approach Delay, s/veh	11.0			67.4			75.0		50.8			
Approach LOS	B			E			E		D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.7	22.5	23.5	72.2	14.2	40.1	62.1	33.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	30.5	20.5	25.5	55.5	20.5	30.5	15.5	65.5				
Max Q Clear Time (g_c+I1), s	26.9	17.6	18.8	30.7	9.7	8.6	3.1	25.3				
Green Ext Time (p_c), s	0.4	0.4	0.3	11.1	0.2	0.5	0.1	3.9				
Intersection Summary												
HCM 6th Ctrl Delay	39.5											
HCM 6th LOS	D											

# HCM 6th Signalized Intersection Summary 12: Plumas St & McCarran Blvd

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	1084	122	85	467	163	62	76	95	269	107	22
Future Volume (veh/h)	22	1084	122	85	467	163	62	76	95	269	107	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	24	1204	123	94	519	135	69	84	79	299	119	22
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	45	2004	204	117	2305	1028	139	136	115	497	305	56
Arrive On Green	0.03	0.62	0.62	0.07	0.65	0.65	0.07	0.07	0.07	0.10	0.20	0.20
Sat Flow, veh/h	1781	3256	332	1781	3554	1585	1248	1870	1585	3456	1535	284
Grp Volume(v), veh/h	24	656	671	94	519	135	69	84	79	299	0	141
Grp Sat Flow(s),veh/h/ln	1781	1777	1811	1781	1777	1585	1248	1870	1585	1728	0	1819
Q Serve(g_s), s	2.0	33.7	34.0	7.8	9.0	4.9	8.1	6.5	7.3	11.6	0.0	10.1
Cycle Q Clear(g_c), s	2.0	33.7	34.0	7.8	9.0	4.9	8.1	6.5	7.3	11.6	0.0	10.1
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	45	1094	1115	117	2305	1028	139	136	115	497	0	362
V/C Ratio(X)	0.53	0.60	0.60	0.81	0.23	0.13	0.50	0.62	0.69	0.60	0.00	0.39
Avail Cap(c_a), veh/h	162	1094	1115	412	2305	1028	253	308	261	752	0	663
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	0.89	0.89	0.89	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.2	17.6	17.6	69.2	10.9	10.1	68.3	67.5	67.9	55.2	0.0	52.2
Incr Delay (d2), s/veh	9.4	2.4	2.4	11.0	0.0	0.1	2.7	4.5	7.0	1.2	0.0	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(95%),veh/ln	1.8	19.7	20.2	6.9	6.1	3.0	4.9	6.0	5.7	8.9	0.0	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.7	20.0	20.0	80.1	10.9	10.2	71.0	72.0	74.9	56.4	0.0	52.9
LnGrp LOS	F	B	C	F	B	B	E	E	E	E	A	D
Approach Vol, veh/h		1351			748			232			440	
Approach Delay, s/veh		21.1			19.5			72.7			55.2	
Approach LOS		C			B			E			E	
Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	18.9	16.2	15.1	99.8		35.1	10.2	104.7				
Change Period (Y+Rc), s	4.5	* 5.3	* 5.3	7.4		* 5.3	6.4	* 7.4				
Max Green Setting (Gmax), s	25.5	* 25	* 35	42.6		* 55	13.6	* 64				
Max Q Clear Time (g_c+I1), s	13.6	10.1	9.8	36.0		12.1	4.0	11.0				
Green Ext Time (p_c), s	0.8	0.8	0.2	4.1		0.9	0.0	3.9				
Intersection Summary												
HCM 6th Ctrl Delay				30.4								
HCM 6th LOS				C								



























# HCM 6th Signalized Intersection Summary 13: McCarran Blvd & Caughlin Pkwy/Cashil Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	50	289	33	99	41	259	337	21	25	758	228
Future Volume (veh/h)	198	50	289	33	99	41	259	337	21	25	758	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	248	62	271	41	124	39	324	421	24	31	948	205
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	362	306	53	165	140	246	1349	77	39	816	176
Arrive On Green	0.13	0.19	0.19	0.03	0.09	0.09	0.14	0.39	0.39	0.02	0.28	0.28
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3418	194	1781	2906	628
Grp Volume(v), veh/h	248	62	271	41	124	39	324	218	227	31	579	574
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1835	1781	1777	1757
Q Serve(g_s), s	16.0	3.3	20.0	2.7	7.8	1.9	16.6	10.2	10.2	2.1	33.7	33.7
Cycle Q Clear(g_c), s	16.0	3.3	20.0	2.7	7.8	1.9	16.6	10.2	10.2	2.1	33.7	33.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.11	1.00		0.36
Lane Grp Cap(c), veh/h	237	362	306	53	165	140	246	701	725	39	499	494
V/C Ratio(X)	1.05	0.17	0.88	0.78	0.75	0.28	1.31	0.31	0.31	0.79	1.16	1.16
Avail Cap(c_a), veh/h	237	652	552	96	566	479	246	701	725	94	499	494
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	52.0	40.4	47.1	57.8	53.4	23.9	51.7	25.1	25.1	58.4	43.1	43.2
Incr Delay (d2), s/veh	71.3	0.2	8.4	21.6	6.7	1.1	167.5	1.2	1.1	29.2	92.6	93.7
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(95%),veh/ln	17.9	2.8	13.4	2.8	7.2	2.1	28.7	7.7	7.9	2.2	38.6	38.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	123.3	40.6	55.4	79.4	60.2	25.0	219.2	26.2	26.2	87.6	135.7	136.8
LnGrp LOS	F	D	E	E	E	C	F	C	C	F	F	F
Approach Vol, veh/h	581			204			769			1184		
Approach Delay, s/veh	82.8			57.3			107.5			135.0		
Approach LOS	F			E			F			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	53.7	8.0	28.4	22.0	40.0	21.2	15.3				
Change Period (Y+Rc), s	5.7	* 6.3	4.5	* 5.2	5.4	6.3	* 5.2	* 4.7				
Max Green Setting (Gmax), s	6.3	* 44	6.5	* 42	16.6	33.7	* 13	* 36				
Max Q Clear Time (g_c+I1), s	4.1	12.2	4.7	22.0	18.6	35.7	18.0	9.8				
Green Ext Time (p_c), s	0.0	2.3	0.0	1.2	0.0	0.0	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay	110.4											
HCM 6th LOS	F											

# HCM 6th Signalized Intersection Summary 14: McCarran Blvd & Caughlin Pkwy/Plumb Ln

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	50	27	47	26	103	45	512	18	230	1081	110
Future Volume (veh/h)	134	50	27	47	26	103	45	512	18	230	1081	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	156	58	23	55	30	90	52	595	19	267	1257	115
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	185	198	168	131	139	118	67	704	22	550	1580	144
Arrive On Green	0.07	0.11	0.11	0.04	0.07	0.07	0.04	0.20	0.20	0.31	0.48	0.48
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3515	112	1781	3293	300
Grp Volume(v), veh/h	156	58	23	55	30	90	52	301	313	267	677	695
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1850	1781	1777	1816
Q Serve(g_s), s	6.3	3.4	1.6	3.6	1.8	6.7	3.5	19.5	19.6	14.6	38.4	38.7
Cycle Q Clear(g_c), s	6.3	3.4	1.6	3.6	1.8	6.7	3.5	19.5	19.6	14.6	38.4	38.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.17
Lane Grp Cap(c), veh/h	185	198	168	131	139	118	67	356	371	550	853	872
V/C Ratio(X)	0.84	0.29	0.14	0.42	0.22	0.76	0.77	0.84	0.85	0.49	0.79	0.80
Avail Cap(c_a), veh/h	260	313	265	231	287	243	131	486	506	550	853	872
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	53.6	49.5	48.7	55.5	52.2	54.5	57.2	46.2	46.2	33.7	26.2	26.3
Incr Delay (d2), s/veh	16.0	0.8	0.4	2.2	0.8	9.7	17.1	9.7	9.5	0.7	7.5	7.5
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(95%),veh/ln	9.3	3.0	1.2	3.1	1.6	5.4	3.3	14.2	14.7	10.2	23.3	23.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.5	50.3	49.1	57.6	53.0	64.2	74.3	55.9	55.7	34.4	33.7	33.8
LnGrp LOS	E	D	D	E	D	E	E	E	E	C	C	C
Approach Vol, veh/h		237			175			666			1639	
Approach Delay, s/veh		62.9			60.2			57.2			33.9	
Approach LOS		E			E			E			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	43.5	31.2	9.3	17.6	10.7	64.0	13.3	13.5				
Change Period (Y+Rc), s	6.4	* 7.2	4.5	4.9	6.2	6.4	4.9	* 4.6				
Max Green Setting (Gmax), s	33.4	* 33	11.5	20.1	8.8	57.6	13.5	* 18				
Max Q Clear Time (g_c+I1), s	16.6	21.6	5.6	5.4	5.5	40.7	8.3	8.7				
Green Ext Time (p_c), s	0.6	2.5	0.0	0.2	0.0	7.9	0.2	0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			43.8									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary 15: McCarran Blvd & Mayberry Dr


































													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	126	176	191	152	99	260	39	511	226	199	1073	71	
Future Volume (veh/h)	126	176	191	152	99	260	39	511	226	199	1073	71	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
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	147	205	0	177	115	0	45	594	0	231	1248	0	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	314	238		250	252		69	974		412	1688		
Arrive On Green	0.09	0.13	0.00	0.09	0.13	0.00	0.04	0.27	0.00	0.46	0.95	0.00	
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585	
Grp Volume(v), veh/h	147	205	0	177	115	0	45	594	0	231	1248	0	
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585	
Q Serve(g_s), s	8.5	12.9	0.0	10.3	6.8	0.0	3.0	17.5	0.0	11.3	7.1	0.0	
Cycle Q Clear(g_c), s	8.5	12.9	0.0	10.3	6.8	0.0	3.0	17.5	0.0	11.3	7.1	0.0	
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Lane Grp Cap(c), veh/h	314	238		250	252		69	974		412	1688		
V/C Ratio(X)	0.47	0.86		0.71	0.46		0.65	0.61		0.56	0.74		
Avail Cap(c_a), veh/h	327	302		250	301		132	974		490	1688		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.72	0.72	0.00	
Uniform Delay (d), s/veh	40.5	51.3	0.0	41.3	47.9	0.0	56.9	38.0	0.0	27.8	1.8	0.0	
Incr Delay (d2), s/veh	1.1	18.0	0.0	8.9	1.3	0.0	9.8	2.8	0.0	0.9	2.1	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(95%),veh/ln	6.8	11.6	0.0	8.8	5.8	0.0	2.7	12.2	0.0	6.7	2.4	0.0	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	41.6	69.3	0.0	50.2	49.2	0.0	66.7	40.8	0.0	28.7	3.9	0.0	
LnGrp LOS	D	E		D	D		E	D		C	A		
Approach Vol, veh/h			A			A			639	A	1479		A
Approach Delay, s/veh			57.7			49.8			42.6			7.8	
Approach LOS			E			D			D			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	34.8	40.0	16.0	21.0	10.8	64.0	15.1	21.8					
Change Period (Y+Rc), s	7.0	* 7.1	* 4.8	* 5.7	6.1	7.0	* 4.7	5.7					
Max Green Setting (Gmax), s	33.0	* 33	* 11	* 19	8.9	57.0	* 11	19.3					
Max Q Clear Time (g_c+I1), s	13.3	19.5	12.3	14.9	5.0	9.1	10.5	8.8					
Green Ext Time (p_c), s	0.6	2.9	0.0	0.4	0.0	10.8	0.0	0.3					
Intersection Summary													
HCM 6th Ctrl Delay	26.6												
HCM 6th LOS	C												

# HCM 6th Signalized Intersection Summary

## 16: McCarran Blvd & 4th St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	82	122	133	66	41	62	691	148	75	1067	177
Future Volume (veh/h)	129	82	122	133	66	41	62	691	148	75	1067	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	147	93	0	151	75	36	70	785	0	85	1212	151
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	177	128		178	110	94	90	1001		108	1072	478
Arrive On Green	0.10	0.07	0.00	0.10	0.06	0.06	0.05	0.28	0.00	0.06	0.30	0.30
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	147	93	0	151	75	36	70	785	0	85	1212	151
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	9.7	5.8	0.0	10.0	4.7	2.6	4.7	24.4	0.0	5.6	36.2	2.6
Cycle Q Clear(g_c), s	9.7	5.8	0.0	10.0	4.7	2.6	4.7	24.4	0.0	5.6	36.2	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	177	128		178	110	94	90	1001		108	1072	478
V/C Ratio(X)	0.83	0.73		0.85	0.68	0.38	0.78	0.78		0.79	1.13	0.32
Avail Cap(c_a), veh/h	297	503		223	418	354	223	1001		235	1072	478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.80	0.80	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	54.8	0.0	53.1	55.3	54.4	56.3	39.7	0.0	55.6	41.9	2.7
Incr Delay (d2), s/veh	9.5	7.6	0.0	21.1	7.1	2.6	10.8	5.0	0.0	11.8	70.7	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	0.0
%ile BackOfQ(95%),veh/ln	8.2	5.3	0.0	9.2	4.3	2.0	4.1	15.7	0.0	5.1	36.4	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.5	62.4	0.0	74.2	62.4	56.9	67.1	44.7	0.0	67.4	112.6	4.5
LnGrp LOS	E	E		E	E	E	E	D		E	F	A
Approach Vol, veh/h		240	A		262			855	A		1448	
Approach Delay, s/veh		62.5			68.4			46.5			98.7	
Approach LOS		E			E			D			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.5	40.0	17.0	13.9	11.1	43.4	17.6	13.3				
Change Period (Y+Rc), s	7.2	* 6.2	5.0	5.7	5.0	7.2	5.7	* 6.2				
Max Green Setting (Gmax), s	15.8	* 34	15.0	32.3	15.0	34.8	20.0	* 27				
Max Q Clear Time (g_c+I1), s	7.6	26.4	12.0	7.8	6.7	38.2	11.7	6.7				
Green Ext Time (p_c), s	0.1	2.8	0.1	0.4	0.1	0.0	0.2	0.4				
Intersection Summary												
HCM 6th Ctrl Delay			76.9									
HCM 6th LOS			E									

























# HCM 6th Signalized Intersection Summary 17: McCarran Blvd & Mae Anne Ave/Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 		 	 		 	 	  		 	  	
Traffic Volume (veh/h)	418	33	338	47	23	9	202	522	42	26	1098	241
Future Volume (veh/h)	418	33	338	47	23	9	202	522	42	26	1098	241
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	459	36	0	52	25	0	222	574	0	29	1207	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	533	94		258	91		284	1860		64	1651	
Arrive On Green	0.15	0.05	0.00	0.14	0.05	0.00	0.08	0.36	0.00	0.07	0.65	0.00
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	3456	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	459	36	0	52	25	0	222	574	0	29	1207	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1728	1702	1585	1781	1702	1585
Q Serve(g_s), s	15.5	2.2	0.0	3.1	1.5	0.0	7.6	9.7	0.0	1.9	19.0	0.0
Cycle Q Clear(g_c), s	15.5	2.2	0.0	3.1	1.5	0.0	7.6	9.7	0.0	1.9	19.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	533	94		258	91		284	1860		64	1651	
V/C Ratio(X)	0.86	0.38		0.20	0.27		0.78	0.31		0.45	0.73	
Avail Cap(c_a), veh/h	697	408		260	312		415	1860		205	1651	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.85	0.85	0.00
Uniform Delay (d), s/veh	49.5	55.2	0.0	45.2	55.0	0.0	54.0	27.3	0.0	54.5	17.7	0.0
Incr Delay (d2), s/veh	8.5	2.6	0.0	0.4	1.6	0.0	5.9	0.4	0.0	4.1	2.5	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(95%),veh/ln	11.7	2.0	0.0	2.5	1.4	0.0	6.1	6.9	0.0	1.6	8.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.0	57.8	0.0	45.6	56.6	0.0	59.9	27.8	0.0	58.7	20.2	0.0
LnGrp LOS	E	E		D	E		E	C		E	C	
Approach Vol, veh/h		495	A		77	A		796	A		1236	A
Approach Delay, s/veh		58.0			49.2			36.7			21.1	
Approach LOS		E			D			D			C	
Timer - Assigned Phs												
Phs Duration (G+Y+Rc), s	10.5	50.9	22.4	11.8	15.4	46.0	23.3	10.9				
Change Period (Y+Rc), s	6.2	* 7.2	5.0	* 5.8	5.6	7.2	* 4.8	5.0				
Max Green Setting (Gmax), s	13.8	* 40	17.5	* 26	14.4	38.8	* 24	20.0				
Max Q Clear Time (g_c+I1), s	3.9	11.7	5.1	4.2	9.6	21.0	17.5	3.5				
Green Ext Time (p_c), s	0.0	3.6	0.1	0.1	0.3	7.3	1.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay			33.7									
HCM 6th LOS			C									

























# HCM 6th Signalized Intersection Summary

## 18: McCarran Blvd & 7th St

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	278	146	303	191	159	78	66	694	111	89	963	193	
Future Volume (veh/h)	278	146	303	191	159	78	66	694	111	89	963	193	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
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	312	164	255	215	179	66	74	780	94	100	1082	0	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	385	308	261	356	217	184	132	1498	465	154	1489		
Arrive On Green	0.17	0.16	0.16	0.12	0.12	0.12	0.04	0.29	0.29	0.04	0.29	0.00	
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	3456	5106	1585	3456	5106	1585	
Grp Volume(v), veh/h	312	164	255	215	179	66	74	780	94	100	1082	0	
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1728	1702	1585	1728	1702	1585	
Q Serve(g_s), s	17.8	9.6	11.7	12.6	11.2	4.6	2.5	15.3	5.3	3.4	22.9	0.0	
Cycle Q Clear(g_c), s	17.8	9.6	11.7	12.6	11.2	4.6	2.5	15.3	5.3	3.4	22.9	0.0	
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Lane Grp Cap(c), veh/h	385	308	261	356	217	184	132	1498	465	154	1489		
V/C Ratio(X)	0.81	0.53	0.98	0.60	0.82	0.36	0.56	0.52	0.20	0.65	0.73		
Avail Cap(c_a), veh/h	432	474	402	356	343	291	501	1642	510	403	1489		
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	0.90	0.90	0.90	1.00	1.00	0.00	
Uniform Delay (d), s/veh	36.5	45.9	18.5	39.9	51.8	48.9	56.7	35.4	31.8	56.4	38.2	0.0	
Incr Delay (d2), s/veh	10.1	1.4	30.9	2.9	8.8	1.2	3.3	0.3	0.2	4.5	3.1	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(95%),veh/ln	13.6	8.1	10.6	9.7	9.7	3.4	2.0	9.9	3.7	2.8	14.5	0.0	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	46.7	47.3	49.4	42.8	60.6	50.1	60.1	35.6	32.0	60.9	41.3	0.0	
LnGrp LOS	D	D	D	D	E	D	E	D	C	E	D		
Approach Vol, veh/h	731			460			948			1182			A
Approach Delay, s/veh	47.8			50.8			37.2			43.0			
Approach LOS	D			D			D			D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	11.4	41.6	19.0	25.4	11.0	42.0	24.8	19.5					
Change Period (Y+Rc), s	6.0	6.4	4.6	5.6	6.4	* 7	* 4.7	* 5.6					
Max Green Setting (Gmax), s	14.0	38.6	14.4	30.4	17.4	* 35	* 23	* 22					
Max Q Clear Time (g_c+I1), s	5.4	17.3	14.6	13.7	4.5	24.9	19.8	13.2					
Green Ext Time (p_c), s	0.1	5.1	0.0	1.6	0.1	4.7	0.3	0.7					
Intersection Summary													
HCM 6th Ctrl Delay	43.5												
HCM 6th LOS	D												
























# HCM 6th Signalized Intersection Summary

## 19: Clear Acre Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	217	718	78	89	946	76	64	150	137	125	292	412
Future Volume (veh/h)	217	718	78	89	946	76	64	150	137	125	292	412
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	258	855	83	106	1126	67	76	179	0	149	348	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	310	1158	112	128	1218	543	96	244		343	360	
Arrive On Green	0.09	0.35	0.35	0.07	0.34	0.34	0.09	0.09	0.00	0.19	0.19	0.00
Sat Flow, veh/h	3456	3272	318	1781	3554	1585	1017	2673	0	1781	1870	1585
Grp Volume(v), veh/h	258	464	474	106	1126	67	136	119	0	149	348	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1813	1781	1777	1585	1820	1777	0	1781	1870	1585
Q Serve(g_s), s	11.0	34.3	34.3	8.8	45.7	4.4	11.0	9.8	0.0	11.1	27.7	0.0
Cycle Q Clear(g_c), s	11.0	34.3	34.3	8.8	45.7	4.4	11.0	9.8	0.0	11.1	27.7	0.0
Prop In Lane	1.00		0.18	1.00		1.00	0.56		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	310	629	642	128	1218	543	172	168		343	360	
V/C Ratio(X)	0.83	0.74	0.74	0.83	0.92	0.12	0.79	0.71		0.43	0.97	
Avail Cap(c_a), veh/h	440	629	642	169	1218	543	360	352		343	360	
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.2	42.4	42.4	68.7	47.4	33.8	66.5	65.9	0.0	53.3	60.1	0.0
Incr Delay (d2), s/veh	9.1	7.6	7.4	22.4	13.1	0.5	7.9	5.4	0.0	0.9	38.3	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(95%),veh/ln	8.9	22.5	22.9	8.3	29.5	3.1	9.3	8.2	0.0	8.7	23.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.3	49.9	49.8	91.1	60.5	34.3	74.4	71.4	0.0	54.2	98.3	0.0
LnGrp LOS	E	D	D	F	E	C	E	E		D	F	
Approach Vol, veh/h	1196				1299				255			
Approach Delay, s/veh	55.6				61.7				73.0			
Approach LOS	E				E				E			
Timer - Assigned Phs	2			3			4			6		
Phs Duration (G+Y+Rc), s	19.5			17.5			60.0			35.0		
Change Period (Y+Rc), s	* 5.3			6.8			* 6.9			6.1		
Max Green Setting (Gmax), s	* 30			14.2			* 53			28.9		
Max Q Clear Time (g_c+l1), s	13.0			10.8			36.3			29.7		
Green Ext Time (p_c), s	1.2			0.1			5.1			0.0		
Intersection Summary												
HCM 6th Ctrl Delay	63.9											
HCM 6th LOS	E											























# HCM 6th Signalized Intersection Summary

## 1: El Rancho Dr & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	1099	62	36	1283	68	187	380	82	37	121	115
Future Volume (veh/h)	184	1099	62	36	1283	68	187	380	82	37	121	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	202	1208	50	40	1410	0	205	418	81	41	133	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	1391	620	292	1550		350	399	77	53	163	
Arrive On Green	0.13	0.39	0.39	0.16	0.44	0.00	0.20	0.26	0.26	0.03	0.09	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1522	295	1781	1870	1585
Grp Volume(v), veh/h	202	1208	50	40	1410	0	205	0	499	41	133	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1817	1781	1870	1585
Q Serve(g_s), s	16.8	47.0	3.0	2.9	55.6	0.0	15.7	0.0	39.3	3.4	10.5	0.0
Cycle Q Clear(g_c), s	16.8	47.0	3.0	2.9	55.6	0.0	15.7	0.0	39.3	3.4	10.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	223	1391	620	292	1550		350	0	476	53	163	
V/C Ratio(X)	0.90	0.87	0.08	0.14	0.91		0.59	0.00	1.05	0.77	0.82	
Avail Cap(c_a), veh/h	233	1391	620	292	1550		350	0	476	186	418	
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	0.51	0.51	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	64.7	42.1	28.7	53.6	39.5	0.0	54.7	0.0	55.4	72.3	67.3	0.0
Incr Delay (d2), s/veh	33.7	7.6	0.3	0.1	5.3	0.0	2.5	0.0	54.4	20.6	9.5	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(95%),veh/ln	14.7	29.0	2.1	2.3	30.2	0.0	11.8	0.0	34.4	3.4	9.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	98.4	49.7	28.9	53.7	44.8	0.0	57.2	0.0	109.7	92.8	76.7	0.0
LnGrp LOS	F	D	C	D	D		E	A	F	F	E	
Approach Vol, veh/h		1460			1450	A		704			174	A
Approach Delay, s/veh		55.7			45.1			94.4			80.5	
Approach LOS		E			D			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.8	44.0	31.2	65.0	34.2	19.6	24.2	72.0				
Change Period (Y+Rc), s	* 5.3	* 4.7	6.6	* 6.3	4.7	* 6.5	5.4	6.6				
Max Green Setting (Gmax), s	* 16	* 39	14.3	* 59	20.5	* 34	19.6	53.4				
Max Q Clear Time (g_c+l1), s	5.4	41.3	4.9	49.0	17.7	12.5	18.8	57.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	5.4	0.2	0.6	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			60.0									
HCM 6th LOS			E									





















# HCM 6th Signalized Intersection Summary

## 2: Sullivan Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	1724	42	12	1306	298	51	105	40	77	54	301
Future Volume (veh/h)	41	1724	42	12	1306	298	51	105	40	77	54	301
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	46	1916	35	13	1451	248	57	117	40	73	78	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	430	2216	988	20	1414	631	65	133	45	101	106	
Arrive On Green	0.48	1.00	1.00	0.01	0.40	0.40	0.14	0.14	0.14	0.06	0.06	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	476	977	334	1781	1870	1585
Grp Volume(v), veh/h	46	1916	35	13	1451	248	214	0	0	73	78	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1786	0	0	1781	1870	1585
Q Serve(g_s), s	2.1	0.0	0.0	1.1	59.7	16.7	17.6	0.0	0.0	6.0	6.2	0.0
Cycle Q Clear(g_c), s	2.1	0.0	0.0	1.1	59.7	16.7	17.6	0.0	0.0	6.0	6.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.27		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	430	2216	988	20	1414	631	243	0	0	101	106	
V/C Ratio(X)	0.11	0.86	0.04	0.65	1.03	0.39	0.88	0.00	0.00	0.72	0.74	
Avail Cap(c_a), veh/h	430	2216	988	166	1414	631	338	0	0	219	229	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.52	0.52	0.52	0.62	0.62	0.62	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.0	0.0	0.0	73.9	45.2	32.2	63.6	0.0	0.0	69.6	69.6	0.0
Incr Delay (d2), s/veh	0.1	2.6	0.0	20.3	25.8	0.2	17.5	0.0	0.0	9.4	9.5	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(95%),veh/ln	1.6	1.4	0.0	1.1	38.2	9.6	14.3	0.0	0.0	5.4	5.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.0	2.6	0.0	94.2	70.9	32.5	81.1	0.0	0.0	79.0	79.1	0.0
LnGrp LOS	C	A	A	F	F	C	F	A	A	E	E	
Approach Vol, veh/h		1997			1712			214			151	A
Approach Delay, s/veh		3.2			65.5			81.1			79.0	
Approach LOS		A			E			F			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		27.0	7.7	100.2		15.1	42.9	65.0				
Change Period (Y+Rc), s		6.6	6.0	* 6.7		6.6	6.7	* 5.3				
Max Green Setting (Gmax), s		28.4	14.0	* 64		18.4	18.3	* 60				
Max Q Clear Time (g_c+I1), s		19.6	3.1	2.0		8.2	4.1	61.7				
Green Ext Time (p_c), s		0.8	0.0	26.6		0.4	0.1	0.0				
Intersection Summary												
HCM 6th Ctrl Delay				36.3								
HCM 6th LOS				D								

# HCM 6th Signalized Intersection Summary
























## 3: Rock Blvd & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1770	70	106	1539	0	185	4	345	3	2	2
Future Volume (veh/h)	0	1770	70	106	1539	0	185	4	345	3	2	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	2034	59	122	1769	0	213	5	397	3	2	2
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1	2022	902	147	2459	0	235	4	374	34	23	9
Arrive On Green	0.00	0.76	0.76	0.08	0.69	0.00	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1781	3554	1585	1781	3647	0	797	19	1585	0	96	38
Grp Volume(v), veh/h	0	2034	59	122	1769	0	218	0	397	7	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	0	816	0	1585	134	0	0
Q Serve(g_s), s	0.0	85.3	1.4	10.1	45.8	0.0	0.0	0.0	35.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	85.3	1.4	10.1	45.8	0.0	35.4	0.0	35.4	35.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	0.98		1.00	0.43		0.29
Lane Grp Cap(c), veh/h	1	2022	902	147	2459	0	240	0	374	66	0	0
V/C Ratio(X)	0.00	1.01	0.07	0.83	0.72	0.00	0.91	0.00	1.06	0.11	0.00	0.00
Avail Cap(c_a), veh/h	222	2022	902	343	2459	0	240	0	374	66	0	0
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.34	0.34	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	18.3	8.0	67.8	14.2	0.0	59.4	0.0	57.3	47.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	13.2	0.0	11.3	1.0	0.0	34.7	0.0	63.7	0.7	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(95%),veh/ln	0.0	31.2	0.9	8.7	23.4	0.0	16.2	0.0	28.9	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	31.4	8.1	79.1	15.2	0.0	94.1	0.0	121.0	48.2	0.0	0.0
LnGrp LOS	A	F	A	E	B	A	F	A	F	D	A	A
Approach Vol, veh/h	2093					1891		615		7		
Approach Delay, s/veh	30.8					19.3		111.4		48.2		
Approach LOS	C					B		F		D		
Timer - Assigned Phs	2		3		4		6		7		8	
Phs Duration (G+Y+Rc), s	40.4		18.5		91.1		40.4		0.0		109.6	
Change Period (Y+Rc), s	* 5		* 6.1		5.8		* 5		6.3		5.8	
Max Green Setting (Gmax), s	* 35		* 29		69.2		* 35		18.7		79.2	
Max Q Clear Time (g_c+I1), s	37.4		12.1		87.3		37.4		0.0		47.8	
Green Ext Time (p_c), s	0.0		0.2		0.0		0.0		0.0		16.9	
Intersection Summary												
HCM 6th Ctrl Delay	36.9											
HCM 6th LOS	D											















# HCM 6th Signalized Intersection Summary

## 4: McCarran Blvd & E Prater Way
































												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	644	187	152	423	250	299	1138	349	233	495	116
Future Volume (veh/h)	226	644	187	152	423	250	299	1138	349	233	495	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	251	716	0	169	470	0	332	1264	0	259	550	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	318	765		219	658		388	1412		281	1573	
Arrive On Green	0.12	0.22	0.00	0.09	0.19	0.00	0.11	0.40	0.00	0.16	0.44	0.00
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	251	716	0	169	470	0	332	1264	0	259	550	0
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	18.0	31.7	0.0	12.2	19.9	0.0	15.1	53.2	0.0	22.9	16.3	0.0
Cycle Q Clear(g_c), s	18.0	31.7	0.0	12.2	19.9	0.0	15.1	53.2	0.0	22.9	16.3	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	318	765		219	658		388	1412		281	1573	
V/C Ratio(X)	0.79	0.94		0.77	0.71		0.85	0.90		0.92	0.35	
Avail Cap(c_a), veh/h	318	784		328	886		626	1412		323	1573	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.6	61.7	0.0	49.1	61.2	0.0	69.7	45.1	0.0	66.4	29.4	0.0
Incr Delay (d2), s/veh	12.5	18.1	0.0	6.3	1.8	0.0	6.5	9.1	0.0	28.9	0.6	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(95%),veh/ln	14.1	22.9	0.0	9.8	14.1	0.0	11.3	32.9	0.0	18.4	11.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	79.8	0.0	55.4	63.0	0.0	76.3	54.2	0.0	95.3	30.0	0.0
LnGrp LOS	E	E		E	E		E	D		F	C	
Approach Vol, veh/h		967	A		639	A		1596	A		809	A
Approach Delay, s/veh		74.2			61.0			58.8			50.9	
Approach LOS		E			E			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.2	69.1	20.1	39.6	24.0	76.3	25.0	34.7				
Change Period (Y+Rc), s	6.0	5.5	* 5.7	* 5.1	6.0	5.5	5.5	5.1				
Max Green Setting (Gmax), s	29.0	49.5	* 24	* 35	29.0	49.5	19.5	39.9				
Max Q Clear Time (g_c+I1), s	24.9	55.2	14.2	33.7	17.1	18.3	20.0	21.9				
Green Ext Time (p_c), s	0.3	0.0	0.3	0.8	0.9	3.7	0.0	2.8				
Intersection Summary												
HCM 6th Ctrl Delay			61.3									
HCM 6th LOS			E									

# HCM 6th Signalized Intersection Summary 5: McCarran Blvd & Nichols Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	71	47	299	58	53	101	1769	151	98	1159	79
Future Volume (veh/h)	124	71	47	299	58	53	101	1769	151	98	1159	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	133	76	46	366	0	57	109	1902	146	105	1246	76
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	99	60	430	0	191	439	2783	213	125	1984	121
Arrive On Green	0.09	0.09	0.09	0.12	0.00	0.12	0.25	0.58	0.58	0.07	0.40	0.40
Sat Flow, veh/h	1781	1091	660	3563	0	1585	1781	4838	370	1781	4920	300
Grp Volume(v), veh/h	133	0	122	366	0	57	109	1336	712	105	862	460
Grp Sat Flow(s),veh/h/ln	1781	0	1751	1781	0	1585	1781	1702	1804	1781	1702	1816
Q Serve(g_s), s	11.7	0.0	10.9	16.1	0.0	5.2	7.9	43.9	44.3	9.3	32.4	32.4
Cycle Q Clear(g_c), s	11.7	0.0	10.9	16.1	0.0	5.2	7.9	43.9	44.3	9.3	32.4	32.4
Prop In Lane	1.00		0.38	1.00		1.00	1.00		0.21	1.00		0.17
Lane Grp Cap(c), veh/h	162	0	159	430	0	191	439	1958	1038	125	1372	732
V/C Ratio(X)	0.82	0.00	0.77	0.85	0.00	0.30	0.25	0.68	0.69	0.84	0.63	0.63
Avail Cap(c_a), veh/h	286	0	281	661	0	294	439	1958	1038	155	1372	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
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	71.4	0.0	71.0	68.9	0.0	64.1	48.4	23.8	23.8	73.5	38.2	38.2
Incr Delay (d2), s/veh	9.8	0.0	7.4	6.5	0.0	0.9	0.3	1.9	3.7	26.9	2.2	4.1
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(95%),veh/ln	9.8	0.0	9.0	12.4	0.0	0.1	6.4	24.5	26.6	8.9	19.9	21.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.2	0.0	78.5	75.4	0.0	65.0	48.7	25.7	27.5	100.3	40.4	42.2
LnGrp LOS	F	A	E	E	A	E	D	C	C	F	D	D
Approach Vol, veh/h	255			423			2157			1427		
Approach Delay, s/veh	79.9			74.0			27.5			45.4		
Approach LOS	E			E			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.4	98.1		24.6	45.5	70.0		19.9				
Change Period (Y+Rc), s	6.1	* 6.1		* 5.3	6.1	5.5		5.3				
Max Green Setting (Gmax), s	13.9	* 69		* 30	17.9	64.5		25.7				
Max Q Clear Time (g_c+I1), s	11.3	46.3		18.1	9.9	34.4		13.7				
Green Ext Time (p_c), s	0.0	15.0		1.2	0.1	10.2		0.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				41.2								
HCM 6th LOS				D								
























# HCM 6th Signalized Intersection Summary

## 6: McCarran Blvd & E Greg St
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 			  		 	  	
Traffic Volume (veh/h)	211	213	29	219	224	246	107	885	402	99	681	96
Future Volume (veh/h)	211	213	29	219	224	246	107	885	402	99	681	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	229	232	29	238	243	0	116	962	0	108	740	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	5	5	5	5	5	5
Cap, veh/h	281	298	37	289	329		217	1170		770	2753	
Arrive On Green	0.08	0.09	0.09	0.08	0.09	0.00	0.13	0.23	0.00	0.44	0.55	0.00
Sat Flow, veh/h	3456	3183	393	3456	3554	1585	1739	4985	1547	1739	5149	0
Grp Volume(v), veh/h	229	128	133	238	243	0	116	962	0	108	740	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1800	1728	1777	1585	1739	1662	1547	1739	1662	0
Q Serve(g_s), s	10.4	11.3	11.5	10.8	10.7	0.0	10.0	29.3	0.0	5.9	12.5	0.0
Cycle Q Clear(g_c), s	10.4	11.3	11.5	10.8	10.7	0.0	10.0	29.3	0.0	5.9	12.5	0.0
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	281	166	168	289	329		217	1170		770	2753	
V/C Ratio(X)	0.82	0.77	0.79	0.82	0.74		0.53	0.82		0.14	0.27	
Avail Cap(c_a), veh/h	525	431	436	482	817		261	1620		770	2753	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	72.3	70.9	71.0	72.2	70.7	0.0	65.6	58.1	0.0	26.5	18.8	0.0
Incr Delay (d2), s/veh	5.7	7.4	8.0	5.9	3.2	0.0	2.0	6.6	0.0	0.1	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(95%),veh/ln	8.5	9.3	9.6	8.7	8.7	0.0	8.0	18.7	0.0	4.4	8.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.0	78.3	78.9	78.0	73.9	0.0	67.7	64.7	0.0	26.6	18.9	0.0
LnGrp LOS	E	E	E	E	E		E	E		C	B	
Approach Vol, veh/h		490			481	A		1078	A		848	A
Approach Delay, s/veh		78.3			76.0			65.0			19.9	
Approach LOS		E			E			E			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	77.2	43.5	19.1	20.2	26.0	94.8	18.7	20.5				
Change Period (Y+Rc), s	* 6.4	6.0	* 5.7	* 5.2	* 6	6.4	* 5.7	* 5.7				
Max Green Setting (Gmax), s	* 24	52.0	* 22	* 39	* 24	51.6	* 24	* 37				
Max Q Clear Time (g_c+I1), s	7.9	31.3	12.8	13.5	12.0	14.5	12.4	12.7				
Green Ext Time (p_c), s	0.2	6.3	0.5	1.4	0.2	5.3	0.6	1.5				
Intersection Summary												
HCM 6th Ctrl Delay			55.9									
HCM 6th LOS			E									

# HCM 6th Signalized Intersection Summary

## 7: McCarran Blvd & Mira Loma Dr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	251	14	293	162	148	68	685	726	328	502	58
Future Volume (veh/h)	40	251	14	293	162	148	68	685	726	328	502	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	48	302	16	353	195	0	82	825	656	395	605	52
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	62	399	21	379	560		441	1744	541	452	1109	344
Arrive On Green	0.04	0.12	0.12	0.21	0.30	0.00	0.25	0.35	0.35	0.13	0.22	0.22
Sat Flow, veh/h	1781	3433	181	1781	1870	1585	1739	4985	1547	3374	4985	1547
Grp Volume(v), veh/h	48	156	162	353	195	0	82	825	656	395	605	52
Grp Sat Flow(s),veh/h/ln	1781	1777	1838	1781	1870	1585	1739	1662	1547	1687	1662	1547
Q Serve(g_s), s	3.2	10.2	10.3	23.4	9.8	0.0	4.4	15.5	21.9	13.8	12.9	2.7
Cycle Q Clear(g_c), s	3.2	10.2	10.3	23.4	9.8	0.0	4.4	15.5	21.9	13.8	12.9	2.7
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	62	207	214	379	560		441	1744	541	452	1109	344
V/C Ratio(X)	0.77	0.75	0.76	0.93	0.35		0.19	0.47	1.21	0.87	0.55	0.15
Avail Cap(c_a), veh/h	304	456	472	379	560		441	1744	541	495	1109	344
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.4	51.4	51.4	46.4	32.9	0.0	35.1	30.4	10.6	51.0	41.3	26.4
Incr Delay (d2), s/veh	17.7	5.5	5.5	32.0	0.4	0.0	0.2	0.9	111.6	15.0	1.9	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(95%),veh/ln	3.2	8.5	8.7	19.7	8.0	0.0	3.3	10.2	35.7	10.8	9.1	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.1	56.8	56.9	78.4	33.2	0.0	35.3	31.3	122.2	66.0	43.2	27.4
LnGrp LOS	E	E	E	E	C		D	C	F	E	D	C
Approach Vol, veh/h		366			548	A		1563			1052	
Approach Delay, s/veh		59.2			62.3			69.7			51.0	
Approach LOS		E			E			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.5	48.7	30.7	19.2	37.1	33.0	8.7	41.1				
Change Period (Y+Rc), s	5.4	6.7	* 5.2	* 5.2	6.7	* 6.3	4.5	* 5.2				
Max Green Setting (Gmax), s	17.6	24.3	* 26	* 31	15.2	* 27	20.5	* 36				
Max Q Clear Time (g_c+I1), s	15.8	23.9	25.4	12.3	6.4	14.9	5.2	11.8				
Green Ext Time (p_c), s	0.3	0.3	0.0	1.7	0.1	3.1	0.1	1.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			61.9									
HCM 6th LOS			E									
























# HCM 6th Signalized Intersection Summary 8: Longley Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	795	47	494	492	50	148	497	1029	108	389	164
Future Volume (veh/h)	166	795	47	494	492	50	148	497	1029	108	389	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	182	874	0	543	541	0	163	546	0	119	427	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	244	938		580	1124		193	663		145	541	
Arrive On Green	0.07	0.27	0.00	0.12	0.32	0.00	0.11	0.19	0.00	0.08	0.15	0.00
Sat Flow, veh/h	3374	3561	0	4904	3469	1547	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	182	874	0	543	541	0	163	546	0	119	427	0
Grp Sat Flow(s),veh/h/ln	1687	1735	0	1635	1735	1547	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	6.3	29.5	0.0	13.2	15.0	0.0	10.8	17.7	0.0	7.9	13.9	0.0
Cycle Q Clear(g_c), s	6.3	29.5	0.0	13.2	15.0	0.0	10.8	17.7	0.0	7.9	13.9	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	244	938		580	1124		193	663		145	541	
V/C Ratio(X)	0.75	0.93		0.94	0.48		0.84	0.82		0.82	0.79	
Avail Cap(c_a), veh/h	484	963		580	1124		196	986		217	1028	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.6	42.7	0.0	52.4	32.5	0.0	52.5	46.9	0.0	54.2	49.0	0.0
Incr Delay (d2), s/veh	4.5	15.0	0.0	22.7	1.5	0.0	26.8	3.6	0.0	13.9	2.6	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(95%),veh/ln	5.0	20.1	0.0	10.6	10.3	0.0	10.1	12.5	0.0	7.2	10.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.1	57.7	0.0	75.2	34.0	0.0	79.2	50.6	0.0	68.2	51.6	0.0
LnGrp LOS	E	E		E	C		E	D		E	D	
Approach Vol, veh/h		1056	A		1084	A		709	A		546	A
Approach Delay, s/veh		58.0			54.6			57.2			55.2	
Approach LOS		E			D			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.2	29.1	20.9	39.1	19.7	24.6	14.5	45.6				
Change Period (Y+Rc), s	5.4	6.7	6.7	* 6.7	6.7	* 6.3	5.8	6.7				
Max Green Setting (Gmax), s	14.6	33.3	14.2	* 33	13.2	* 35	17.2	30.3				
Max Q Clear Time (g_c+I1), s	9.9	19.7	15.2	31.5	12.8	15.9	8.3	17.0				
Green Ext Time (p_c), s	0.1	2.7	0.0	1.0	0.0	2.4	0.3	2.6				
Intersection Summary												
HCM 6th Ctrl Delay			56.3									
HCM 6th LOS			E									



































# HCM 6th Signalized Intersection Summary

## 9: S Virginia St & McCarran Blvd



























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	363	653	235	149	678	564	218	1048	209	462	814	82
Future Volume (veh/h)	363	653	235	149	678	564	218	1048	209	462	814	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1811	1811	1811	1811	1811	1811	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	390	702	0	160	645	511	234	1127	0	497	875	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	6	6	6	2	2	2	2	2	2
Cap, veh/h	453	1083		184	690	585	286	1446		1445	1547	
Arrive On Green	0.14	0.22	0.00	0.11	0.19	0.19	0.08	0.22	0.00	0.29	0.44	0.00
Sat Flow, veh/h	3346	4944	1535	1725	3622	3070	3456	6696	0	5023	3554	1585
Grp Volume(v), veh/h	390	702	0	160	645	511	234	1127	0	497	875	0
Grp Sat Flow(s),veh/h/ln	1673	1648	1535	1725	1811	1535	1728	1609	0	1674	1777	1585
Q Serve(g_s), s	17.1	19.4	0.0	13.7	26.3	13.1	10.0	24.7	0.0	11.7	27.7	0.0
Cycle Q Clear(g_c), s	17.1	19.4	0.0	13.7	26.3	13.1	10.0	24.7	0.0	11.7	27.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	453	1083		184	690	585	286	1446		1445	1547	
V/C Ratio(X)	0.86	0.65		0.87	0.94	0.87	0.82	0.78		0.34	0.57	
Avail Cap(c_a), veh/h	772	1111		340	693	587	452	1446		1445	1547	
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)	0.91	0.91	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	63.5	53.3	0.0	66.0	59.8	17.3	67.7	54.7	0.0	42.2	31.7	0.0
Incr Delay (d2), s/veh	4.7	1.2	0.0	11.7	19.9	13.7	6.4	4.2	0.0	0.1	1.5	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(95%),veh/ln	11.7	12.4	0.0	10.7	19.8	9.5	8.1	15.5	0.0	8.4	17.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.2	54.5	0.0	77.7	79.7	31.0	74.1	58.9	0.0	42.4	33.2	0.0
LnGrp LOS	E	D		E	E	C	E	E		D	C	
Approach Vol, veh/h	1092		A	1316			1361		A	1372		A
Approach Delay, s/veh	59.4			60.6			61.5			36.5		
Approach LOS	E			E			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	49.4	40.0	21.4	39.2	17.8	71.6	25.7	34.9				
Change Period (Y+Rc), s	6.3	* 6.3	5.4	6.3	5.4	6.3	5.4	6.3				
Max Green Setting (Gmax), s	29.6	* 34	29.6	33.7	19.6	43.7	34.6	28.7				
Max Q Clear Time (g_c+I1), s	13.7	26.7	15.7	21.4	12.0	29.7	19.1	28.3				
Green Ext Time (p_c), s	1.6	3.8	0.3	3.5	0.4	4.7	1.2	0.3				
Intersection Summary												
HCM 6th Ctrl Delay	54.1											
HCM 6th LOS	D											

# HCM 6th Signalized Intersection Summary
























## 10: Kietzke Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 		 	 	
Traffic Volume (veh/h)	193	749	481	80	856	160	909	214	53	267	53	246
Future Volume (veh/h)	193	749	481	80	856	160	909	214	53	267	53	246
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	214	832	0	89	951	0	1010	238	0	297	59	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	1543		111	1181		1235	313		1048	142	
Arrive On Green	0.13	0.30	0.00	0.06	0.23	0.00	0.36	0.09	0.00	0.30	0.04	0.00
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	214	832	0	89	951	0	1010	238	0	297	59	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	17.8	20.4	0.0	7.4	26.4	0.0	39.8	9.8	0.0	9.8	2.4	0.0
Cycle Q Clear(g_c), s	17.8	20.4	0.0	7.4	26.4	0.0	39.8	9.8	0.0	9.8	2.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	237	1543		111	1181		1235	313		1048	142	
V/C Ratio(X)	0.90	0.54		0.80	0.81		0.82	0.76		0.28	0.42	
Avail Cap(c_a), veh/h	280	1543		352	1181		1235	1035		1048	348	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.53	0.53	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	64.1	43.6	0.0	69.4	54.5	0.0	43.8	66.8	0.0	39.8	70.3	0.0
Incr Delay (d2), s/veh	27.4	0.4	0.0	7.0	3.2	0.0	6.1	3.8	0.0	0.1	1.9	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(95%),veh/ln	14.8	13.3	0.0	5.8	15.5	0.0	24.5	8.1	0.0	7.5	2.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.4	44.0	0.0	76.4	57.7	0.0	49.9	70.6	0.0	40.0	72.2	0.0
LnGrp LOS	F	D		E	E		D	E		D	E	
Approach Vol, veh/h		1046	A		1040	A		1248	A		356	A
Approach Delay, s/veh		53.7			59.3			53.8			45.3	
Approach LOS		D			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	51.8	19.5	14.7	51.6	59.0	12.3	25.4	41.0				
Change Period (Y+Rc), s	6.3	* 6.3	5.4	6.3	5.4	6.3	5.4	6.3				
Max Green Setting (Gmax), s	24.6	* 44	29.6	28.7	53.6	14.7	23.6	34.7				
Max Q Clear Time (g_c+I1), s	11.8	11.8	9.4	22.4	41.8	4.4	19.8	28.4				
Green Ext Time (p_c), s	0.8	1.4	0.2	2.7	3.2	0.1	0.2	3.1				
Intersection Summary												
HCM 6th Ctrl Delay			54.5									
HCM 6th LOS			D									

























# HCM 6th Signalized Intersection Summary 11: Lakeside Dr & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	55	950	93	245	1566	446	210	164	188	241	166	71
Future Volume (veh/h)	55	950	93	245	1566	446	210	164	188	241	166	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	59	1022	0	263	1684	0	226	176	151	259	178	57
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	1154		411	1822		306	211	179	311	231	195
Arrive On Green	0.04	0.32	0.00	0.23	0.51	0.00	0.12	0.11	0.11	0.14	0.12	0.12
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	59	1022	0	263	1684	0	226	176	151	259	178	57
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	4.9	40.9	0.0	20.0	65.8	0.0	16.6	13.8	14.0	19.2	13.8	4.9
Cycle Q Clear(g_c), s	4.9	40.9	0.0	20.0	65.8	0.0	16.6	13.8	14.0	19.2	13.8	4.9
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	76	1154		411	1822		306	211	179	311	231	195
V/C Ratio(X)	0.78	0.89		0.64	0.92		0.74	0.83	0.84	0.83	0.77	0.29
Avail Cap(c_a), veh/h	173	1154		411	1822		325	304	258	311	304	258
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)	0.83	0.83	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.1	48.0	0.0	52.1	33.8	0.0	50.5	65.2	65.2	50.4	63.7	59.8
Incr Delay (d2), s/veh	13.3	8.6	0.0	7.4	9.4	0.0	8.1	12.5	15.6	17.4	8.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.5	25.5	0.0	14.7	38.0	0.0	12.8	11.7	10.5	15.2	11.5	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.4	56.6	0.0	59.5	43.2	0.0	58.7	77.6	80.9	67.8	72.2	60.6
LnGrp LOS	F	E		E	D		E	E	F	E	E	E
Approach Vol, veh/h	1081		A	1947		A	553		494			
Approach Delay, s/veh	58.1			45.4			70.8		68.6			
Approach LOS	E			D			E		E			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	22.5	40.0	55.0	23.4	24.1	11.8	83.2				
Change Period (Y+Rc), s	* 4.7	5.6	5.4	6.3	* 4.7	5.6	5.4	6.3				
Max Green Setting (Gmax), s	* 20	24.4	34.6	48.7	* 20	24.4	14.6	68.7				
Max Q Clear Time (g_c+I1), s	21.2	16.0	22.0	42.9	18.6	15.8	6.9	67.8				
Green Ext Time (p_c), s	0.0	0.9	0.6	3.1	0.1	0.7	0.1	0.8				
Intersection Summary												
HCM 6th Ctrl Delay	55.1											
HCM 6th LOS	E											

# HCM 6th Signalized Intersection Summary 12: Plumas St & McCarran Blvd























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	703	98	110	1481	288	117	133	152	240	136	32
Future Volume (veh/h)	19	703	98	110	1481	288	117	133	152	240	136	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	21	781	98	122	1646	240	130	148	127	267	151	33
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	1516	190	246	2078	927	199	236	200	447	336	73
Arrive On Green	0.02	0.48	0.48	0.28	1.00	1.00	0.13	0.13	0.13	0.07	0.23	0.23
Sat Flow, veh/h	1781	3177	399	1781	3554	1585	1200	1870	1585	3456	1487	325
Grp Volume(v), veh/h	21	437	442	122	1646	240	130	148	127	267	0	184
Grp Sat Flow(s),veh/h/ln	1781	1777	1799	1781	1777	1585	1200	1870	1585	1728	0	1812
Q Serve(g_s), s	1.7	25.6	25.6	8.6	0.0	0.0	15.9	11.3	11.4	9.9	0.0	13.1
Cycle Q Clear(g_c), s	1.7	25.6	25.6	8.6	0.0	0.0	15.9	11.3	11.4	9.9	0.0	13.1
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	42	848	859	246	2078	927	199	236	200	447	0	410
V/C Ratio(X)	0.51	0.51	0.52	0.50	0.79	0.26	0.65	0.63	0.64	0.60	0.00	0.45
Avail Cap(c_a), veh/h	280	848	859	246	2078	927	246	308	261	447	0	480
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.44	0.44	0.44	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.4	27.2	27.2	49.9	0.0	0.0	64.2	62.2	62.3	51.5	0.0	50.0
Incr Delay (d2), s/veh	9.2	2.2	2.2	3.1	1.4	0.3	4.3	2.7	3.3	2.2	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	16.5	16.7	5.8	0.7	0.1	8.8	9.4	8.3	7.9	0.0	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.6	29.4	29.4	53.1	1.4	0.3	68.6	64.9	65.6	53.6	0.0	50.8
LnGrp LOS	F	C	C	D	A	A	E	E	E	D	A	D
Approach Vol, veh/h		900			2008			405			451	
Approach Delay, s/veh		30.6			4.4			66.3			52.5	
Approach LOS		C			A			E			D	
Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	15.0	24.2	26.0	79.0		39.2	9.9	95.1				
Change Period (Y+Rc), s	4.5	* 5.3	* 5.3	7.4		* 5.3	6.4	* 7.4				
Max Green Setting (Gmax), s	10.5	* 25	* 21	71.6		* 40	23.6	* 69				
Max Q Clear Time (g_c+I1), s	11.9	17.9	10.6	27.6		15.1	3.7	2.0				
Green Ext Time (p_c), s	0.0	1.0	0.2	5.8		1.0	0.0	22.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				23.1								
HCM 6th LOS				C								

# HCM 6th Signalized Intersection Summary 13: McCarran Blvd & Caughlin Pkwy/Cashil Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	70	229	25	63	31	281	1130	37	59	601	213
Future Volume (veh/h)	235	70	229	25	63	31	281	1130	37	59	601	213
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	294	88	215	31	79	29	351	1412	41	74	751	200
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	323	402	340	40	105	89	292	1995	58	93	1265	337
Arrive On Green	0.18	0.21	0.21	0.02	0.06	0.06	0.16	0.57	0.57	0.05	0.46	0.46
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3527	102	1781	2775	739
Grp Volume(v), veh/h	294	88	215	31	79	29	351	711	742	74	481	470
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1852	1781	1777	1737
Q Serve(g_s), s	24.3	5.8	18.5	2.6	6.2	2.6	24.6	43.4	43.6	6.2	30.3	30.3
Cycle Q Clear(g_c), s	24.3	5.8	18.5	2.6	6.2	2.6	24.6	43.4	43.6	6.2	30.3	30.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.43
Lane Grp Cap(c), veh/h	323	402	340	40	105	89	292	1005	1048	93	810	792
V/C Ratio(X)	0.91	0.22	0.63	0.77	0.75	0.33	1.20	0.71	0.71	0.80	0.59	0.59
Avail Cap(c_a), veh/h	683	402	340	683	166	141	292	1005	1048	146	810	792
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	60.2	48.5	53.5	72.9	69.8	68.1	62.7	23.6	23.6	70.3	30.4	30.4
Incr Delay (d2), s/veh	9.8	0.3	3.7	26.0	10.4	2.1	118.7	4.2	4.1	14.7	1.2	1.2
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(95%),veh/ln	17.6	5.0	12.4	2.7	6.0	2.0	30.4	25.1	26.0	5.6	18.6	18.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.0	48.8	57.2	98.9	80.2	70.2	181.4	27.7	27.7	85.0	31.6	31.6
LnGrp LOS	E	D	E	F	F	E	F	C	C	F	C	C
Approach Vol, veh/h		597			139			1804			1025	
Approach Delay, s/veh		62.3			82.3			57.6			35.5	
Approach LOS		E			F			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.5	91.2	7.9	37.4	30.0	74.7	31.7	13.6				
Change Period (Y+Rc), s	5.7	* 6.3	4.5	* 5.2	5.4	6.3	4.5	* 5.2				
Max Green Setting (Gmax), s	12.3	* 46	57.5	* 13	24.6	33.7	57.5	* 13				
Max Q Clear Time (g_c+I1), s	8.2	45.6	4.6	20.5	26.6	32.3	26.3	8.2				
Green Ext Time (p_c), s	0.0	0.2	0.1	0.0	0.0	0.8	0.9	0.2				
Intersection Summary												
HCM 6th Ctrl Delay			53.0									
HCM 6th LOS			D									



























# HCM 6th Signalized Intersection Summary 14: McCarran Blvd & Caughlin Pkwy/Plumb Ln

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	60	55	46	65	295	60	1177	65	248	840	171
Future Volume (veh/h)	153	60	55	46	65	295	60	1177	65	248	840	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	178	70	48	53	76	257	70	1369	68	288	977	179
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	357	435	369	333	330	280	89	1457	72	290	1595	292
Arrive On Green	0.09	0.23	0.23	0.03	0.18	0.18	0.05	0.42	0.42	0.16	0.53	0.53
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3446	171	1781	2999	549
Grp Volume(v), veh/h	178	70	48	53	76	257	70	705	732	288	578	578
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1840	1781	1777	1772
Q Serve(g_s), s	12.0	4.5	3.6	3.6	5.2	23.9	5.8	56.9	57.2	24.2	33.9	34.0
Cycle Q Clear(g_c), s	12.0	4.5	3.6	3.6	5.2	23.9	5.8	56.9	57.2	24.2	33.9	34.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		0.31
Lane Grp Cap(c), veh/h	357	435	369	333	330	280	89	751	778	290	945	942
V/C Ratio(X)	0.50	0.16	0.13	0.16	0.23	0.92	0.79	0.94	0.94	0.99	0.61	0.61
Avail Cap(c_a), veh/h	357	435	369	492	379	321	164	751	778	290	945	942
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	43.4	45.9	45.5	48.2	53.0	60.7	70.5	41.4	41.5	62.7	24.4	24.4
Incr Delay (d2), s/veh	1.1	0.2	0.2	0.2	0.4	28.2	14.4	20.7	20.8	51.1	1.2	1.2
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(95%),veh/ln	9.4	3.9	2.6	3.0	4.6	17.6	5.3	36.7	38.0	21.1	19.9	19.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	46.1	45.7	48.4	53.4	89.0	84.9	62.1	62.3	113.8	25.5	25.6
LnGrp LOS	D	D	D	D	D	F	F	E	E	F	C	C
Approach Vol, veh/h	296				386				1507			
Approach Delay, s/veh	45.1				76.4				63.3		43.2	
Approach LOS	D				E				E		D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	70.6	9.6	39.8	13.7	87.0	18.0	31.4				
Change Period (Y+Rc), s	5.6	7.2	4.5	4.9	6.2	* 7.2	4.5	* 4.9				
Max Green Setting (Gmax), s	24.4	59.8	18.5	25.1	13.8	* 71	13.5	* 30				
Max Q Clear Time (g_c+l1), s	26.2	59.2	5.6	6.5	7.8	36.0	14.0	25.9				
Green Ext Time (p_c), s	0.0	0.4	0.1	0.4	0.1	8.1	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay	55.2											
HCM 6th LOS	E											

























# HCM 6th Signalized Intersection Summary

## 15: McCarran Blvd & Mayberry Dr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	160	146	163	183	382	195	1278	133	280	949	164
Future Volume (veh/h)	124	160	146	163	183	382	195	1278	133	280	949	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	144	186	0	190	213	0	227	1486	0	326	1103	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	222	214		249	248		356	1536		346	1493	
Arrive On Green	0.08	0.11	0.00	0.10	0.13	0.00	0.20	0.43	0.00	0.19	0.42	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	144	186	0	190	213	0	227	1486	0	326	1103	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	10.6	14.7	0.0	14.0	16.7	0.0	17.5	61.2	0.0	27.1	39.2	0.0
Cycle Q Clear(g_c), s	10.6	14.7	0.0	14.0	16.7	0.0	17.5	61.2	0.0	27.1	39.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	222	214		249	248		356	1536		346	1493	
V/C Ratio(X)	0.65	0.87		0.76	0.86		0.64	0.97		0.94	0.74	
Avail Cap(c_a), veh/h	254	304		249	303		356	1536		356	1493	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.27	0.27	0.00
Uniform Delay (d), s/veh	53.1	65.3	0.0	52.5	63.7	0.0	55.0	41.5	0.0	59.6	36.6	0.0
Incr Delay (d2), s/veh	4.6	16.8	0.0	13.2	18.5	0.0	3.7	16.4	0.0	13.0	0.9	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(95%),veh/ln	8.7	12.6	0.0	11.6	14.2	0.0	12.7	37.7	0.0	16.2	19.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.8	82.1	0.0	65.6	82.2	0.0	58.7	57.9	0.0	72.6	37.5	0.0
LnGrp LOS	E	F		E	F		E	E		E	D	
Approach Vol, veh/h		330	A		403	A		1713	A		1429	A
Approach Delay, s/veh		71.5			74.4			58.0			45.5	
Approach LOS		E			E			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	35.2	71.9	20.0	22.9	37.1	70.0	17.3	25.6				
Change Period (Y+Rc), s	6.0	7.1	* 4.8	* 5.7	7.1	* 7	* 4.7	5.7				
Max Green Setting (Gmax), s	30.0	56.9	* 15	* 24	23.9	* 63	* 15	24.3				
Max Q Clear Time (g_c+I1), s	29.1	63.2	16.0	16.7	19.5	41.2	12.6	18.7				
Green Ext Time (p_c), s	0.1	0.0	0.0	0.5	0.2	7.4	0.1	0.5				
Intersection Summary												
HCM 6th Ctrl Delay			56.3									
HCM 6th LOS			E									

























# HCM 6th Signalized Intersection Summary

## 16: McCarran Blvd & 4th St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	94	111	247	135	106	277	1364	161	87	1038	156
Future Volume (veh/h)	216	94	111	247	135	106	277	1364	161	87	1038	156
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	245	107	0	281	153	89	315	1550	0	99	1180	133
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	266	135		319	184	156	335	1849		121	1451	647
Arrive On Green	0.15	0.07	0.00	0.18	0.10	0.10	0.38	1.00	0.00	0.07	0.41	0.41
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	245	107	0	281	153	89	315	1550	0	99	1180	133
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	20.3	8.4	0.0	23.1	12.0	6.7	25.6	0.0	0.0	8.2	44.1	5.0
Cycle Q Clear(g_c), s	20.3	8.4	0.0	23.1	12.0	6.7	25.6	0.0	0.0	8.2	44.1	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	266	135		319	184	156	335	1849		121	1451	647
V/C Ratio(X)	0.92	0.79		0.88	0.83	0.57	0.94	0.84		0.82	0.81	0.21
Avail Cap(c_a), veh/h	273	340		319	322	273	416	1849		223	1451	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.09	0.09	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.9	68.5	0.0	60.0	66.4	44.8	46.0	0.0	0.0	69.0	39.3	10.7
Incr Delay (d2), s/veh	33.9	10.1	0.0	23.4	9.2	3.2	4.2	0.5	0.0	12.6	5.1	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(95%),veh/ln	17.1	7.7	0.0	18.1	10.2	6.0	10.9	0.2	0.0	7.4	26.7	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	96.8	78.6	0.0	83.4	75.5	48.0	50.2	0.5	0.0	81.6	44.4	11.4
LnGrp LOS	F	E		F	E	D	D	A		F	D	B
Approach Vol, veh/h	352		A	523		1865		A	1412			
Approach Delay, s/veh	91.3			75.1		8.9			43.9			
Approach LOS	F			E		A			D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.4	85.2	31.9	16.5	33.2	68.4	27.4	21.0				
Change Period (Y+Rc), s	6.2	* 7.2	5.0	5.7	5.0	7.2	5.0	6.2				
Max Green Setting (Gmax), s	18.8	* 59	22.0	27.3	35.0	42.8	23.0	25.8				
Max Q Clear Time (g_c+I1), s	10.2	2.0	25.1	10.4	27.6	46.1	22.3	14.0				
Green Ext Time (p_c), s	0.1	16.2	0.0	0.4	0.5	0.0	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay	36.1											
HCM 6th LOS	D											

























# HCM 6th Signalized Intersection Summary

## 17: McCarran Blvd & Mae Anne Ave/Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	504	158	385	209	152	87	524	1159	182	91	855	293
Future Volume (veh/h)	504	158	385	209	152	87	524	1159	182	91	855	293
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	554	174	0	230	167	0	576	1274	0	100	940	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	611	204		293	194		908	2314		121	1287	
Arrive On Green	0.18	0.11	0.00	0.16	0.10	0.00	0.26	0.45	0.00	0.07	0.25	0.00
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	3456	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	554	174	0	230	167	0	576	1274	0	100	940	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1728	1702	1585	1781	1702	1585
Q Serve(g_s), s	23.6	13.7	0.0	18.6	13.2	0.0	22.1	27.3	0.0	8.3	25.3	0.0
Cycle Q Clear(g_c), s	23.6	13.7	0.0	18.6	13.2	0.0	22.1	27.3	0.0	8.3	25.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	611	204		293	194		908	2314		121	1287	
V/C Ratio(X)	0.91	0.85		0.79	0.86		0.63	0.55		0.82	0.73	
Avail Cap(c_a), veh/h	696	364		293	249		908	2314		164	1287	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.80	0.80	0.00
Uniform Delay (d), s/veh	60.5	65.6	0.0	60.1	66.2	0.0	48.9	29.9	0.0	69.0	51.4	0.0
Incr Delay (d2), s/veh	14.5	9.6	0.0	13.1	21.1	0.0	3.4	0.9	0.0	17.7	3.0	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(95%),veh/ln	17.1	11.4	0.0	14.6	12.0	0.0	14.9	16.4	0.0	7.4	15.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.0	75.2	0.0	73.2	87.2	0.0	52.3	30.8	0.0	86.7	54.4	0.0
LnGrp LOS	E	E		E	F		D	C		F	D	
Approach Vol, veh/h		728	A		397	A		1850	A		1040	A
Approach Delay, s/veh		75.0			79.1			37.5			57.5	
Approach LOS		E			E			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.4	74.4	29.7	22.2	45.8	45.0	31.3	20.5				
Change Period (Y+Rc), s	6.2	6.4	5.0	* 5.8	6.4	* 7.2	* 4.8	5.0				
Max Green Setting (Gmax), s	13.8	63.6	20.5	* 29	39.4	* 38	* 30	20.0				
Max Q Clear Time (g_c+I1), s	10.3	29.3	20.6	15.7	24.1	27.3	25.6	15.2				
Green Ext Time (p_c), s	0.1	10.0	0.0	0.7	1.8	4.2	1.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay			53.6									
HCM 6th LOS			D									



























# HCM 6th Signalized Intersection Summary

## 18: McCarran Blvd & 7th St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	369	196	182	181	206	161	258	1242	194	177	904	387
Future Volume (veh/h)	369	196	182	181	206	161	258	1242	194	177	904	387
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	415	220	152	203	231	136	290	1396	163	199	1016	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	367	368	312	338	261	221	739	2390	742	250	1634	
Arrive On Green	0.17	0.20	0.20	0.11	0.14	0.14	0.21	0.47	0.47	0.07	0.32	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	415	220	152	203	231	136	290	1396	163	199	1016	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	25.3	16.1	8.1	14.4	18.2	12.1	10.8	30.0	9.1	8.5	25.3	0.0
Cycle Q Clear(g_c), s	25.3	16.1	8.1	14.4	18.2	12.1	10.8	30.0	9.1	8.5	25.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	367	368	312	338	261	221	739	2390	742	250	1634	
V/C Ratio(X)	1.13	0.60	0.49	0.60	0.89	0.61	0.39	0.58	0.22	0.79	0.62	
Avail Cap(c_a), veh/h	367	368	312	440	312	264	739	2390	742	438	1634	
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	0.75	0.75	0.75	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.8	54.8	21.5	47.7	63.4	60.7	50.6	29.2	23.7	68.5	43.3	0.0
Incr Delay (d2), s/veh	87.4	2.6	1.2	1.7	22.1	3.1	1.2	0.8	0.5	5.7	1.8	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(95%),veh/ln	29.7	12.4	5.7	10.8	15.5	8.7	7.8	16.9	6.2	7.0	16.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	133.2	57.5	22.7	49.4	85.4	63.8	51.8	30.0	24.2	74.1	45.1	0.0
LnGrp LOS	F	E	C	D	F	E	D	C	C	E	D	
Approach Vol, veh/h		787			570			1849			1215	A
Approach Delay, s/veh		90.7			67.4			32.9			49.8	
Approach LOS		F			E			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.9	76.6	21.4	35.1	38.5	55.0	30.0	26.5				
Change Period (Y+Rc), s	6.0	6.4	4.6	5.6	6.4	* 7	* 4.7	* 5.6				
Max Green Setting (Gmax), s	19.0	58.6	25.4	24.4	29.4	* 48	* 25	* 25				
Max Q Clear Time (g_c+I1), s	10.5	32.0	16.4	18.1	12.8	27.3	27.3	20.2				
Green Ext Time (p_c), s	0.4	11.1	0.4	0.9	0.8	6.4	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay			52.3									
HCM 6th LOS			D									



# HCM 6th Signalized Intersection Summary 19: Clear Acre Ln & McCarran Blvd

























														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	 	 			 			 			 			
Traffic Volume (veh/h)	582	1226	20	61	670	177	60	339	148	172	227	281		
Future Volume (veh/h)	582	1226	20	61	670	177	60	339	148	172	227	281		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
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	693	1460	22	73	798	159	71	404	0	205	270	0		
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84		
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2		
Cap, veh/h	881	1675	25	92	915	408	82	491		288	303			
Arrive On Green	0.25	0.47	0.47	0.05	0.26	0.26	0.16	0.16	0.00	0.16	0.16	0.00		
Sat Flow, veh/h	3456	3584	54	1781	3554	1585	517	3198	0	1781	1870	1585		
Grp Volume(v), veh/h	693	723	759	73	798	159	254	221	0	205	270	0		
Grp Sat Flow(s),veh/h/ln	1728	1777	1861	1781	1777	1585	1845	1777	0	1781	1870	1585		
Q Serve(g_s), s	28.0	54.9	55.0	6.1	32.3	12.4	20.1	18.0	0.0	16.3	21.2	0.0		
Cycle Q Clear(g_c), s	28.0	54.9	55.0	6.1	32.3	12.4	20.1	18.0	0.0	16.3	21.2	0.0		
Prop In Lane	1.00		0.03	1.00		1.00	0.28		0.00	1.00		1.00		
Lane Grp Cap(c), veh/h	881	831	870	92	915	408	292	281		288	303			
V/C Ratio(X)	0.79	0.87	0.87	0.79	0.87	0.39	0.87	0.79		0.71	0.89			
Avail Cap(c_a), veh/h	881	831	870	169	1095	488	365	352		343	360			
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	0.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	52.1	35.9	35.9	70.3	53.3	46.0	61.6	60.7	0.0	59.5	61.6	0.0		
Incr Delay (d2), s/veh	4.8	12.1	11.7	14.1	6.9	0.6	16.6	9.1	0.0	5.4	20.8	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(95%),veh/ln	18.3	33.8	35.2	5.6	21.3	8.5	16.1	13.7	0.0	12.4	17.4	0.0		
Unsig. Movement Delay, s/veh														
LnGrp Delay(d),s/veh	56.8	48.0	47.6	84.4	60.2	46.6	78.2	69.8	0.0	64.9	82.3	0.0		
LnGrp LOS	E	D	D	F	E	D	E	E		E	F			
Approach Vol, veh/h	2175			1030			475			A	475		A	
Approach Delay, s/veh	50.7			59.8			74.3				74.8			
Approach LOS	D			E			E				E			
Timer - Assigned Phs	2			3			4			6			7	8
Phs Duration (G+Y+Rc), s	29.0			13.5			77.0			30.4			45.1	45.4
Change Period (Y+Rc), s	* 5.3			5.8			6.9			6.1			6.9	* 6.8
Max Green Setting (Gmax), s	* 30			14.2			53.1			28.9			21.1	* 46
Max Q Clear Time (g_c+I1), s	22.1			8.1			57.0			23.2			30.0	34.3
Green Ext Time (p_c), s	1.6			0.1			0.0			1.1			0.0	4.4
Intersection Summary														
HCM 6th Ctrl Delay	58.4													
HCM 6th LOS	E													

# **Appendix D**

## **2050 No-Action Synchro Output**



























# HCM 6th Signalized Intersection Summary

## 1: El Rancho Dr & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	658	69	42	1468	9	51	60	27	14	242	163
Future Volume (veh/h)	44	658	69	42	1468	9	51	60	27	14	242	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	48	723	56	46	1613	0	56	66	27	15	266	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	1509	673	81	1568		72	85	35	230	294	
Arrive On Green	0.03	0.42	0.42	0.09	0.88	0.00	0.04	0.07	0.07	0.13	0.16	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1261	516	1781	1870	1585
Grp Volume(v), veh/h	48	723	56	46	1613	0	56	0	93	15	266	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1777	1781	1870	1585
Q Serve(g_s), s	4.0	22.0	1.6	3.7	66.2	0.0	4.7	0.0	7.7	1.1	21.0	0.0
Cycle Q Clear(g_c), s	4.0	22.0	1.6	3.7	66.2	0.0	4.7	0.0	7.7	1.1	21.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	62	1509	673	81	1568		72	0	120	230	294	
V/C Ratio(X)	0.77	0.48	0.08	0.57	1.03		0.78	0.00	0.77	0.07	0.90	
Avail Cap(c_a), veh/h	233	1509	673	229	1568		184	0	359	230	355	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.68	0.68	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	71.8	31.2	6.5	66.8	8.8	0.0	71.3	0.0	68.8	57.4	62.1	0.0
Incr Delay (d2), s/veh	17.9	1.1	0.2	4.2	26.6	0.0	16.1	0.0	10.1	0.1	22.8	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(95%),veh/ln	3.8	14.5	2.2	3.1	13.8	0.0	4.4	0.0	7.0	0.9	17.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.7	32.3	6.8	71.0	35.4	0.0	87.4	0.0	79.0	57.5	84.9	0.0
LnGrp LOS	F	C	A	E	F		F	A	E	E	F	
Approach Vol, veh/h		827			1659			149			281	
Approach Delay, s/veh		33.9			36.4			82.1			83.4	
Approach LOS		C			D			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.9	14.8	13.4	70.0	10.6	30.1	10.6	72.8				
Change Period (Y+Rc), s	* 6.5	* 4.7	6.6	* 6.3	4.5	6.5	5.4	6.6				
Max Green Setting (Gmax), s	* 15	* 30	19.3	* 64	15.5	28.5	19.6	63.4				
Max Q Clear Time (g_c+I1), s	3.1	9.7	5.7	24.0	6.7	23.0	6.0	68.2				
Green Ext Time (p_c), s	0.0	0.4	0.1	5.3	0.1	0.7	0.1	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			42.5									
HCM 6th LOS			D									





















## HCM 6th Signalized Intersection Summary

### 2: Sullivan Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	63	1091	35	17	1270	183	35	40	15	46	98	230
Future Volume (veh/h)	63	1091	35	17	1270	183	35	40	15	46	98	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	70	1212	29	19	1411	151	39	44	16	51	109	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	1579	704	26	1436	641	49	55	20	131	137	
Arrive On Green	0.05	0.44	0.44	0.03	0.81	0.81	0.07	0.07	0.07	0.07	0.07	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	703	793	288	1781	1870	1585
Grp Volume(v), veh/h	70	1212	29	19	1411	151	99	0	0	51	109	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1783	0	0	1781	1870	1585
Q Serve(g_s), s	5.8	43.1	1.6	1.6	55.4	3.4	8.2	0.0	0.0	4.1	8.6	0.0
Cycle Q Clear(g_c), s	5.8	43.1	1.6	1.6	55.4	3.4	8.2	0.0	0.0	4.1	8.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.39		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	89	1579	704	26	1436	641	124	0	0	131	137	
V/C Ratio(X)	0.79	0.77	0.04	0.73	0.98	0.24	0.80	0.00	0.00	0.39	0.79	
Avail Cap(c_a), veh/h	229	1579	704	261	1462	652	278	0	0	242	254	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	0.74	0.74	0.74	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	70.5	35.2	23.6	72.5	13.9	8.9	68.8	0.0	0.0	66.3	68.4	0.0
Incr Delay (d2), s/veh	13.2	2.2	0.0	25.0	16.7	0.6	11.3	0.0	0.0	1.9	9.9	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(95%),veh/ln	5.3	25.3	1.0	1.6	13.0	2.1	7.5	0.0	0.0	3.5	8.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.7	37.3	23.6	97.5	30.5	9.5	80.1	0.0	0.0	68.2	78.3	0.0
LnGrp LOS	F	D	C	F	C	A	F	A	A	E	E	
Approach Vol, veh/h		1311			1581			99			160	
Approach Delay, s/veh		39.5			29.3			80.1			75.1	
Approach LOS		D			C			F			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.0	8.2	72.9		17.6	14.2	66.9				
Change Period (Y+Rc), s		6.6	6.0	6.3		6.6	* 6.7	* 6.3				
Max Green Setting (Gmax), s		23.4	22.0	58.7		20.4	* 19	* 62				
Max Q Clear Time (g_c+I1), s		10.2	3.6	45.1		10.6	7.8	57.4				
Green Ext Time (p_c), s		0.4	0.0	6.7		0.4	0.1	3.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			37.5									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary
























## 3: Rock Blvd & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1041	111	125	1593	0	77	1	81	2	5	0
Future Volume (veh/h)	0	1041	111	125	1593	0	77	1	81	2	5	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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1197	95	144	1831	0	89	1	93	2	6	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1	1512	675	169	1995	0	155	1	277	36	91	0
Arrive On Green	0.00	0.43	0.43	0.10	0.56	0.00	0.17	0.17	0.17	0.17	0.17	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3647	0	615	9	1585	35	523	0
Grp Volume(v), veh/h	0	1197	95	144	1831	0	90	0	93	8	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	0	623	0	1585	558	0	0
Q Serve(g_s), s	0.0	43.8	5.5	11.9	69.9	0.0	0.0	0.0	7.7	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	43.8	5.5	11.9	69.9	0.0	24.0	0.0	7.7	24.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	0.99		1.00	0.25		0.00
Lane Grp Cap(c), veh/h	1	1512	675	169	1995	0	157	0	277	128	0	0
V/C Ratio(X)	0.00	0.79	0.14	0.85	0.92	0.00	0.57	0.00	0.34	0.06	0.00	0.00
Avail Cap(c_a), veh/h	222	1639	731	403	1995	0	192	0	317	175	0	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)	0.00	0.83	0.83	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	37.3	26.3	66.8	29.8	0.0	61.0	0.0	54.3	52.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.1	0.1	11.2	8.2	0.0	3.3	0.0	0.7	0.2	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(95%),veh/ln	0.0	25.3	3.7	9.9	39.0	0.0	6.4	0.0	5.6	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	39.4	26.4	78.0	38.0	0.0	64.3	0.0	55.0	52.6	0.0	0.0
LnGrp LOS	A	D	C	E	D	A	E	A	D	D	A	A
Approach Vol, veh/h	1292				1975				183			
Approach Delay, s/veh	38.5				40.9				59.5			
Approach LOS	D				D				E			
Timer - Assigned Phs	2		3		4		6		7		8	
Phs Duration (G+Y+Rc), s	31.3		20.4		69.6		31.3		0.0		90.0	
Change Period (Y+Rc), s	* 5		* 6.1		5.8		* 5		6.3		5.8	
Max Green Setting (Gmax), s	* 30		* 34		69.2		* 30		18.7		84.2	
Max Q Clear Time (g_c+I1), s	26.0		13.9		45.8		26.1		0.0		71.9	
Green Ext Time (p_c), s	0.3		0.3		9.1		0.0		0.0		9.2	
Intersection Summary												
HCM 6th Ctrl Delay	41.0											
HCM 6th LOS	D											


























# HCM 6th Signalized Intersection Summary

## 4: McCarran Blvd & E Prater Way
































												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	322	180	180	276	127	108	336	128	200	856	131
Future Volume (veh/h)	69	322	180	180	276	127	108	336	128	200	856	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	77	358	0	200	307	0	120	373	0	222	951	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	444		272	665		169	983		248	1292	
Arrive On Green	0.05	0.12	0.00	0.11	0.19	0.00	0.05	0.28	0.00	0.14	0.36	0.00
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	77	358	0	200	307	0	120	373	0	222	951	0
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.6	14.7	0.0	14.3	11.5	0.0	5.1	12.7	0.0	18.4	34.9	0.0
Cycle Q Clear(g_c), s	5.6	14.7	0.0	14.3	11.5	0.0	5.1	12.7	0.0	18.4	34.9	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	254	444		272	665		169	983		248	1292	
V/C Ratio(X)	0.30	0.81		0.74	0.46		0.71	0.38		0.90	0.74	
Avail Cap(c_a), veh/h	339	765		340	945		438	983		380	1292	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.5	63.9	0.0	48.9	54.2	0.0	70.3	43.8	0.0	63.5	41.5	0.0
Incr Delay (d2), s/veh	0.7	3.5	0.0	6.2	0.5	0.0	5.5	1.1	0.0	16.3	3.8	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(95%),veh/ln	4.6	11.2	0.0	11.1	9.0	0.0	4.3	9.7	0.0	14.4	22.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.2	67.4	0.0	55.1	54.7	0.0	75.8	45.0	0.0	79.8	45.3	0.0
LnGrp LOS	D	E		E	D		E	D		E	D	
Approach Vol, veh/h		435			507			493			1173	
Approach Delay, s/veh		65.1			54.9			52.5			51.8	
Approach LOS		E			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.8	47.0	22.2	23.8	13.3	60.5	12.9	33.2				
Change Period (Y+Rc), s	6.0	5.5	* 5.7	* 5.1	6.0	* 6	5.5	5.1				
Max Green Setting (Gmax), s	32.0	41.5	* 22	* 32	19.0	* 55	14.5	39.9				
Max Q Clear Time (g_c+I1), s	20.4	14.7	16.3	16.7	7.1	36.9	7.6	13.5				
Green Ext Time (p_c), s	0.5	2.3	0.3	2.0	0.2	6.0	0.1	1.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			54.7									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary 5: McCarran Blvd & Nichols Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	20	60	434	23	20	18	549	84	17	1472	52
Future Volume (veh/h)	34	20	60	434	23	20	18	549	84	17	1472	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	37	22	59	485	0	22	19	590	81	18	1583	51
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	28	76	559	0	249	26	1804	244	25	2013	65
Arrive On Green	0.06	0.06	0.06	0.16	0.00	0.16	0.01	0.40	0.40	0.01	0.40	0.40
Sat Flow, veh/h	1781	449	1204	3563	0	1585	1781	4547	616	1781	5081	164
Grp Volume(v), veh/h	37	0	81	485	0	22	19	440	231	18	1060	574
Grp Sat Flow(s),veh/h/ln	1781	0	1654	1781	0	1585	1781	1702	1759	1781	1702	1841
Q Serve(g_s), s	3.0	0.0	7.2	19.9	0.0	1.8	1.6	13.4	13.7	1.5	41.0	41.0
Cycle Q Clear(g_c), s	3.0	0.0	7.2	19.9	0.0	1.8	1.6	13.4	13.7	1.5	41.0	41.0
Prop In Lane	1.00		0.73	1.00		1.00	1.00		0.35	1.00		0.09
Lane Grp Cap(c), veh/h	113	0	105	559	0	249	26	1350	698	25	1349	729
V/C Ratio(X)	0.33	0.00	0.77	0.87	0.00	0.09	0.73	0.33	0.33	0.72	0.79	0.79
Avail Cap(c_a), veh/h	234	0	217	824	0	367	224	1350	698	165	1349	729
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	67.2	0.0	69.2	61.7	0.0	54.1	73.6	31.4	31.4	73.6	39.7	39.7
Incr Delay (d2), s/veh	1.7	0.0	11.4	6.7	0.0	0.2	32.2	0.6	1.3	31.6	4.7	8.4
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(95%),veh/ln	2.6	0.0	6.2	14.7	0.0	1.3	1.7	9.5	10.1	1.6	24.6	27.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.9	0.0	80.6	68.5	0.0	54.2	105.8	32.0	32.7	105.3	44.4	48.1
LnGrp LOS	E	A	F	E	A	D	F	C	C	F	D	D
Approach Vol, veh/h		118			507			690			1652	
Approach Delay, s/veh		76.9			67.9			34.3			46.3	
Approach LOS		E			E			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	65.0		28.8	8.3	64.9		14.8				
Change Period (Y+Rc), s	6.1	5.5		* 5.3	6.1	5.5		5.3				
Max Green Setting (Gmax), s	13.9	59.5		* 35	18.9	54.5		19.7				
Max Q Clear Time (g_c+I1), s	3.5	15.7		21.9	3.6	43.0		9.2				
Green Ext Time (p_c), s	0.0	4.6		1.6	0.0	7.6		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			48.4									
HCM 6th LOS			D									
























# HCM 6th Signalized Intersection Summary

## 6: McCarran Blvd & E Greg St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 			  			  	
Traffic Volume (veh/h)	86	135	12	346	333	127	126	465	227	233	1245	116
Future Volume (veh/h)	86	135	12	346	333	127	126	465	227	233	1245	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	93	147	12	376	362	0	137	505	0	253	1353	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	5	5	5	5	5	5
Cap, veh/h	139	266	22	432	574		574	2389		279	1544	
Arrive On Green	0.04	0.08	0.08	0.13	0.16	0.00	0.33	0.48	0.00	0.16	0.31	0.00
Sat Flow, veh/h	3456	3330	269	3456	3554	1585	1739	4985	1547	1739	5149	0
Grp Volume(v), veh/h	93	78	81	376	362	0	137	505	0	253	1353	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1822	1728	1777	1585	1739	1662	1547	1739	1662	0
Q Serve(g_s), s	4.0	6.3	6.4	16.0	14.3	0.0	8.6	8.8	0.0	21.4	38.6	0.0
Cycle Q Clear(g_c), s	4.0	6.3	6.4	16.0	14.3	0.0	8.6	8.8	0.0	21.4	38.6	0.0
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	139	142	146	432	574		574	2389		279	1544	
V/C Ratio(X)	0.67	0.55	0.56	0.87	0.63		0.24	0.21		0.91	0.88	
Avail Cap(c_a), veh/h	445	389	398	560	896		574	2389		447	1682	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	71.0	66.4	66.4	64.4	58.7	0.0	36.6	22.6	0.0	61.9	49.0	0.0
Incr Delay (d2), s/veh	5.4	3.3	3.3	11.3	1.2	0.0	0.2	0.2	0.0	14.9	5.2	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(95%),veh/ln	3.4	5.4	5.6	12.3	10.7	0.0	6.6	6.2	0.0	15.8	23.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.4	69.6	69.7	75.8	59.9	0.0	36.8	22.8	0.0	76.8	54.3	0.0
LnGrp LOS	E	E	E	E	E		D	C		E	D	
Approach Vol, veh/h		252			738			642			1606	
Approach Delay, s/veh		72.2			68.0			25.8			57.8	
Approach LOS		E			E			C			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.4	77.9	24.5	17.2	55.5	52.9	11.7	29.9				
Change Period (Y+Rc), s	6.4	* 6	* 5.7	* 5.2	6.0	* 6.4	* 5.7	* 5.7				
Max Green Setting (Gmax), s	38.6	* 31	* 24	* 33	19.0	* 51	* 19	* 38				
Max Q Clear Time (g_c+I1), s	23.4	10.8	18.0	8.4	10.6	40.6	6.0	16.3				
Green Ext Time (p_c), s	0.6	3.0	0.7	0.8	0.2	5.9	0.2	2.2				
Intersection Summary												
HCM 6th Ctrl Delay			54.9									
HCM 6th LOS			D									
























# HCM 6th Signalized Intersection Summary

## 7: McCarran Blvd & Mira Loma Dr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	126	12	771	266	296	41	523	248	239	704	33
Future Volume (veh/h)	44	126	12	771	266	296	41	523	248	239	704	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	53	152	13	929	320	0	49	630	226	288	848	30
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	69	207	18	913	1013		106	719	223	326	860	267
Arrive On Green	0.04	0.06	0.06	0.51	0.54	0.00	0.06	0.14	0.14	0.10	0.17	0.17
Sat Flow, veh/h	1781	3316	281	1781	1870	1585	1739	4985	1547	3374	4985	1547
Grp Volume(v), veh/h	53	81	84	929	320	0	49	630	226	288	848	30
Grp Sat Flow(s),veh/h/ln	1781	1777	1820	1781	1870	1585	1739	1662	1547	1687	1662	1547
Q Serve(g_s), s	3.5	5.4	5.5	61.5	11.4	0.0	3.3	14.9	5.0	10.1	20.4	1.7
Cycle Q Clear(g_c), s	3.5	5.4	5.5	61.5	11.4	0.0	3.3	14.9	5.0	10.1	20.4	1.7
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	111	114	913	1013		106	719	223	326	860	267
V/C Ratio(X)	0.76	0.73	0.74	1.02	0.32		0.46	0.88	1.01	0.88	0.99	0.11
Avail Cap(c_a), veh/h	497	115	118	913	1013		119	719	223	326	860	267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	55.3	55.3	29.3	15.2	0.0	54.5	50.3	4.3	53.5	49.5	30.1
Incr Delay (d2), s/veh	15.7	19.8	21.2	34.3	0.2	0.0	3.1	14.2	63.7	23.5	27.5	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(95%),veh/ln	3.4	5.4	5.7	43.9	8.4	0.0	2.7	11.3	15.1	9.0	15.7	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.8	75.0	76.5	63.5	15.4	0.0	57.6	64.5	68.0	77.1	77.0	31.0
LnGrp LOS	E	E	E	F	B		E	E	F	E	E	C
Approach Vol, veh/h	218			1249			905			1166		
Approach Delay, s/veh	75.0			51.2			65.0			75.9		
Approach LOS	E			D			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	24.0	66.7	12.7	14.0	27.0	9.2	70.2				
Change Period (Y+Rc), s	5.4	6.7	* 5.2	* 5.2	6.7	* 6.3	4.5	* 5.2				
Max Green Setting (Gmax), s	11.6	17.3	* 62	* 7.8	8.2	* 21	33.5	* 36				
Max Q Clear Time (g_c+I1), s	12.1	16.9	63.5	7.5	5.3	22.4	5.5	13.4				
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0	0.0	0.0	0.1	1.9				
Intersection Summary												
HCM 6th Ctrl Delay	64.3											
HCM 6th LOS	E											

# HCM 6th Signalized Intersection Summary

























## 8: Longley Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	259	133	1183	763	40	70	472	505	51	624	161
Future Volume (veh/h)	114	259	133	1183	763	40	70	472	505	51	624	161
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	125	285	0	1300	838	0	77	519	0	56	686	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	540	378		1574	963		98	652		187	803	
Arrive On Green	0.16	0.11	0.00	0.32	0.28	0.00	0.05	0.18	0.00	0.10	0.23	0.00
Sat Flow, veh/h	3374	3561	0	4904	3469	1547	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	125	285	0	1300	838	0	77	519	0	56	686	0
Grp Sat Flow(s),veh/h/ln	1687	1735	0	1635	1735	1547	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	3.9	9.6	0.0	29.4	27.6	0.0	5.1	16.8	0.0	3.5	22.2	0.0
Cycle Q Clear(g_c), s	3.9	9.6	0.0	29.4	27.6	0.0	5.1	16.8	0.0	3.5	22.2	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	540	378		1574	963		98	652		187	803	
V/C Ratio(X)	0.23	0.75		0.83	0.87		0.79	0.80		0.30	0.85	
Avail Cap(c_a), veh/h	540	963		1574	963		137	897		187	998	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.0	51.9	0.0	37.6	41.3	0.0	56.0	46.8	0.0	49.6	44.5	0.0
Incr Delay (d2), s/veh	1.0	3.1	0.0	3.8	10.6	0.0	18.0	3.5	0.0	4.1	6.1	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(95%),veh/ln	3.0	7.5	0.0	17.3	18.4	0.0	4.9	11.9	0.0	3.1	15.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.0	55.0	0.0	41.4	51.9	0.0	74.0	50.3	0.0	53.7	50.6	0.0
LnGrp LOS	D	D		D	D		E	D		D	D	
Approach Vol, veh/h	410				2138				596			
Approach Delay, s/veh	51.9				45.5				53.4			
Approach LOS	D				D				D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.0	28.7	45.2	19.8	13.3	33.4	25.0	40.0				
Change Period (Y+Rc), s	5.4	6.7	6.7	* 6.7	6.7	* 6.3	5.8	6.7				
Max Green Setting (Gmax), s	12.6	30.3	19.2	* 33	9.2	* 34	19.2	33.3				
Max Q Clear Time (g_c+I1), s	5.5	18.8	31.4	11.6	7.1	24.2	5.9	29.6				
Green Ext Time (p_c), s	0.0	2.3	0.0	1.5	0.0	2.9	0.3	1.7				
Intersection Summary												
HCM 6th Ctrl Delay	48.4											
HCM 6th LOS	D											



































# HCM 6th Signalized Intersection Summary

## 9: S Virginia St & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	350	517	187	110	491	273	74	650	120	432	590	84
Future Volume (veh/h)	350	517	187	110	491	273	74	650	120	432	590	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1811	1811	1811	1811	1811	1811	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	376	556	0	118	628	198	80	699	0	465	634	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	6	6	6	2	2	2	2	2	2
Cap, veh/h	454	1042		144	863	244	130	1271		579	1005	
Arrive On Green	0.04	0.07	0.00	0.08	0.16	0.16	0.04	0.20	0.00	0.12	0.28	0.00
Sat Flow, veh/h	3346	4944	1535	1725	5433	1535	3456	6696	0	5023	3554	1585
Grp Volume(v), veh/h	376	556	0	118	628	198	80	699	0	465	634	0
Grp Sat Flow(s),veh/h/ln	1673	1648	1535	1725	1811	1535	1728	1609	0	1674	1777	1585
Q Serve(g_s), s	13.4	13.0	0.0	8.1	13.2	7.7	2.7	11.7	0.0	10.8	18.7	0.0
Cycle Q Clear(g_c), s	13.4	13.0	0.0	8.1	13.2	7.7	2.7	11.7	0.0	10.8	18.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	454	1042		144	863	244	130	1271		579	1005	
V/C Ratio(X)	0.83	0.53		0.82	0.73	0.81	0.62	0.55		0.80	0.63	
Avail Cap(c_a), veh/h	686	1389		282	1299	367	420	1271		820	1005	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.9	50.1	0.0	54.1	48.0	12.8	56.9	43.3	0.0	51.8	37.6	0.0
Incr Delay (d2), s/veh	4.2	0.3	0.0	10.7	1.2	8.1	4.7	1.7	0.0	3.9	3.0	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(95%),veh/ln	9.9	9.3	0.0	6.9	9.9	9.6	2.3	8.2	0.0	8.2	13.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.1	50.5	0.0	64.8	49.2	20.9	61.5	45.1	0.0	55.6	40.6	0.0
LnGrp LOS	E	D		E	D	C	E	D		E	D	
Approach Vol, veh/h	932				944				779			
Approach Delay, s/veh	54.4				45.2				46.8			
Approach LOS	D				D				D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.1	30.0	15.4	31.6	9.9	40.2	21.7	25.4				
Change Period (Y+Rc), s	6.3	* 6.3	5.4	6.3	5.4	6.3	5.4	6.3				
Max Green Setting (Gmax), s	19.6	* 24	19.6	33.7	14.6	28.7	24.6	28.7				
Max Q Clear Time (g_c+I1), s	12.8	13.7	10.1	15.0	4.7	20.7	15.4	15.2				
Green Ext Time (p_c), s	1.0	3.1	0.2	3.3	0.1	2.4	0.9	3.9				
Intersection Summary												
HCM 6th Ctrl Delay	48.3											
HCM 6th LOS	D											
























# HCM 6th Signalized Intersection Summary

## 10: Kietzke Ln & McCarran Blvd
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 		 	 	
Traffic Volume (veh/h)	118	1018	979	65	490	98	588	131	65	98	131	118
Future Volume (veh/h)	118	1018	979	65	490	98	588	131	65	98	131	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	131	1131	0	72	544	0	653	146	0	109	146	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	1221		509	2261		702	798		167	221	
Arrive On Green	0.09	0.24	0.00	0.29	0.44	0.00	0.20	0.22	0.00	0.05	0.06	0.00
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	131	1131	0	72	544	0	653	146	0	109	146	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	8.7	26.0	0.0	3.6	8.0	0.0	22.3	4.0	0.0	3.7	4.8	0.0
Cycle Q Clear(g_c), s	8.7	26.0	0.0	3.6	8.0	0.0	22.3	4.0	0.0	3.7	4.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	1221		509	2261		702	798		167	221	
V/C Ratio(X)	0.82	0.93		0.14	0.24		0.93	0.18		0.65	0.66	
Avail Cap(c_a), veh/h	291	1221		509	2261		708	850		564	702	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.77	0.77	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.7	44.6	0.0	31.9	20.8	0.0	47.0	37.6	0.0	56.1	55.0	0.0
Incr Delay (d2), s/veh	10.1	13.2	0.0	0.1	0.2	0.0	18.7	0.1	0.0	4.3	3.4	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(95%),veh/ln	7.6	17.7	0.0	2.8	5.5	0.0	16.5	3.1	0.0	3.0	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.8	57.8	0.0	32.0	21.0	0.0	65.7	37.7	0.0	60.4	58.4	0.0
LnGrp LOS	E	E		C	C		E	D		E	E	
Approach Vol, veh/h		1262			616			799			255	
Approach Delay, s/veh		58.5			22.3			60.6			59.3	
Approach LOS		E			C			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.2	33.2	40.6	35.0	30.7	13.7	16.1	59.4				
Change Period (Y+Rc), s	5.4	6.3	6.3	* 6.3	6.3	* 6.3	5.4	6.3				
Max Green Setting (Gmax), s	19.6	28.7	19.6	* 29	24.6	* 24	19.6	28.7				
Max Q Clear Time (g_c+I1), s	5.7	6.0	5.6	28.0	24.3	6.8	10.7	10.0				
Green Ext Time (p_c), s	0.2	0.7	0.1	0.5	0.1	0.6	0.2	3.2				
Intersection Summary												
HCM 6th Ctrl Delay			51.5									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary
























## 11: Lakeside Dr & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	1776	115	254	719	225	133	186	280	435	128	42
Future Volume (veh/h)	69	1776	115	254	719	225	133	186	280	435	128	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	74	1910	0	273	773	0	143	200	227	468	138	34
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	505	1333		294	911		361	256	217	442	481	408
Arrive On Green	0.38	0.50	0.00	0.16	0.26	0.00	0.08	0.14	0.14	0.20	0.26	0.26
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	74	1910	0	273	773	0	143	200	227	468	138	34
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	4.1	56.3	0.0	22.7	31.0	0.0	10.2	15.5	20.5	30.5	8.9	1.3
Cycle Q Clear(g_c), s	4.1	56.3	0.0	22.7	31.0	0.0	10.2	15.5	20.5	30.5	8.9	1.3
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	505	1333		294	911		361	256	217	442	481	408
V/C Ratio(X)	0.15	1.43		0.93	0.85		0.40	0.78	1.05	1.06	0.29	0.08
Avail Cap(c_a), veh/h	505	1333		303	1552		457	256	217	442	481	408
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.26	0.26	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	37.6	0.0	61.8	53.0	0.0	49.7	62.6	64.8	43.9	44.7	12.2
Incr Delay (d2), s/veh	0.0	196.0	0.0	33.2	2.3	0.0	0.7	14.5	74.3	59.1	0.3	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(95%),veh/ln	2.9	80.5	0.0	18.6	19.9	0.0	8.2	13.1	18.8	29.8	7.5	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.8	233.6	0.0	95.0	55.3	0.0	50.4	77.1	139.0	103.0	45.0	12.3
LnGrp LOS	C	F		F	E		D	E	F	F	D	B
Approach Vol, veh/h		1984			1046			570			640	
Approach Delay, s/veh		226.2			65.7			95.1			85.7	
Approach LOS		F			E			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	35.0	25.0	29.2	60.8	16.9	43.1	47.1	42.9				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	30.5	20.5	25.5	55.5	20.5	30.5	15.5	65.5				
Max Q Clear Time (g_c+I1), s	32.5	22.5	24.7	58.3	12.2	10.9	6.1	33.0				
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.2	0.7	0.1	5.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				147.8								
HCM 6th LOS				F								

# HCM 6th Signalized Intersection Summary 12: Plumas St & McCarran Blvd

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	1460	164	114	630	219	84	102	128	362	144	30
Future Volume (veh/h)	30	1460	164	114	630	219	84	102	128	362	144	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	33	1622	164	127	700	183	93	113	106	402	160	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	53	1787	179	152	2116	944	163	180	153	600	379	71
Arrive On Green	0.03	0.55	0.55	0.09	0.60	0.60	0.10	0.10	0.10	0.12	0.25	0.25
Sat Flow, veh/h	1781	3263	326	1781	3554	1585	1193	1870	1585	3456	1532	287
Grp Volume(v), veh/h	33	874	912	127	700	183	93	113	106	402	0	190
Grp Sat Flow(s),veh/h/ln	1781	1777	1812	1781	1777	1585	1193	1870	1585	1728	0	1819
Q Serve(g_s), s	2.7	65.8	68.7	10.5	14.9	7.9	11.5	8.7	9.7	15.2	0.0	13.2
Cycle Q Clear(g_c), s	2.7	65.8	68.7	10.5	14.9	7.9	11.5	8.7	9.7	15.2	0.0	13.2
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	53	973	992	152	2116	944	163	180	153	600	0	450
V/C Ratio(X)	0.62	0.90	0.92	0.84	0.33	0.19	0.57	0.63	0.69	0.67	0.00	0.42
Avail Cap(c_a), veh/h	162	973	992	412	2116	944	244	308	261	769	0	663
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	0.81	0.81	0.81	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	71.9	30.2	30.9	67.6	15.3	13.9	66.4	65.2	65.7	50.7	0.0	47.5
Incr Delay (d2), s/veh	11.2	12.8	14.6	9.5	0.1	0.1	3.1	3.6	5.6	1.5	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	38.7	41.4	8.5	9.4	5.0	6.6	7.8	7.4	11.0	0.0	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.1	43.0	45.5	77.1	15.4	14.0	69.6	68.8	71.2	52.2	0.0	48.1
LnGrp LOS	F	D	D	E	B	B	E	E	E	D	A	D
Approach Vol, veh/h		1819			1010			312			592	
Approach Delay, s/veh		45.0			22.9			69.8			50.9	
Approach LOS		D			C			E			D	
Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	22.7	19.7	18.1	89.5		42.4	10.9	96.7				
Change Period (Y+Rc), s	4.5	* 5.3	* 5.3	7.4		* 5.3	6.4	* 7.4				
Max Green Setting (Gmax), s	25.5	* 25	* 35	42.6		* 55	13.6	* 64				
Max Q Clear Time (g_c+I1), s	17.2	13.5	12.5	70.7		15.2	4.7	16.9				
Green Ext Time (p_c), s	1.0	1.0	0.3	0.0		1.2	0.0	5.7				
Intersection Summary												
HCM 6th Ctrl Delay				42.0								
HCM 6th LOS				D								

# HCM 6th Signalized Intersection Summary 13: McCarran Blvd & Caughlin Pkwy/Cashil Blvd

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	267	68	389	45	134	55	349	454	29	33	1022	307
Future Volume (veh/h)	267	68	389	45	134	55	349	454	29	33	1022	307
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	334	85	366	56	168	52	436	568	32	41	1278	347
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	319	474	402	72	212	180	246	1324	74	53	780	207
Arrive On Green	0.18	0.25	0.25	0.04	0.11	0.11	0.14	0.39	0.39	0.03	0.28	0.28
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3420	192	1781	2776	738
Grp Volume(v), veh/h	334	85	366	56	168	52	436	295	305	41	808	817
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1836	1781	1777	1737
Q Serve(g_s), s	21.5	4.3	26.9	3.7	10.5	2.7	16.6	14.6	14.7	2.7	33.7	33.7
Cycle Q Clear(g_c), s	21.5	4.3	26.9	3.7	10.5	2.7	16.6	14.6	14.7	2.7	33.7	33.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.42
Lane Grp Cap(c), veh/h	319	474	402	72	212	180	246	688	711	53	499	488
V/C Ratio(X)	1.05	0.18	0.91	0.78	0.79	0.29	1.77	0.43	0.43	0.78	1.62	1.67
Avail Cap(c_a), veh/h	319	652	552	96	566	479	246	688	711	94	499	488
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	49.3	35.0	43.5	57.0	51.8	27.2	51.7	27.0	27.0	57.8	43.1	43.2
Incr Delay (d2), s/veh	63.6	0.2	15.5	24.0	6.5	0.9	362.3	1.9	1.9	21.6	288.2	312.0
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(95%),veh/ln	22.2	3.6	18.1	3.9	9.1	2.7	50.0	10.4	10.6	2.7	83.0	86.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	112.9	35.2	59.0	81.1	58.3	28.1	414.0	29.0	28.9	79.4	331.3	355.1
LnGrp LOS	F	D	E	F	E	C	F	C	C	E	F	F
Approach Vol, veh/h	785			276			1036			1666		
Approach Delay, s/veh	79.4			57.2			191.0			336.8		
Approach LOS	E			E			F			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	52.8	9.4	35.6	22.0	40.0	26.7	18.3				
Change Period (Y+Rc), s	5.7	* 6.3	4.5	* 5.2	5.4	6.3	* 5.2	* 4.7				
Max Green Setting (Gmax), s	6.3	* 44	6.5	* 42	16.6	33.7	* 13	* 36				
Max Q Clear Time (g_c+I1), s	4.7	16.7	5.7	28.9	18.6	35.7	23.5	12.5				
Green Ext Time (p_c), s	0.0	3.2	0.0	1.5	0.0	0.0	0.0	1.1				
Intersection Summary												
HCM 6th Ctrl Delay	222.4											
HCM 6th LOS	F											



# HCM 6th Signalized Intersection Summary 14: McCarran Blvd & Caughlin Pkwy/Plumb Ln

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	67	37	63	35	139	60	690	25	309	1457	148
Future Volume (veh/h)	180	67	37	63	35	139	60	690	25	309	1457	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	209	78	33	73	41	122	70	802	27	359	1694	156
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	236	266	226	152	177	150	90	887	30	479	1581	144
Arrive On Green	0.10	0.14	0.14	0.05	0.09	0.09	0.05	0.25	0.25	0.27	0.48	0.48
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3508	118	1781	3294	299
Grp Volume(v), veh/h	209	78	33	73	41	122	70	406	423	359	904	946
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1849	1781	1777	1816
Q Serve(g_s), s	9.7	4.5	2.2	4.7	2.4	9.1	4.7	26.6	26.6	22.1	57.6	57.6
Cycle Q Clear(g_c), s	9.7	4.5	2.2	4.7	2.4	9.1	4.7	26.6	26.6	22.1	57.6	57.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.16
Lane Grp Cap(c), veh/h	236	266	226	152	177	150	90	449	468	479	853	872
V/C Ratio(X)	0.88	0.29	0.15	0.48	0.23	0.81	0.78	0.90	0.90	0.75	1.06	1.09
Avail Cap(c_a), veh/h	261	313	265	231	287	243	131	486	505	496	853	872
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	51.7	46.1	45.1	53.7	50.3	53.3	56.3	43.4	43.4	40.2	31.2	31.2
Incr Delay (d2), s/veh	26.4	0.6	0.3	2.3	0.7	10.2	16.7	19.3	18.8	6.0	47.9	56.2
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(95%),veh/ln	12.6	3.9	1.6	4.0	2.1	7.3	4.4	19.6	20.1	15.3	45.0	49.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.1	46.7	45.4	56.0	50.9	63.4	73.1	62.7	62.2	46.2	79.1	87.4
LnGrp LOS	E	D	D	E	D	E	E	E	E	D	F	F
Approach Vol, veh/h		320			236			899			2209	
Approach Delay, s/veh		67.1			59.0			63.3			77.3	
Approach LOS		E			E			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	38.7	37.6	10.7	22.0	12.2	64.0	16.7	16.0				
Change Period (Y+Rc), s	6.4	* 7.2	4.5	4.9	6.2	6.4	4.9	* 4.6				
Max Green Setting (Gmax), s	33.4	* 33	11.5	20.1	8.8	57.6	13.5	* 18				
Max Q Clear Time (g_c+I1), s	24.1	28.6	6.7	6.5	6.7	59.6	11.7	11.1				
Green Ext Time (p_c), s	0.7	1.8	0.1	0.4	0.0	0.0	0.1	0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				71.8								
HCM 6th LOS				E								

# HCM 6th Signalized Intersection Summary 15: McCarran Blvd & Mayberry Dr

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	237	258	205	133	350	53	689	305	268	1445	95
Future Volume (veh/h)	170	237	258	205	133	350	53	689	305	268	1445	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	198	276	0	238	155	0	62	801	0	312	1680	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	334	302		245	302		80	974		423	1688	
Arrive On Green	0.09	0.16	0.00	0.09	0.16	0.00	0.04	0.27	0.00	0.47	0.95	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	198	276	0	238	155	0	62	801	0	312	1680	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	11.2	17.4	0.0	11.2	9.1	0.0	4.1	25.3	0.0	17.0	52.0	0.0
Cycle Q Clear(g_c), s	11.2	17.4	0.0	11.2	9.1	0.0	4.1	25.3	0.0	17.0	52.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	334	302		245	302		80	974		423	1688	
V/C Ratio(X)	0.59	0.91		0.97	0.51		0.78	0.82		0.74	1.00	
Avail Cap(c_a), veh/h	334	302		245	302		132	974		490	1688	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.16	0.16	0.00
Uniform Delay (d), s/veh	37.8	49.5	0.0	42.5	46.0	0.0	56.7	40.8	0.0	28.5	2.9	0.0
Incr Delay (d2), s/veh	2.8	30.3	0.0	49.9	1.5	0.0	14.8	7.8	0.0	0.8	7.7	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(95%),veh/ln	8.8	15.9	0.0	8.7	7.7	0.0	3.8	17.2	0.0	6.9	4.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.6	79.8	0.0	92.4	47.4	0.0	71.5	48.6	0.0	29.3	10.6	0.0
LnGrp LOS	D	E		F	D		E	D		C	B	
Approach Vol, veh/h		474			393			863			1992	
Approach Delay, s/veh		63.4			74.7			50.2			13.5	
Approach LOS		E			E			D			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	35.5	40.0	16.0	25.1	11.5	64.0	16.0	25.1				
Change Period (Y+Rc), s	7.0	* 7.1	* 4.8	* 5.7	6.1	7.0	* 4.7	5.7				
Max Green Setting (Gmax), s	33.0	* 33	* 11	* 19	8.9	57.0	* 11	19.3				
Max Q Clear Time (g_c+I1), s	19.0	27.3	13.2	19.4	6.1	54.0	13.2	11.1				
Green Ext Time (p_c), s	0.7	2.3	0.0	0.0	0.0	2.4	0.0	0.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			34.9									
HCM 6th LOS			C									

# HCM 6th Signalized Intersection Summary

## 16: McCarran Blvd & 4th St

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	110	164	179	89	56	84	931	199	101	1438	239
Future Volume (veh/h)	174	110	164	179	89	56	84	931	199	101	1438	239
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	198	125	0	203	101	48	95	1058	0	115	1634	206
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	227	161		223	138	117	119	1001		141	1080	482
Arrive On Green	0.13	0.09	0.00	0.13	0.07	0.07	0.07	0.28	0.00	0.08	0.30	0.30
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	198	125	0	203	101	48	95	1058	0	115	1634	206
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	13.1	7.9	0.0	13.5	6.3	3.5	6.3	33.8	0.0	7.6	36.5	4.2
Cycle Q Clear(g_c), s	13.1	7.9	0.0	13.5	6.3	3.5	6.3	33.8	0.0	7.6	36.5	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	227	161		223	138	117	119	1001		141	1080	482
V/C Ratio(X)	0.87	0.77		0.91	0.73	0.41	0.80	1.06		0.81	1.51	0.43
Avail Cap(c_a), veh/h	297	503		223	418	354	223	1001		235	1080	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.57	0.57	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	53.7	0.0	51.8	54.4	53.1	55.2	43.1	0.0	54.4	41.8	3.8
Incr Delay (d2), s/veh	19.3	7.7	0.0	37.2	7.2	2.3	6.7	38.4	0.0	10.6	235.4	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.2	7.1	0.0	12.8	5.7	2.6	5.1	25.7	0.0	6.7	76.8	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.7	61.4	0.0	89.0	61.6	55.4	61.9	81.5	0.0	65.0	277.1	6.5
LnGrp LOS	E	E		F	E	E	E	F		E	F	A
Approach Vol, veh/h	323			352			1153			1955		
Approach Delay, s/veh	67.1			76.6			79.8			236.1		
Approach LOS	E			E			E			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.7	40.0	20.0	16.1	13.0	43.7	21.0	15.1				
Change Period (Y+Rc), s	7.2	* 6.2	5.0	5.7	5.0	7.2	5.7	* 6.2				
Max Green Setting (Gmax), s	15.8	* 34	15.0	32.3	15.0	34.8	20.0	* 27				
Max Q Clear Time (g_c+I1), s	9.6	35.8	15.5	9.9	8.3	38.5	15.1	8.3				
Green Ext Time (p_c), s	0.1	0.0	0.0	0.5	0.1	0.0	0.2	0.5				
Intersection Summary												
HCM 6th Ctrl Delay	159.2											
HCM 6th LOS	F											

# HCM 6th Signalized Intersection Summary 17: McCarran Blvd & Mae Anne Ave/Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	563	44	455	64	30	12	272	704	56	35	1479	325
Future Volume (veh/h)	563	44	455	64	30	12	272	704	56	35	1479	325
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	619	48	0	70	33	0	299	774	0	38	1625	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	674	94		332	93		358	1940		75	1651	
Arrive On Green	0.20	0.05	0.00	0.19	0.05	0.00	0.10	0.38	0.00	0.08	0.65	0.00
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	3456	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	619	48	0	70	33	0	299	774	0	38	1625	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1728	1702	1585	1781	1702	1585
Q Serve(g_s), s	21.1	3.0	0.0	4.0	2.0	0.0	10.2	13.3	0.0	2.4	37.1	0.0
Cycle Q Clear(g_c), s	21.1	3.0	0.0	4.0	2.0	0.0	10.2	13.3	0.0	2.4	37.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	674	94		332	93		358	1940		75	1651	
V/C Ratio(X)	0.92	0.51		0.21	0.36		0.84	0.40		0.51	0.98	
Avail Cap(c_a), veh/h	697	408		332	312		415	1940		205	1651	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.49	0.49	0.00
Uniform Delay (d), s/veh	47.4	55.6	0.0	41.3	55.2	0.0	52.8	27.2	0.0	53.8	20.9	0.0
Incr Delay (d2), s/veh	17.0	4.3	0.0	0.3	2.3	0.0	12.4	0.6	0.0	2.6	12.2	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(95%),veh/ln	15.8	2.7	0.0	3.3	1.9	0.0	8.5	9.0	0.0	2.0	11.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	59.9	0.0	41.7	57.4	0.0	65.2	27.8	0.0	56.4	33.1	0.0
LnGrp LOS	E	E		D	E		E	C		E	C	
Approach Vol, veh/h		667			103			1073			1663	
Approach Delay, s/veh		64.0			46.7			38.2			33.7	
Approach LOS		E			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.2	52.8	27.4	11.8	18.0	46.0	28.2	11.0				
Change Period (Y+Rc), s	6.2	* 7.2	5.0	* 5.8	5.6	7.2	* 4.8	5.0				
Max Green Setting (Gmax), s	13.8	* 40	17.5	* 26	14.4	38.8	* 24	20.0				
Max Q Clear Time (g_c+I1), s	4.4	15.3	6.0	5.0	12.2	39.1	23.1	4.0				
Green Ext Time (p_c), s	0.0	4.9	0.1	0.2	0.2	0.0	0.3	0.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			41.2									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary



























## 18: McCarran Blvd & 7th St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	375	197	408	258	214	105	90	935	150	120	1297	259
Future Volume (veh/h)	375	197	408	258	214	105	90	935	150	120	1297	259
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	421	221	345	290	240	89	101	1051	127	135	1457	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	429	417	353	374	277	234	157	1477	458	194	1489	
Arrive On Green	0.19	0.22	0.22	0.12	0.15	0.15	0.05	0.29	0.29	0.06	0.29	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	421	221	345	290	240	89	101	1051	127	135	1457	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	23.3	12.5	17.0	14.4	15.1	6.1	3.4	22.1	7.4	4.6	33.9	0.0
Cycle Q Clear(g_c), s	23.3	12.5	17.0	14.4	15.1	6.1	3.4	22.1	7.4	4.6	33.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	429	417	353	374	277	234	157	1477	458	194	1489	
V/C Ratio(X)	0.98	0.53	0.98	0.78	0.87	0.38	0.64	0.71	0.28	0.70	0.98	
Avail Cap(c_a), veh/h	429	474	402	374	343	291	501	1642	510	403	1489	
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	0.82	0.82	0.82	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.1	41.1	19.8	39.4	50.0	46.2	56.3	38.2	32.9	55.6	42.1	0.0
Incr Delay (d2), s/veh	38.1	1.0	36.8	9.8	17.5	1.0	3.6	1.1	0.3	4.5	18.7	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(95%),veh/ln	20.9	9.8	14.8	3.2	13.0	4.4	2.8	13.3	5.2	3.7	22.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.3	42.1	56.6	49.2	67.4	47.2	59.9	39.2	33.2	60.1	60.8	0.0
LnGrp LOS	E	D	E	D	E	D	E	D	C	E	E	
Approach Vol, veh/h		987			619			1279			1592	
Approach Delay, s/veh		60.1			56.0			40.3			60.8	
Approach LOS		E			E			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.7	41.1	19.0	32.3	11.8	42.0	28.0	23.3				
Change Period (Y+Rc), s	6.0	6.4	4.6	5.6	6.4	* 7	* 4.7	* 5.6				
Max Green Setting (Gmax), s	14.0	38.6	14.4	30.4	17.4	* 35	* 23	* 22				
Max Q Clear Time (g_c+I1), s	6.6	24.1	16.4	19.0	5.4	35.9	25.3	17.1				
Green Ext Time (p_c), s	0.2	6.0	0.0	1.9	0.2	0.0	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay			54.1									
HCM 6th LOS			D									



























# HCM 6th Signalized Intersection Summary

## 19: Clear Acre Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 			 			 	
Traffic Volume (veh/h)	293	968	105	120	1275	102	86	202	184	168	393	555
Future Volume (veh/h)	293	968	105	120	1275	102	86	202	184	168	393	555
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	349	1152	113	143	1518	91	102	240	0	200	468	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	396	1157	113	165	1203	536	123	312		343	360	
Arrive On Green	0.11	0.35	0.35	0.09	0.34	0.34	0.12	0.12	0.00	0.19	0.19	0.00
Sat Flow, veh/h	3456	3269	320	1781	3554	1585	1019	2670	0	1781	1870	1585
Grp Volume(v), veh/h	349	625	640	143	1518	91	182	160	0	200	468	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1813	1781	1777	1585	1819	1777	0	1781	1870	1585
Q Serve(g_s), s	14.9	52.6	52.8	11.9	50.8	6.0	14.7	13.0	0.0	15.3	28.9	0.0
Cycle Q Clear(g_c), s	14.9	52.6	52.8	11.9	50.8	6.0	14.7	13.0	0.0	15.3	28.9	0.0
Prop In Lane	1.00		0.18	1.00		1.00	0.56		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	396	629	642	165	1203	536	220	215		343	360	
V/C Ratio(X)	0.88	0.99	1.00	0.87	1.26	0.17	0.83	0.74		0.58	1.30	
Avail Cap(c_a), veh/h	440	629	642	169	1203	536	360	352		343	360	
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.4	48.3	48.4	67.2	49.6	34.8	64.4	63.7	0.0	55.1	60.5	0.0
Incr Delay (d2), s/veh	17.2	34.5	34.8	34.8	124.9	0.7	7.9	5.0	0.0	2.5	153.4	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(95%),veh/ln	11.9	37.3	38.1	11.2	61.6	4.4	11.7	10.3	0.0	11.5	42.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.6	82.8	83.1	101.9	174.5	35.5	72.3	68.7	0.0	57.6	214.0	0.0
LnGrp LOS	F	F	F	F	F	D	E	E		E	F	
Approach Vol, veh/h		1614			1752			342			668	
Approach Delay, s/veh		82.9			161.3			70.6			167.2	
Approach LOS		F			F			E			F	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.5	20.7	60.0		35.0	23.1	57.6				
Change Period (Y+Rc), s		* 5.3	6.8	* 6.9		6.1	5.9	6.8				
Max Green Setting (Gmax), s		* 30	14.2	* 53		28.9	19.1	48.2				
Max Q Clear Time (g_c+I1), s		16.7	13.9	54.8		30.9	16.9	52.8				
Green Ext Time (p_c), s		1.5	0.0	0.0		0.0	0.3	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			126.2									
HCM 6th LOS			F									



























# HCM 6th Signalized Intersection Summary

## 1: El Rancho Dr & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	995	56	32	1161	62	169	343	74	33	109	104
Future Volume (veh/h)	166	995	56	32	1161	62	169	343	74	33	109	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	182	1093	46	35	1276	0	186	377	72	36	120	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	1391	620	306	1614		350	394	75	47	150	
Arrive On Green	0.11	0.39	0.39	0.17	0.45	0.00	0.20	0.26	0.26	0.03	0.08	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1526	292	1781	1870	1585
Grp Volume(v), veh/h	182	1093	46	35	1276	0	186	0	449	36	120	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1818	1781	1870	1585
Q Serve(g_s), s	15.1	40.6	2.7	2.5	45.9	0.0	14.1	0.0	36.5	3.0	9.5	0.0
Cycle Q Clear(g_c), s	15.1	40.6	2.7	2.5	45.9	0.0	14.1	0.0	36.5	3.0	9.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	204	1391	620	306	1614		350	0	469	47	150	
V/C Ratio(X)	0.89	0.79	0.07	0.11	0.79		0.53	0.00	0.96	0.77	0.80	
Avail Cap(c_a), veh/h	233	1391	620	306	1614		350	0	476	186	418	
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	0.61	0.61	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.5	40.1	28.6	52.5	34.9	0.0	54.1	0.0	54.8	72.6	67.8	0.0
Incr Delay (d2), s/veh	29.5	4.5	0.2	0.1	2.5	0.0	1.5	0.0	30.2	23.2	9.5	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(95%),veh/ln	13.2	25.0	1.9	2.0	25.3	0.0	10.7	0.0	28.1	3.0	8.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.9	44.7	28.8	52.6	37.4	0.0	55.6	0.0	85.0	95.8	77.4	0.0
LnGrp LOS	F	D	C	D	D		E	A	F	F	E	
Approach Vol, veh/h	1321			1311			635			156		
Approach Delay, s/veh	51.0			37.8			76.4			81.6		
Approach LOS	D			D			E			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	43.4	32.3	65.0	34.2	18.5	22.6	74.7				
Change Period (Y+Rc), s	* 5.3	* 4.7	6.6	* 6.3	4.7	* 6.5	5.4	6.6				
Max Green Setting (Gmax), s	* 16	* 39	14.3	* 59	20.5	* 34	19.6	53.4				
Max Q Clear Time (g_c+I1), s	5.0	38.5	4.5	42.6	16.1	11.5	17.1	47.9				
Green Ext Time (p_c), s	0.0	0.2	0.0	6.7	0.2	0.5	0.1	3.6				
Intersection Summary												
HCM 6th Ctrl Delay	52.0											
HCM 6th LOS	D											





















## HCM 6th Signalized Intersection Summary

### 2: Sullivan Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	37	1560	38	11	1181	269	46	95	36	69	49	272
Future Volume (veh/h)	37	1560	38	11	1181	269	46	95	36	69	49	272
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	41	1733	31	12	1312	222	51	106	30	66	70	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	479	2289	1021	19	1388	619	59	123	35	93	98	
Arrive On Green	0.54	1.00	1.00	0.01	0.39	0.39	0.12	0.12	0.12	0.05	0.05	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	489	1017	288	1781	1870	1585
Grp Volume(v), veh/h	41	1733	31	12	1312	222	187	0	0	66	70	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1794	0	0	1781	1870	1585
Q Serve(g_s), s	1.7	0.0	0.0	1.0	53.5	14.9	15.3	0.0	0.0	5.5	5.5	0.0
Cycle Q Clear(g_c), s	1.7	0.0	0.0	1.0	53.5	14.9	15.3	0.0	0.0	5.5	5.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.27		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	479	2289	1021	19	1388	619	216	0	0	93	98	
V/C Ratio(X)	0.09	0.76	0.03	0.64	0.95	0.36	0.86	0.00	0.00	0.71	0.72	
Avail Cap(c_a), veh/h	479	2289	1021	166	1414	631	340	0	0	219	229	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.69	0.71	0.71	0.71	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.7	0.0	0.0	73.9	44.2	32.4	64.8	0.0	0.0	70.0	70.0	0.0
Incr Delay (d2), s/veh	0.1	1.7	0.0	23.2	10.0	0.2	12.9	0.0	0.0	9.6	9.4	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(95%),veh/ln	1.3	1.0	0.0	1.0	31.5	9.0	12.5	0.0	0.0	4.9	5.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	1.7	0.0	97.1	54.2	32.6	77.7	0.0	0.0	79.5	79.4	0.0
LnGrp LOS	C	A	A	F	D	C	E	A	A	E	E	
Approach Vol, veh/h		1805			1546			187			136	
Approach Delay, s/veh		2.2			51.4			77.7			79.5	
Approach LOS		A			D			E			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.7	7.6	103.3		14.4	47.0	63.9				
Change Period (Y+Rc), s		6.6	6.0	* 6.7		6.6	6.7	* 5.3				
Max Green Setting (Gmax), s		28.4	14.0	* 64		18.4	18.3	* 60				
Max Q Clear Time (g_c+I1), s		17.3	3.0	2.0		7.5	3.7	55.5				
Green Ext Time (p_c), s		0.7	0.0	21.7		0.3	0.0	3.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				29.6								
HCM 6th LOS				C								
























# HCM 6th Signalized Intersection Summary

## 3: Rock Blvd & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1602	63	96	1392	0	168	4	312	3	2	2
Future Volume (veh/h)	0	1602	63	96	1392	0	168	4	312	3	2	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1841	54	110	1600	0	193	5	359	3	2	2
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1	2046	913	135	2459	0	235	5	374	34	23	9
Arrive On Green	0.00	0.77	0.77	0.08	0.69	0.00	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1781	3554	1585	1781	3647	0	796	21	1585	0	96	38
Grp Volume(v), veh/h	0	1841	54	110	1600	0	198	0	359	7	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	0	817	0	1585	134	0	0
Q Serve(g_s), s	0.0	58.6	1.3	9.1	37.8	0.0	0.0	0.0	33.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	58.6	1.3	9.1	37.8	0.0	35.4	0.0	33.6	35.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	0.97		1.00	0.43		0.29
Lane Grp Cap(c), veh/h	1	2046	913	135	2459	0	240	0	374	66	0	0
V/C Ratio(X)	0.00	0.90	0.06	0.82	0.65	0.00	0.82	0.00	0.96	0.11	0.00	0.00
Avail Cap(c_a), veh/h	222	2046	913	343	2459	0	240	0	374	66	0	0
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.52	0.52	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	14.3	7.6	68.3	12.9	0.0	57.8	0.0	56.6	47.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.8	0.1	11.3	0.6	0.0	20.3	0.0	36.0	0.7	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(95%),veh/ln	0.0	20.7	0.8	8.0	19.8	0.0	13.9	0.0	23.6	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.1	7.7	79.6	13.6	0.0	78.1	0.0	92.6	48.2	0.0	0.0
LnGrp LOS	A	B	A	E	B	A	E	A	F	D	A	A
Approach Vol, veh/h	1895				1710				557			
Approach Delay, s/veh	17.8				17.8				87.4			
Approach LOS	B				B				F			
Timer - Assigned Phs	2		3		4		6		7		8	
Phs Duration (G+Y+Rc), s	40.4		17.4		92.2		40.4		0.0		109.6	
Change Period (Y+Rc), s	* 5		* 6.1		5.8		* 5		6.3		5.8	
Max Green Setting (Gmax), s	* 35		* 29		69.2		* 35		18.7		79.2	
Max Q Clear Time (g_c+I1), s	37.4		11.1		60.6		37.4		0.0		39.8	
Green Ext Time (p_c), s	0.0		0.2		6.9		0.0		0.0		16.1	
Intersection Summary												
HCM 6th Ctrl Delay	27.2											
HCM 6th LOS	C											












# HCM 6th Signalized Intersection Summary

## 4: McCarran Blvd & E Prater Way

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	644	187	152	423	250	299	1138	349	233	495	116
Future Volume (veh/h)	226	644	187	152	423	250	299	1138	349	233	495	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	251	716	0	169	470	0	332	1264	0	259	550	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	318	765		219	658		388	1412		281	1573	
Arrive On Green	0.12	0.22	0.00	0.09	0.19	0.00	0.11	0.40	0.00	0.16	0.44	0.00
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	251	716	0	169	470	0	332	1264	0	259	550	0
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	18.0	31.7	0.0	12.2	19.9	0.0	15.1	53.2	0.0	22.9	16.3	0.0
Cycle Q Clear(g_c), s	18.0	31.7	0.0	12.2	19.9	0.0	15.1	53.2	0.0	22.9	16.3	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	318	765		219	658		388	1412		281	1573	
V/C Ratio(X)	0.79	0.94		0.77	0.71		0.85	0.90		0.92	0.35	
Avail Cap(c_a), veh/h	318	784		328	886		626	1412		323	1573	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.6	61.7	0.0	49.1	61.2	0.0	69.7	45.1	0.0	66.4	29.4	0.0
Incr Delay (d2), s/veh	12.5	18.1	0.0	6.3	1.8	0.0	6.5	9.1	0.0	28.9	0.6	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(95%),veh/ln	14.1	22.9	0.0	9.8	14.1	0.0	11.3	32.9	0.0	18.4	11.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	79.8	0.0	55.4	63.0	0.0	76.3	54.2	0.0	95.3	30.0	0.0
LnGrp LOS	E	E		E	E		E	D		F	C	
Approach Vol, veh/h		967			639			1596			809	
Approach Delay, s/veh		74.2			61.0			58.8			50.9	
Approach LOS		E			E			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.2	69.1	20.1	39.6	24.0	76.3	25.0	34.7				
Change Period (Y+Rc), s	6.0	5.5	* 5.7	* 5.1	6.0	5.5	5.5	5.1				
Max Green Setting (Gmax), s	29.0	49.5	* 24	* 35	29.0	49.5	19.5	39.9				
Max Q Clear Time (g_c+I1), s	24.9	55.2	14.2	33.7	17.1	18.3	20.0	21.9				
Green Ext Time (p_c), s	0.3	0.0	0.3	0.8	0.9	3.7	0.0	2.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			61.3									
HCM 6th LOS			E									


























# HCM 6th Signalized Intersection Summary 5: McCarran Blvd & Nichols Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	71	47	299	58	53	101	1769	151	98	1159	79
Future Volume (veh/h)	124	71	47	299	58	53	101	1769	151	98	1159	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	133	76	46	366	0	57	109	1902	146	105	1246	76
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	99	60	430	0	191	439	2783	213	125	1984	121
Arrive On Green	0.09	0.09	0.09	0.12	0.00	0.12	0.25	0.58	0.58	0.07	0.40	0.40
Sat Flow, veh/h	1781	1091	660	3563	0	1585	1781	4838	370	1781	4920	300
Grp Volume(v), veh/h	133	0	122	366	0	57	109	1336	712	105	862	460
Grp Sat Flow(s),veh/h/ln	1781	0	1751	1781	0	1585	1781	1702	1804	1781	1702	1816
Q Serve(g_s), s	11.7	0.0	10.9	16.1	0.0	5.2	7.9	43.9	44.3	9.3	32.4	32.4
Cycle Q Clear(g_c), s	11.7	0.0	10.9	16.1	0.0	5.2	7.9	43.9	44.3	9.3	32.4	32.4
Prop In Lane	1.00		0.38	1.00		1.00	1.00		0.21	1.00		0.17
Lane Grp Cap(c), veh/h	162	0	159	430	0	191	439	1958	1038	125	1372	732
V/C Ratio(X)	0.82	0.00	0.77	0.85	0.00	0.30	0.25	0.68	0.69	0.84	0.63	0.63
Avail Cap(c_a), veh/h	286	0	281	661	0	294	439	1958	1038	155	1372	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
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	71.4	0.0	71.0	68.9	0.0	64.1	48.4	23.8	23.8	73.5	38.2	38.2
Incr Delay (d2), s/veh	9.8	0.0	7.4	6.5	0.0	0.9	0.3	1.9	3.7	26.9	2.2	4.1
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(95%),veh/ln	9.8	0.0	9.0	12.4	0.0	0.1	6.4	24.5	26.6	8.9	19.9	21.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.2	0.0	78.5	75.4	0.0	65.0	48.7	25.7	27.5	100.3	40.4	42.2
LnGrp LOS	F	A	E	E	A	E	D	C	C	F	D	D
Approach Vol, veh/h	255			423			2157			1427		
Approach Delay, s/veh	79.9			74.0			27.5			45.4		
Approach LOS	E			E			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.4	98.1		24.6	45.5	70.0		19.9				
Change Period (Y+Rc), s	6.1	* 6.1		* 5.3	6.1	5.5		5.3				
Max Green Setting (Gmax), s	13.9	* 69		* 30	17.9	64.5		25.7				
Max Q Clear Time (g_c+I1), s	11.3	46.3		18.1	9.9	34.4		13.7				
Green Ext Time (p_c), s	0.0	15.0		1.2	0.1	10.2		0.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	41.2											
HCM 6th LOS	D											
























# HCM 6th Signalized Intersection Summary

## 6: McCarran Blvd & E Greg St
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	242	32	248	254	279	121	1003	455	112	772	109
Future Volume (veh/h)	239	242	32	248	254	279	121	1003	455	112	772	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	260	263	32	270	276	0	132	1090	0	122	839	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	5	5	5	5	5	5
Cap, veh/h	525	334	40	516	351		217	1333		580	2371	
Arrive On Green	0.15	0.10	0.10	0.15	0.10	0.00	0.13	0.27	0.00	0.33	0.48	0.00
Sat Flow, veh/h	3456	3193	385	3456	3554	1585	1739	4985	1547	1739	5149	0
Grp Volume(v), veh/h	260	145	150	270	276	0	132	1090	0	122	839	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1801	1728	1777	1585	1739	1662	1547	1739	1662	0
Q Serve(g_s), s	11.0	12.7	13.0	11.5	12.1	0.0	11.5	32.8	0.0	8.0	17.0	0.0
Cycle Q Clear(g_c), s	11.0	12.7	13.0	11.5	12.1	0.0	11.5	32.8	0.0	8.0	17.0	0.0
Prop In Lane	1.00		0.21	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	525	186	188	516	351		217	1333		580	2371	
V/C Ratio(X)	0.50	0.78	0.80	0.52	0.79		0.61	0.82		0.21	0.35	
Avail Cap(c_a), veh/h	525	531	538	516	817		239	1932		580	2371	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	62.2	69.9	70.0	62.8	70.5	0.0	66.3	55.0	0.0	38.2	26.4	0.0
Incr Delay (d2), s/veh	3.3	7.0	7.5	3.8	3.9	0.0	3.7	5.7	0.0	0.2	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(95%),veh/ln	8.8	10.2	10.5	9.1	9.6	0.0	9.0	20.4	0.0	6.2	10.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.5	76.9	77.5	66.6	74.4	0.0	70.0	60.6	0.0	38.4	26.5	0.0
LnGrp LOS	E	E	E	E	E		E	E		D	C	
Approach Vol, veh/h		555			546			1222			961	
Approach Delay, s/veh		71.7			70.5			61.6			28.0	
Approach LOS		E			E			E			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	59.7	48.8	29.6	21.9	26.0	82.5	30.0	21.5				
Change Period (Y+Rc), s	* 6.4	6.0	* 5.7	* 5.2	* 6	6.4	* 5.7	* 5.7				
Max Green Setting (Gmax), s	* 14	62.0	* 13	* 48	* 22	53.6	* 24	* 37				
Max Q Clear Time (g_c+l1), s	10.0	34.8	13.5	15.0	13.5	19.0	13.0	14.1				
Green Ext Time (p_c), s	0.1	8.0	0.0	1.7	0.2	6.1	0.7	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			55.0									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary

## 7: McCarran Blvd & Mira Loma Dr
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	322	18	376	207	189	88	878	932	421	643	74
Future Volume (veh/h)	51	322	18	376	207	189	88	878	932	421	643	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	61	388	20	453	249	0	106	1058	848	507	775	67
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	79	494	25	379	593		394	1544	479	495	1109	344
Arrive On Green	0.04	0.14	0.14	0.21	0.32	0.00	0.23	0.31	0.31	0.15	0.22	0.22
Sat Flow, veh/h	1781	3439	177	1781	1870	1585	1739	4985	1547	3374	4985	1547
Grp Volume(v), veh/h	61	200	208	453	249	0	106	1058	848	507	775	67
Grp Sat Flow(s),veh/h/ln	1781	1777	1839	1781	1870	1585	1739	1662	1547	1687	1662	1547
Q Serve(g_s), s	4.1	13.0	13.1	25.5	12.6	0.0	6.0	22.3	20.4	17.6	17.2	3.5
Cycle Q Clear(g_c), s	4.1	13.0	13.1	25.5	12.6	0.0	6.0	22.3	20.4	17.6	17.2	3.5
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	79	255	264	379	593		394	1544	479	495	1109	344
V/C Ratio(X)	0.77	0.78	0.79	1.20	0.42		0.27	0.69	1.77	1.02	0.70	0.19
Avail Cap(c_a), veh/h	304	456	472	379	593		394	1544	479	495	1109	344
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	49.6	49.6	47.3	32.3	0.0	38.2	36.3	12.5	51.2	42.9	25.9
Incr Delay (d2), s/veh	14.3	5.3	5.2	111.5	0.5	0.0	0.4	2.5	354.4	46.9	3.7	1.3
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(95%),veh/ln	3.9	10.2	10.5	33.8	9.7	0.0	4.6	14.0	85.4	15.9	11.6	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.0	54.8	54.8	158.8	32.7	0.0	38.6	38.8	366.9	98.1	46.6	27.2
LnGrp LOS	E	D	D	F	C		D	D	F	F	D	C
Approach Vol, veh/h		469			702			2012			1349	
Approach Delay, s/veh		56.9			114.1			177.0			65.0	
Approach LOS		E			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.0	43.9	30.7	22.4	33.9	33.0	9.9	43.3				
Change Period (Y+Rc), s	5.4	6.7	* 5.2	* 5.2	6.7	* 6.3	4.5	* 5.2				
Max Green Setting (Gmax), s	17.6	24.3	* 26	* 31	15.2	* 27	20.5	* 36				
Max Q Clear Time (g_c+I1), s	19.6	24.3	27.5	15.1	8.0	19.2	6.1	14.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.1	0.1	3.0	0.1	1.4				
Intersection Summary												
HCM 6th Ctrl Delay				121.5								
HCM 6th LOS				F								

# HCM 6th Signalized Intersection Summary 8: Longley Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	213	1019	60	634	631	64	189	638	1320	139	499	210
Future Volume (veh/h)	213	1019	60	634	631	64	189	638	1320	139	499	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	234	1120	0	697	693	0	208	701	0	153	548	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	291	1140		773	1408		269	749		221	633	
Arrive On Green	0.09	0.33	0.00	0.16	0.41	0.00	0.15	0.21	0.00	0.12	0.18	0.00
Sat Flow, veh/h	3374	3561	0	4904	3469	1547	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	234	1120	0	697	693	0	208	701	0	153	548	0
Grp Sat Flow(s),veh/h/ln	1687	1735	0	1635	1735	1547	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	10.2	48.0	0.0	20.9	22.2	0.0	16.8	29.1	0.0	12.3	22.5	0.0
Cycle Q Clear(g_c), s	10.2	48.0	0.0	20.9	22.2	0.0	16.8	29.1	0.0	12.3	22.5	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	291	1140		773	1408		269	749		221	633	
V/C Ratio(X)	0.80	0.98		0.90	0.49		0.77	0.94		0.69	0.87	
Avail Cap(c_a), veh/h	814	1140		824	1408		269	765		221	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	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.3	49.9	0.0	62.0	33.1	0.0	61.2	58.2	0.0	63.0	59.9	0.0
Incr Delay (d2), s/veh	5.2	22.4	0.0	12.7	1.2	0.0	13.2	18.5	0.0	16.4	8.2	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(95%),veh/ln	8.0	31.5	0.0	14.4	14.3	0.0	13.2	20.9	0.0	10.7	16.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.5	72.3	0.0	74.7	34.3	0.0	74.4	76.7	0.0	79.4	68.1	0.0
LnGrp LOS	E	E		E	C		E	E		E	E	
Approach Vol, veh/h	1354				1390				909			
Approach Delay, s/veh	72.3				54.6				76.2			
Approach LOS	E				D				E			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.0	38.3	30.3	56.0	29.3	33.0	18.7	67.6				
Change Period (Y+Rc), s	5.4	6.7	6.7	* 6.7	6.7	* 6.3	5.8	6.7				
Max Green Setting (Gmax), s	18.6	32.3	25.2	* 49	17.2	* 34	36.2	38.3				
Max Q Clear Time (g_c+I1), s	14.3	31.1	22.9	50.0	18.8	24.5	12.2	24.2				
Green Ext Time (p_c), s	0.1	0.5	0.7	0.0	0.0	2.2	0.7	3.6				
Intersection Summary												
HCM 6th Ctrl Delay	67.2											
HCM 6th LOS	E											

































# HCM 6th Signalized Intersection Summary

## 9: S Virginia St & McCarran Blvd
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	443	796	287	181	828	688	266	1279	255	564	994	101
Future Volume (veh/h)	443	796	287	181	828	688	266	1279	255	564	994	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1811	1811	1811	1811	1811	1811	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	476	856	0	195	790	625	286	1375	0	606	1069	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	6	6	6	2	2	2	2	2	2
Cap, veh/h	537	1403		219	908	770	339	1703		815	1190	
Arrive On Green	0.16	0.28	0.00	0.13	0.25	0.25	0.10	0.26	0.00	0.16	0.33	0.00
Sat Flow, veh/h	3346	4944	1535	1725	3622	3070	3456	6696	0	5023	3554	1585
Grp Volume(v), veh/h	476	856	0	195	790	625	286	1375	0	606	1069	0
Grp Sat Flow(s),veh/h/ln	1673	1648	1535	1725	1811	1535	1728	1609	0	1674	1777	1585
Q Serve(g_s), s	20.9	22.5	0.0	16.7	31.4	19.3	12.2	30.0	0.0	17.2	42.9	0.0
Cycle Q Clear(g_c), s	20.9	22.5	0.0	16.7	31.4	19.3	12.2	30.0	0.0	17.2	42.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	537	1403		219	908	770	339	1703		815	1190	
V/C Ratio(X)	0.89	0.61		0.89	0.87	0.81	0.84	0.81		0.74	0.90	
Avail Cap(c_a), veh/h	705	1403		363	983	833	475	1703		815	1190	
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)	0.85	0.85	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	61.6	46.5	0.0	64.4	53.9	23.8	66.5	51.6	0.0	59.9	47.5	0.0
Incr Delay (d2), s/veh	9.3	0.7	0.0	14.0	8.1	5.8	9.5	4.2	0.0	3.7	10.8	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(95%),veh/ln	14.1	13.7	0.0	12.7	21.3	11.9	9.7	18.1	0.0	12.0	27.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.9	47.2	0.0	78.4	61.9	29.6	76.0	55.8	0.0	63.6	58.3	0.0
LnGrp LOS	E	D		E	E	C	E	E		E	E	
Approach Vol, veh/h	1332			1610			1661			1675		
Approach Delay, s/veh	55.7			51.4			59.3			60.2		
Approach LOS	E			D			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.6	46.0	24.5	48.9	20.1	56.5	29.5	43.9				
Change Period (Y+Rc), s	6.3	* 6.3	5.4	6.3	5.4	6.3	5.4	6.3				
Max Green Setting (Gmax), s	14.6	* 40	31.6	40.7	20.6	33.7	31.6	40.7				
Max Q Clear Time (g_c+I1), s	19.2	32.0	18.7	24.5	14.2	44.9	22.9	33.4				
Green Ext Time (p_c), s	0.0	4.9	0.4	5.0	0.5	0.0	1.2	4.3				
Intersection Summary												
HCM 6th Ctrl Delay	56.7											
HCM 6th LOS	E											


























# HCM 6th Signalized Intersection Summary 10: Kietzke Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 		 	 	
Traffic Volume (veh/h)	235	914	588	98	1044	196	1110	261	65	326	65	300
Future Volume (veh/h)	235	914	588	98	1044	196	1110	261	65	326	65	300
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	261	1016	0	109	1160	0	1233	290	0	362	72	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	328	1740		133	1181		1235	368		995	142	
Arrive On Green	0.18	0.34	0.00	0.07	0.23	0.00	0.36	0.10	0.00	0.29	0.04	0.00
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	261	1016	0	109	1160	0	1233	290	0	362	72	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	21.0	24.6	0.0	9.0	33.9	0.0	53.5	11.9	0.0	12.5	3.0	0.0
Cycle Q Clear(g_c), s	21.0	24.6	0.0	9.0	33.9	0.0	53.5	11.9	0.0	12.5	3.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	328	1740		133	1181		1235	368		995	142	
V/C Ratio(X)	0.80	0.58		0.82	0.98		1.00	0.79		0.36	0.51	
Avail Cap(c_a), veh/h	328	1740		399	1181		1235	822		995	253	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.44	0.44	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.5	40.7	0.0	68.4	57.3	0.0	48.2	65.6	0.0	42.5	70.5	0.0
Incr Delay (d2), s/veh	18.0	0.5	0.0	5.6	13.6	0.0	25.3	3.8	0.0	0.2	2.8	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(95%),veh/ln	16.4	15.4	0.0	6.5	20.0	0.0	35.0	9.4	0.0	9.1	2.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.5	41.2	0.0	74.0	71.0	0.0	73.4	69.4	0.0	42.7	73.3	0.0
LnGrp LOS	E	D		E	E		E	E		D	E	
Approach Vol, veh/h		1277			1269			1523			434	
Approach Delay, s/veh		48.4			71.2			72.7			47.8	
Approach LOS		D			E			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	49.5	21.8	16.6	57.4	59.0	12.3	33.0	41.0				
Change Period (Y+Rc), s	6.3	* 6.3	5.4	6.3	5.4	6.3	5.4	6.3				
Max Green Setting (Gmax), s	29.6	* 35	33.6	28.7	53.6	10.7	27.6	34.7				
Max Q Clear Time (g_c+I1), s	14.5	13.9	11.0	26.6	55.5	5.0	23.0	35.9				
Green Ext Time (p_c), s	1.1	1.6	0.2	1.3	0.0	0.1	0.3	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			63.0									
HCM 6th LOS			E									

# HCM 6th Signalized Intersection Summary 11: Lakeside Dr & McCarran Blvd

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	1280	125	330	2110	601	283	221	254	324	223	95
Future Volume (veh/h)	74	1280	125	330	2110	601	283	221	254	324	223	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	80	1376	0	355	2269	0	304	238	206	348	240	77
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	100	1154		411	1774		310	272	230	309	272	230
Arrive On Green	0.06	0.32	0.00	0.23	0.50	0.00	0.14	0.15	0.15	0.14	0.15	0.15
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	80	1376	0	355	2269	0	304	238	206	348	240	77
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	6.7	48.7	0.0	28.7	74.9	0.0	20.3	18.7	19.1	20.3	18.9	6.5
Cycle Q Clear(g_c), s	6.7	48.7	0.0	28.7	74.9	0.0	20.3	18.7	19.1	20.3	18.9	6.5
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	100	1154		411	1774		310	272	230	309	272	230
V/C Ratio(X)	0.80	1.19		0.86	1.28		0.98	0.88	0.89	1.13	0.88	0.33
Avail Cap(c_a), veh/h	173	1154		411	1774		310	304	258	309	304	258
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)	0.64	0.64	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.0	50.6	0.0	55.4	37.6	0.0	49.6	62.8	63.0	49.9	62.8	57.6
Incr Delay (d2), s/veh	9.1	92.5	0.0	20.8	130.0	0.0	45.8	22.0	28.3	90.0	23.1	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.6	49.0	0.0	21.3	90.1	0.0	19.8	15.8	14.4	26.0	16.1	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.1	143.1	0.0	76.2	167.6	0.0	95.3	84.7	91.2	140.0	86.0	58.4
LnGrp LOS	E	F		E	F		F	F	F	F	F	E
Approach Vol, veh/h	1456			2624			748			665		
Approach Delay, s/veh	139.6			155.2			90.8			111.0		
Approach LOS	F			F			F			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	27.4	40.0	55.0	25.0	27.4	13.8	81.2				
Change Period (Y+Rc), s	* 4.7	5.6	5.4	6.3	* 4.7	5.6	5.4	6.3				
Max Green Setting (Gmax), s	* 20	24.4	34.6	48.7	* 20	24.4	14.6	68.7				
Max Q Clear Time (g_c+I1), s	22.3	21.1	30.7	50.7	22.3	20.9	8.7	76.9				
Green Ext Time (p_c), s	0.0	0.7	0.4	0.0	0.0	0.5	0.1	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	136.9											
HCM 6th LOS	F											

# HCM 6th Signalized Intersection Summary 12: Plumas St & McCarran Blvd

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	947	133	148	1995	388	157	179	205	323	183	43
Future Volume (veh/h)	26	947	133	148	1995	388	157	179	205	323	183	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	29	1052	134	164	2217	325	174	199	172	359	203	44
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	50	1514	193	246	2061	919	216	308	261	466	394	85
Arrive On Green	0.03	0.48	0.48	0.28	1.00	1.00	0.16	0.16	0.16	0.07	0.26	0.26
Sat Flow, veh/h	1781	3171	403	1781	3554	1585	1133	1870	1585	3456	1489	323
Grp Volume(v), veh/h	29	589	597	164	2217	325	174	199	172	359	0	247
Grp Sat Flow(s),veh/h/ln	1781	1777	1798	1781	1777	1585	1133	1870	1585	1728	0	1812
Q Serve(g_s), s	2.4	38.9	39.0	12.3	0.0	0.0	22.3	14.9	15.3	10.5	0.0	17.4
Cycle Q Clear(g_c), s	2.4	38.9	39.0	12.3	0.0	0.0	24.7	14.9	15.3	10.5	0.0	17.4
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	50	848	858	246	2061	919	216	308	261	466	0	480
V/C Ratio(X)	0.58	0.69	0.70	0.67	1.08	0.35	0.80	0.65	0.66	0.77	0.00	0.51
Avail Cap(c_a), veh/h	233	848	858	246	2061	919	216	308	261	466	0	480
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.0	30.6	30.7	51.2	0.0	0.0	64.2	58.6	58.7	51.7	0.0	47.0
Incr Delay (d2), s/veh	10.2	4.7	4.6	1.3	35.2	0.1	19.4	4.6	6.0	7.7	0.0	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(95%),veh/ln	2.2	23.9	24.2	6.0	12.4	0.0	12.5	12.0	10.6	4.1	0.0	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.2	35.3	35.3	52.6	35.2	0.1	83.6	63.2	64.7	59.5	0.0	47.9
LnGrp LOS	F	D	D	D	F	A	F	E	E	E	A	D
Approach Vol, veh/h		1215			2706			545			606	
Approach Delay, s/veh		36.4			32.0			70.2			54.8	
Approach LOS		D			C			E			D	
Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	15.0	30.0	26.0	79.0		45.0	10.6	94.4				
Change Period (Y+Rc), s	4.5	* 5.3	* 5.3	7.4		* 5.3	6.4	* 7.4				
Max Green Setting (Gmax), s	10.5	* 25	* 21	71.6		* 40	19.6	* 73				
Max Q Clear Time (g_c+I1), s	12.5	26.7	14.3	41.0		19.4	4.4	2.0				
Green Ext Time (p_c), s	0.0	0.0	0.2	8.5		1.4	0.0	41.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				39.9								
HCM 6th LOS				D								

# HCM 6th Signalized Intersection Summary

## 13: McCarran Blvd & Caughlin Pkwy/Cashil Blvd

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	317	94	308	33	85	42	379	1522	50	79	810	287
Future Volume (veh/h)	317	94	308	33	85	42	379	1522	50	79	810	287
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	396	118	290	41	106	40	474	1902	56	99	1012	324
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	426	522	443	54	131	111	292	1687	49	120	1018	324
Arrive On Green	0.24	0.28	0.28	0.03	0.07	0.07	0.16	0.48	0.48	0.07	0.38	0.38
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3525	103	1781	2653	843
Grp Volume(v), veh/h	396	118	290	41	106	40	474	954	1004	99	675	661
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1852	1781	1777	1719
Q Serve(g_s), s	32.6	7.3	24.2	3.4	8.4	3.6	24.6	71.8	71.8	8.2	56.7	57.6
Cycle Q Clear(g_c), s	32.6	7.3	24.2	3.4	8.4	3.6	24.6	71.8	71.8	8.2	56.7	57.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.49
Lane Grp Cap(c), veh/h	426	522	443	54	131	111	292	850	886	120	682	660
V/C Ratio(X)	0.93	0.23	0.66	0.76	0.81	0.36	1.62	1.12	1.13	0.83	0.99	1.00
Avail Cap(c_a), veh/h	683	522	443	683	166	141	292	850	886	146	682	660
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	55.8	41.6	47.7	72.2	68.7	66.5	62.7	39.1	39.1	69.1	45.9	46.2
Incr Delay (d2), s/veh	13.4	0.2	3.5	19.6	20.2	1.9	295.4	70.1	73.9	26.3	31.8	35.4
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(95%),veh/ln	23.0	6.3	15.4	3.4	8.4	2.8	53.7	62.2	66.2	8.0	38.8	38.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.2	41.8	51.2	91.8	88.9	68.5	358.1	109.2	113.0	95.4	77.8	81.6
LnGrp LOS	E	D	D	F	F	E	F	F	F	F	E	F
Approach Vol, veh/h		804			187			2432			1435	
Approach Delay, s/veh		58.7			85.2			159.3			80.7	
Approach LOS		E			F			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.8	78.1	9.0	47.1	30.0	63.9	40.4	15.7				
Change Period (Y+Rc), s	5.7	* 6.3	4.5	* 5.2	5.4	6.3	4.5	* 5.2				
Max Green Setting (Gmax), s	12.3	* 46	57.5	* 13	24.6	33.7	57.5	* 13				
Max Q Clear Time (g_c+I1), s	10.2	73.8	5.4	26.2	26.6	59.6	34.6	10.4				
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.0	0.0	1.3	0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			116.6									
HCM 6th LOS			F									

# HCM 6th Signalized Intersection Summary 14: McCarran Blvd & Caughlin Pkwy/Plumb Ln

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	81	75	62	88	397	81	1586	88	334	1132	230
Future Volume (veh/h)	207	81	75	62	88	397	81	1586	88	334	1132	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	241	94	66	72	102	349	94	1844	92	388	1316	240
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	466	395	374	379	321	115	1601	79	290	1680	303
Arrive On Green	0.09	0.25	0.25	0.04	0.20	0.20	0.06	0.46	0.46	0.16	0.56	0.56
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3446	171	1781	3007	542
Grp Volume(v), veh/h	241	94	66	72	102	349	94	943	993	388	772	784
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1840	1781	1777	1773
Q Serve(g_s), s	13.5	6.0	4.9	4.8	6.9	30.4	7.8	69.7	69.7	24.4	50.8	52.5
Cycle Q Clear(g_c), s	13.5	6.0	4.9	4.8	6.9	30.4	7.8	69.7	69.7	24.4	50.8	52.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		0.31
Lane Grp Cap(c), veh/h	356	466	395	374	379	321	115	826	855	290	993	991
V/C Ratio(X)	0.68	0.20	0.17	0.19	0.27	1.09	0.82	1.14	1.16	1.34	0.78	0.79
Avail Cap(c_a), veh/h	356	466	395	516	379	321	164	826	855	290	993	991
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	43.8	44.5	44.1	44.4	50.4	59.8	69.3	40.1	40.1	62.8	25.8	26.2
Incr Delay (d2), s/veh	5.1	0.2	0.2	0.2	0.4	75.3	18.9	78.4	85.4	174.1	4.0	4.4
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(95%),veh/ln	3.7	5.1	3.6	3.9	6.0	27.4	7.4	63.8	68.6	37.5	28.5	29.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.8	44.7	44.3	44.7	50.8	135.1	88.2	118.6	125.6	236.9	29.8	30.6
LnGrp LOS	D	D	D	D	D	F	F	F	F	F	C	C
Approach Vol, veh/h	401			523			2030			1944		
Approach Delay, s/veh	47.1			106.2			120.6			71.4		
Approach LOS	D			F			F			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	77.2	11.0	42.3	15.9	91.3	18.0	35.3				
Change Period (Y+Rc), s	5.6	7.2	4.5	4.9	6.2	* 7.2	4.5	* 4.9				
Max Green Setting (Gmax), s	24.4	59.8	18.5	25.1	13.8	* 71	13.5	* 30				
Max Q Clear Time (g_c+I1), s	26.4	71.7	6.8	8.0	9.8	54.5	15.5	32.4				
Green Ext Time (p_c), s	0.0	0.0	0.1	0.6	0.1	9.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	93.5											
HCM 6th LOS	F											



























# HCM 6th Signalized Intersection Summary 15: McCarran Blvd & Mayberry Dr
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	215	196	220	246	515	262	1722	179	377	1278	221
Future Volume (veh/h)	167	215	196	220	246	515	262	1722	179	377	1278	221
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	194	250	0	256	286	0	305	2002	0	438	1486	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	241	303		265	303		582	1966		356	1493	
Arrive On Green	0.10	0.16	0.00	0.10	0.16	0.00	0.33	0.55	0.00	0.20	0.42	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	194	250	0	256	286	0	305	2002	0	438	1486	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	13.5	19.4	0.0	15.2	22.7	0.0	20.9	83.0	0.0	30.0	62.5	0.0
Cycle Q Clear(g_c), s	13.5	19.4	0.0	15.2	22.7	0.0	20.9	83.0	0.0	30.0	62.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	241	303		265	303		582	1966		356	1493	
V/C Ratio(X)	0.80	0.83		0.96	0.94		0.52	1.02		1.23	1.00	
Avail Cap(c_a), veh/h	241	304		265	303		582	1966		356	1493	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.09	0.09	0.00
Uniform Delay (d), s/veh	47.5	60.8	0.0	52.2	62.2	0.0	41.0	33.5	0.0	60.0	43.4	0.0
Incr Delay (d2), s/veh	17.6	16.7	0.0	45.3	37.0	0.0	0.9	25.0	0.0	105.6	6.1	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(95%),veh/ln	11.6	15.9	0.0	9.6	19.9	0.0	14.0	50.6	0.0	29.5	29.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	77.5	0.0	97.5	99.2	0.0	41.9	58.5	0.0	165.6	49.4	0.0
LnGrp LOS	E	E		F	F		D	F		F	D	
Approach Vol, veh/h		444			542			2307			1924	
Approach Delay, s/veh		72.1			98.4			56.3			75.9	
Approach LOS		E			F			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	36.0	90.2	20.0	30.0	56.2	70.0	20.0	30.0				
Change Period (Y+Rc), s	6.0	7.1	* 4.8	* 5.7	7.1	* 7	* 4.7	5.7				
Max Green Setting (Gmax), s	30.0	56.9	* 15	* 24	23.9	* 63	* 15	24.3				
Max Q Clear Time (g_c+l1), s	32.0	85.0	17.2	21.4	22.9	64.5	15.5	24.7				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4	0.1	0.0	0.0	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			69.2									
HCM 6th LOS			E									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	292	126	150	333	182	142	374	1838	217	117	1399	210
Future Volume (veh/h)	292	126	150	333	182	142	374	1838	217	117	1399	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	332	143	0	378	207	121	425	2089	0	133	1590	181
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	171		343	238	202	416	1662		156	1172	523
Arrive On Green	0.15	0.09	0.00	0.19	0.13	0.13	0.47	0.94	0.00	0.09	0.33	0.33
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	332	143	0	378	207	121	425	2089	0	133	1590	181
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	23.0	11.3	0.0	28.9	16.3	8.7	35.0	70.1	0.0	11.0	49.5	8.4
Cycle Q Clear(g_c), s	23.0	11.3	0.0	28.9	16.3	8.7	35.0	70.1	0.0	11.0	49.5	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	171		343	238	202	416	1662		156	1172	523
V/C Ratio(X)	1.22	0.83		1.10	0.87	0.60	1.02	1.26		0.85	1.36	0.35
Avail Cap(c_a), veh/h	273	340		343	322	273	416	1662		223	1172	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.09	0.09	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.5	67.0	0.0	60.6	64.2	40.1	40.0	4.9	0.0	67.5	50.3	16.1
Incr Delay (d2), s/veh	125.7	10.0	0.0	79.1	17.0	2.8	19.4	116.1	0.0	19.1	166.1	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(95%),veh/ln	29.5	9.7	0.0	29.2	13.6	6.3	15.7	37.5	0.0	9.7	71.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	189.2	77.0	0.0	139.6	81.2	42.9	59.4	121.0	0.0	86.5	216.3	17.9
LnGrp LOS	F	E		F	F	D	F	F		F	F	B
Approach Vol, veh/h		475			706			2514			1904	
Approach Delay, s/veh		155.4			105.9			110.6			188.4	
Approach LOS		F			F			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.3	77.3	33.9	19.5	40.0	56.7	28.0	25.3				
Change Period (Y+Rc), s	6.2	* 7.2	5.0	5.7	5.0	7.2	5.0	6.2				
Max Green Setting (Gmax), s	18.8	* 59	22.0	27.3	35.0	42.8	23.0	25.8				
Max Q Clear Time (g_c+I1), s	13.0	72.1	30.9	13.3	37.0	51.5	25.0	18.3				
Green Ext Time (p_c), s	0.1	0.0	0.0	0.5	0.0	0.0	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay			140.3									
HCM 6th LOS			F									

# HCM 6th Signalized Intersection Summary 17: McCarran Blvd & Mae Anne Ave/Driveway



























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	680	212	519	282	205	117	705	1561	246	123	1151	394
Future Volume (veh/h)	680	212	519	282	205	117	705	1561	246	123	1151	394
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	747	233	0	310	225	0	775	1715	0	135	1265	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	696	263		332	247		908	2213		157	1287	
Arrive On Green	0.20	0.14	0.00	0.19	0.13	0.00	0.26	0.43	0.00	0.09	0.25	0.00
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	3456	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	747	233	0	310	225	0	775	1715	0	135	1265	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1728	1702	1585	1781	1702	1585
Q Serve(g_s), s	30.2	18.3	0.0	25.7	17.8	0.0	32.0	43.0	0.0	11.2	37.0	0.0
Cycle Q Clear(g_c), s	30.2	18.3	0.0	25.7	17.8	0.0	32.0	43.0	0.0	11.2	37.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	696	263		332	247		908	2213		157	1287	
V/C Ratio(X)	1.07	0.89		0.94	0.91		0.85	0.77		0.86	0.98	
Avail Cap(c_a), veh/h	696	364		332	249		908	2213		164	1287	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.51	0.51	0.00
Uniform Delay (d), s/veh	59.9	63.3	0.0	60.1	64.2	0.0	52.6	36.3	0.0	67.5	55.8	0.0
Incr Delay (d2), s/veh	55.6	17.2	0.0	33.0	33.9	0.0	10.0	2.7	0.0	20.0	14.4	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(95%),veh/ln	26.6	15.1	0.0	21.1	16.3	0.0	21.0	24.5	0.0	8.7	21.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	115.5	80.5	0.0	93.1	98.2	0.0	62.6	39.0	0.0	87.5	70.2	0.0
LnGrp LOS	F	F		F	F		E	D		F	E	
Approach Vol, veh/h	980			535			2490			1400		
Approach Delay, s/veh	107.2			95.2			46.3			71.8		
Approach LOS	F			F			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.4	71.4	32.9	26.9	45.8	45.0	35.0	24.8				
Change Period (Y+Rc), s	6.2	6.4	5.0	* 5.8	6.4	* 7.2	* 4.8	5.0				
Max Green Setting (Gmax), s	13.8	63.6	20.5	* 29	39.4	* 38	* 30	20.0				
Max Q Clear Time (g_c+I1), s	13.2	45.0	27.7	20.3	34.0	39.0	32.2	19.8				
Green Ext Time (p_c), s	0.0	11.0	0.0	0.8	1.5	0.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	68.8											
HCM 6th LOS	E											

# HCM 6th Signalized Intersection Summary

## 18: McCarran Blvd & 7th St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	498	264	246	244	278	217	347	1673	261	238	1218	522
Future Volume (veh/h)	498	264	246	244	278	217	347	1673	261	238	1218	522
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	560	297	207	274	312	183	390	1880	220	267	1369	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	348	364	309	338	312	264	1742	3771	1171	318	1634	
Arrive On Green	0.17	0.19	0.19	0.14	0.17	0.17	0.50	0.74	0.74	0.09	0.32	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	560	297	207	274	312	183	390	1880	220	267	1369	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	25.3	22.8	12.1	18.9	25.0	16.3	9.5	22.9	6.3	11.4	37.4	0.0
Cycle Q Clear(g_c), s	25.3	22.8	12.1	18.9	25.0	16.3	9.5	22.9	6.3	11.4	37.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	348	364	309	338	312	264	1742	3771	1171	318	1634	
V/C Ratio(X)	1.61	0.82	0.67	0.81	1.00	0.69	0.22	0.50	0.19	0.84	0.84	
Avail Cap(c_a), veh/h	348	364	309	388	312	264	1742	3771	1171	438	1634	
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	0.40	0.40	0.40	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.1	57.8	25.0	44.1	62.5	58.9	20.8	8.1	6.0	67.0	47.4	0.0
Incr Delay (d2), s/veh	286.3	13.4	5.6	10.9	51.2	7.5	0.1	0.2	0.1	10.0	5.3	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(95%),veh/ln	59.4	17.8	8.8	14.3	22.9	11.5	5.7	9.9	3.5	9.2	22.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	333.3	71.2	30.6	55.0	113.7	66.4	20.9	8.3	6.1	77.0	52.7	0.0
LnGrp LOS	F	E	C	E	F	E	C	A	A	E	D	
Approach Vol, veh/h	1064			769			2490			1636		
Approach Delay, s/veh	201.3			81.5			10.1			56.7		
Approach LOS	F			F			B			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.8	118.6	25.8	34.8	83.4	55.0	30.0	30.6				
Change Period (Y+Rc), s	6.0	6.4	4.6	5.6	6.4	* 7	* 4.7	* 5.6				
Max Green Setting (Gmax), s	19.0	58.6	25.4	24.4	29.4	* 48	* 25	* 25				
Max Q Clear Time (g_c+I1), s	13.4	24.9	20.9	24.8	11.5	39.4	27.3	27.0				
Green Ext Time (p_c), s	0.4	18.6	0.3	0.0	1.2	5.2	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	66.2											
HCM 6th LOS	E											

# HCM 6th Signalized Intersection Summary 19: Clear Acre Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 			 			 	
Traffic Volume (veh/h)	785	1652	28	83	903	238	81	456	199	231	306	379
Future Volume (veh/h)	785	1652	28	83	903	238	81	456	199	231	306	379
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	935	1967	29	99	1075	214	96	543	0	275	364	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1074	2000	29	120	1095	488	102	609		343	360	
Arrive On Green	0.31	0.56	0.56	0.07	0.31	0.31	0.20	0.20	0.00	0.19	0.19	0.00
Sat Flow, veh/h	3456	3585	53	1781	3554	1585	520	3195	0	1781	1870	1585
Grp Volume(v), veh/h	935	972	1024	99	1075	214	341	298	0	275	364	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1861	1781	1777	1585	1844	1777	0	1781	1870	1585
Q Serve(g_s), s	38.3	80.2	81.1	8.2	45.0	16.2	27.3	24.3	0.0	22.1	28.9	0.0
Cycle Q Clear(g_c), s	38.3	80.2	81.1	8.2	45.0	16.2	27.3	24.3	0.0	22.1	28.9	0.0
Prop In Lane	1.00		0.03	1.00		1.00	0.28		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	1074	991	1038	120	1095	488	362	349		343	360	
V/C Ratio(X)	0.87	0.98	0.99	0.82	0.98	0.44	0.94	0.85		0.80	1.01	
Avail Cap(c_a), veh/h	1074	991	1038	169	1095	488	365	352		343	360	
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.8	32.4	32.6	69.1	51.5	41.5	59.4	58.2	0.0	57.8	60.5	0.0
Incr Delay (d2), s/veh	7.9	24.3	24.7	19.7	22.9	0.6	32.0	18.0	0.0	12.7	50.0	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(95%),veh/ln	24.1	48.8	51.5	7.8	30.8	10.5	22.5	18.5	0.0	16.6	25.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.7	56.7	57.3	88.7	74.4	42.1	91.4	76.2	0.0	70.6	110.5	0.0
LnGrp LOS	E	E	E	F	E	D	F	E		E	F	
Approach Vol, veh/h		2931			1388			639			639	
Approach Delay, s/veh		56.9			70.4			84.3			93.3	
Approach LOS		E			E			F			F	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		34.8	15.9	91.4		35.0	54.3	53.0				
Change Period (Y+Rc), s		* 5.3	5.8	6.9		6.1	6.9	* 6.8				
Max Green Setting (Gmax), s		* 30	14.2	53.1		28.9	21.1	* 46				
Max Q Clear Time (g_c+I1), s		29.3	10.2	83.1		30.9	40.3	47.0				
Green Ext Time (p_c), s		0.2	0.1	0.0		0.0	0.0	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				67.5								
HCM 6th LOS				E								
























# **Appendix E**

## **2050 Build Synchro Output**





























# HCM 6th Signalized Intersection Summary

## 1: El Rancho Dr & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	658	69	42	1468	9	51	60	27	14	242	163
Future Volume (veh/h)	44	658	69	42	1468	9	51	60	27	14	242	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	48	723	56	46	1613	0	56	66	27	15	266	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	1509	673	81	1568		72	85	35	230	294	
Arrive On Green	0.03	0.42	0.42	0.09	0.88	0.00	0.04	0.07	0.07	0.13	0.16	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1261	516	1781	1870	1585
Grp Volume(v), veh/h	48	723	56	46	1613	0	56	0	93	15	266	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1777	1781	1870	1585
Q Serve(g_s), s	4.0	22.0	1.6	3.7	66.2	0.0	4.7	0.0	7.7	1.1	21.0	0.0
Cycle Q Clear(g_c), s	4.0	22.0	1.6	3.7	66.2	0.0	4.7	0.0	7.7	1.1	21.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	62	1509	673	81	1568		72	0	120	230	294	
V/C Ratio(X)	0.77	0.48	0.08	0.57	1.03		0.78	0.00	0.77	0.07	0.90	
Avail Cap(c_a), veh/h	233	1509	673	229	1568		184	0	359	230	355	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.68	0.68	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	71.8	31.2	6.5	66.8	8.8	0.0	71.3	0.0	68.8	57.4	62.1	0.0
Incr Delay (d2), s/veh	17.9	1.1	0.2	4.2	26.6	0.0	16.1	0.0	10.1	0.1	22.8	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(95%),veh/ln	3.8	14.5	2.2	3.1	13.8	0.0	4.4	0.0	7.0	0.9	17.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.7	32.3	6.8	71.0	35.4	0.0	87.4	0.0	79.0	57.5	84.9	0.0
LnGrp LOS	F	C	A	E	F		F	A	E	E	F	
Approach Vol, veh/h		827			1659			149			281	
Approach Delay, s/veh		33.9			36.4			82.1			83.4	
Approach LOS		C			D			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.9	14.8	13.4	70.0	10.6	30.1	10.6	72.8				
Change Period (Y+Rc), s	* 6.5	* 4.7	6.6	* 6.3	4.5	6.5	5.4	6.6				
Max Green Setting (Gmax), s	* 15	* 30	19.3	* 64	15.5	28.5	19.6	63.4				
Max Q Clear Time (g_c+I1), s	3.1	9.7	5.7	24.0	6.7	23.0	6.0	68.2				
Green Ext Time (p_c), s	0.0	0.4	0.1	5.3	0.1	0.7	0.1	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			42.5									
HCM 6th LOS			D									
























## HCM 6th Signalized Intersection Summary

### 2: Sullivan Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	63	1091	35	17	1270	183	35	40	15	46	98	230
Future Volume (veh/h)	63	1091	35	17	1270	183	35	40	15	46	98	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	70	1212	29	19	1411	151	39	44	16	51	109	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	1579	704	26	1436	641	49	55	20	131	137	
Arrive On Green	0.05	0.44	0.44	0.03	0.81	0.81	0.07	0.07	0.07	0.07	0.07	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	703	793	288	1781	1870	1585
Grp Volume(v), veh/h	70	1212	29	19	1411	151	99	0	0	51	109	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1783	0	0	1781	1870	1585
Q Serve(g_s), s	5.8	43.1	1.6	1.6	55.4	3.4	8.2	0.0	0.0	4.1	8.6	0.0
Cycle Q Clear(g_c), s	5.8	43.1	1.6	1.6	55.4	3.4	8.2	0.0	0.0	4.1	8.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.39		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	89	1579	704	26	1436	641	124	0	0	131	137	
V/C Ratio(X)	0.79	0.77	0.04	0.73	0.98	0.24	0.80	0.00	0.00	0.39	0.79	
Avail Cap(c_a), veh/h	229	1579	704	261	1462	652	278	0	0	242	254	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	0.74	0.74	0.74	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	70.5	35.2	23.6	72.5	13.9	8.9	68.8	0.0	0.0	66.3	68.4	0.0
Incr Delay (d2), s/veh	13.2	2.2	0.0	25.0	16.7	0.6	11.3	0.0	0.0	1.9	9.9	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(95%),veh/ln	5.3	25.3	1.0	1.6	13.0	2.1	7.5	0.0	0.0	3.5	8.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.7	37.3	23.6	97.5	30.5	9.5	80.1	0.0	0.0	68.2	78.3	0.0
LnGrp LOS	F	D	C	F	C	A	F	A	A	E	E	
Approach Vol, veh/h		1311			1581			99			160	
Approach Delay, s/veh		39.5			29.3			80.1			75.1	
Approach LOS		D			C			F			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.0	8.2	72.9		17.6	14.2	66.9				
Change Period (Y+Rc), s		6.6	6.0	6.3		6.6	* 6.7	* 6.3				
Max Green Setting (Gmax), s		23.4	22.0	58.7		20.4	* 19	* 62				
Max Q Clear Time (g_c+l1), s		10.2	3.6	45.1		10.6	7.8	57.4				
Green Ext Time (p_c), s		0.4	0.0	6.7		0.4	0.1	3.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			37.5									
HCM 6th LOS			D									
























# HCM 6th Signalized Intersection Summary

## 3: Rock Blvd & McCarran Blvd













												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	0	1041	111	125	1593	0	77	1	81	2	5	0
Future Volume (veh/h)	0	1041	111	125	1593	0	77	1	81	2	5	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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1197	95	144	1831	0	89	1	93	2	6	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1	1512	675	169	1995	0	155	1	277	36	91	0
Arrive On Green	0.00	0.43	0.43	0.10	0.56	0.00	0.17	0.17	0.17	0.17	0.17	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3647	0	615	9	1585	35	523	0
Grp Volume(v), veh/h	0	1197	95	144	1831	0	90	0	93	8	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	0	623	0	1585	558	0	0
Q Serve(g_s), s	0.0	43.8	5.5	11.9	69.9	0.0	0.0	0.0	7.7	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	43.8	5.5	11.9	69.9	0.0	24.0	0.0	7.7	24.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	0.99		1.00	0.25		0.00
Lane Grp Cap(c), veh/h	1	1512	675	169	1995	0	157	0	277	128	0	0
V/C Ratio(X)	0.00	0.79	0.14	0.85	0.92	0.00	0.57	0.00	0.34	0.06	0.00	0.00
Avail Cap(c_a), veh/h	222	1639	731	403	1995	0	192	0	317	175	0	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)	0.00	0.83	0.83	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	37.3	26.3	66.8	29.8	0.0	61.0	0.0	54.3	52.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.1	0.1	11.2	8.2	0.0	3.3	0.0	0.7	0.2	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(95%),veh/ln	0.0	25.3	3.7	9.9	39.0	0.0	6.4	0.0	5.6	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	39.4	26.4	78.0	38.0	0.0	64.3	0.0	55.0	52.6	0.0	0.0
LnGrp LOS	A	D	C	E	D	A	E	A	D	D	A	A
Approach Vol, veh/h	1292				1975				183			
Approach Delay, s/veh	38.5				40.9				59.5			
Approach LOS	D				D				E			
Timer - Assigned Phs	2			3		4		6		7		
Phs Duration (G+Y+Rc), s	31.3			20.4		69.6		31.3		0.0		
Change Period (Y+Rc), s	* 5			* 6.1		5.8		* 5		6.3		
Max Green Setting (Gmax), s	* 30			* 34		69.2		* 30		18.7		
Max Q Clear Time (g_c+I1), s	26.0			13.9		45.8		26.1		0.0		
Green Ext Time (p_c), s	0.3			0.3		9.1		0.0		0.0		
Intersection Summary												
HCM 6th Ctrl Delay	41.0											
HCM 6th LOS	D											

# HCM 6th Signalized Intersection Summary

## 4: McCarran Blvd & E Prater Way































												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	322	180	180	276	127	108	336	128	200	856	131
Future Volume (veh/h)	69	322	180	180	276	127	108	336	128	200	856	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	77	358	0	200	307	0	120	373	0	222	951	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	444		272	665		169	983		480	1291	
Arrive On Green	0.05	0.12	0.00	0.11	0.19	0.00	0.05	0.28	0.00	0.14	0.36	0.00
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	77	358	0	200	307	0	120	373	0	222	951	0
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.6	14.7	0.0	14.3	11.5	0.0	5.1	12.7	0.0	8.9	34.9	0.0
Cycle Q Clear(g_c), s	5.6	14.7	0.0	14.3	11.5	0.0	5.1	12.7	0.0	8.9	34.9	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	254	444		272	665		169	983		480	1291	
V/C Ratio(X)	0.30	0.81		0.74	0.46		0.71	0.38		0.46	0.74	
Avail Cap(c_a), veh/h	339	765		340	945		438	983		737	1291	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.5	63.9	0.0	48.9	54.2	0.0	70.3	43.8	0.0	59.4	41.5	0.0
Incr Delay (d2), s/veh	0.7	3.5	0.0	6.2	0.5	0.0	5.5	1.1	0.0	0.7	3.8	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(95%),veh/ln	4.6	11.2	0.0	11.1	9.0	0.0	4.3	9.7	0.0	7.0	22.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.2	67.4	0.0	55.1	54.7	0.0	75.8	45.0	0.0	60.1	45.3	0.0
LnGrp LOS	D	E		E	D		E	D		E	D	
Approach Vol, veh/h		435			507			493			1173	
Approach Delay, s/veh		65.1			54.9			52.5			48.1	
Approach LOS		E			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.8	47.0	22.2	23.8	13.3	60.5	12.9	33.2				
Change Period (Y+Rc), s	6.0	5.5	* 5.7	* 5.1	6.0	* 6	5.5	5.1				
Max Green Setting (Gmax), s	32.0	41.5	* 22	* 32	19.0	* 55	14.5	39.9				
Max Q Clear Time (g_c+I1), s	10.9	14.7	16.3	16.7	7.1	36.9	7.6	13.5				
Green Ext Time (p_c), s	0.7	2.3	0.3	2.0	0.2	6.0	0.1	1.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			53.1									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary 5: McCarran Blvd & Nichols Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	20	60	434	23	20	18	549	84	17	1472	52
Future Volume (veh/h)	34	20	60	434	23	20	18	549	84	17	1472	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	37	22	59	485	0	22	19	590	81	18	1583	51
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	28	76	559	0	249	26	1804	244	25	2013	65
Arrive On Green	0.06	0.06	0.06	0.16	0.00	0.16	0.01	0.40	0.40	0.01	0.40	0.40
Sat Flow, veh/h	1781	449	1204	3563	0	1585	1781	4547	616	1781	5081	164
Grp Volume(v), veh/h	37	0	81	485	0	22	19	440	231	18	1060	574
Grp Sat Flow(s),veh/h/ln	1781	0	1654	1781	0	1585	1781	1702	1759	1781	1702	1841
Q Serve(g_s), s	3.0	0.0	7.2	19.9	0.0	1.8	1.6	13.4	13.7	1.5	41.0	41.0
Cycle Q Clear(g_c), s	3.0	0.0	7.2	19.9	0.0	1.8	1.6	13.4	13.7	1.5	41.0	41.0
Prop In Lane	1.00		0.73	1.00		1.00	1.00		0.35	1.00		0.09
Lane Grp Cap(c), veh/h	113	0	105	559	0	249	26	1350	698	25	1349	729
V/C Ratio(X)	0.33	0.00	0.77	0.87	0.00	0.09	0.73	0.33	0.33	0.72	0.79	0.79
Avail Cap(c_a), veh/h	234	0	217	824	0	367	224	1350	698	165	1349	729
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	67.2	0.0	69.2	61.7	0.0	54.1	73.6	31.4	31.4	73.6	39.7	39.7
Incr Delay (d2), s/veh	1.7	0.0	11.4	6.7	0.0	0.2	32.2	0.6	1.3	31.6	4.7	8.4
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(95%),veh/ln	2.6	0.0	6.2	14.7	0.0	1.3	1.7	9.5	10.1	1.6	24.6	27.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.9	0.0	80.6	68.5	0.0	54.2	105.8	32.0	32.7	105.3	44.4	48.1
LnGrp LOS	E	A	F	E	A	D	F	C	C	F	D	D
Approach Vol, veh/h	118			507			690			1652		
Approach Delay, s/veh	76.9			67.9			34.3			46.3		
Approach LOS	E			E			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	65.0		28.8	8.3	64.9		14.8				
Change Period (Y+Rc), s	6.1	5.5		* 5.3	6.1	5.5		5.3				
Max Green Setting (Gmax), s	13.9	59.5		* 35	18.9	54.5		19.7				
Max Q Clear Time (g_c+I1), s	3.5	15.7		21.9	3.6	43.0		9.2				
Green Ext Time (p_c), s	0.0	4.6		1.6	0.0	7.6		0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	48.4											
HCM 6th LOS	D											
























# HCM 6th Signalized Intersection Summary

## 6: McCarran Blvd & E Greg St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 			  			  	
Traffic Volume (veh/h)	86	135	12	346	333	127	126	465	227	233	1245	116
Future Volume (veh/h)	86	135	12	346	333	127	126	465	227	233	1245	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	93	147	12	376	362	0	137	505	0	253	1353	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	5	5	5	5	5	5
Cap, veh/h	139	266	22	432	574		574	2389		279	1544	
Arrive On Green	0.04	0.08	0.08	0.13	0.16	0.00	0.33	0.48	0.00	0.16	0.31	0.00
Sat Flow, veh/h	3456	3330	269	3456	3554	1585	1739	4985	1547	1739	5149	0
Grp Volume(v), veh/h	93	78	81	376	362	0	137	505	0	253	1353	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1822	1728	1777	1585	1739	1662	1547	1739	1662	0
Q Serve(g_s), s	4.0	6.3	6.4	16.0	14.3	0.0	8.6	8.8	0.0	21.4	38.6	0.0
Cycle Q Clear(g_c), s	4.0	6.3	6.4	16.0	14.3	0.0	8.6	8.8	0.0	21.4	38.6	0.0
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	139	142	146	432	574		574	2389		279	1544	
V/C Ratio(X)	0.67	0.55	0.56	0.87	0.63		0.24	0.21		0.91	0.88	
Avail Cap(c_a), veh/h	445	389	398	560	896		574	2389		447	1682	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	71.0	66.4	66.4	64.4	58.7	0.0	36.6	22.6	0.0	61.9	49.0	0.0
Incr Delay (d2), s/veh	5.4	3.3	3.3	11.3	1.2	0.0	0.2	0.2	0.0	14.9	5.2	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(95%),veh/ln	3.4	5.4	5.6	12.3	10.7	0.0	6.6	6.2	0.0	15.8	23.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.4	69.6	69.7	75.8	59.9	0.0	36.8	22.8	0.0	76.8	54.3	0.0
LnGrp LOS	E	E	E	E	E		D	C		E	D	
Approach Vol, veh/h		252			738			642			1606	
Approach Delay, s/veh		72.2			68.0			25.8			57.8	
Approach LOS		E			E			C			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.4	77.9	24.5	17.2	55.5	52.9	11.7	29.9				
Change Period (Y+Rc), s	6.4	* 6	* 5.7	* 5.2	6.0	* 6.4	* 5.7	* 5.7				
Max Green Setting (Gmax), s	38.6	* 31	* 24	* 33	19.0	* 51	* 19	* 38				
Max Q Clear Time (g_c+I1), s	23.4	10.8	18.0	8.4	10.6	40.6	6.0	16.3				
Green Ext Time (p_c), s	0.6	3.0	0.7	0.8	0.2	5.9	0.2	2.2				
Intersection Summary												
HCM 6th Ctrl Delay			54.9									
HCM 6th LOS			D									


























# HCM 6th Signalized Intersection Summary 7: McCarran Blvd & Mira Loma Dr

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	126	12	771	266	296	41	523	248	239	704	33
Future Volume (veh/h)	44	126	12	771	266	296	41	523	248	239	704	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	53	152	13	929	320	0	49	630	226	288	848	30
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	69	224	19	994	602		63	755	679	359	1068	331
Arrive On Green	0.04	0.07	0.07	0.29	0.32	0.00	0.04	0.15	0.15	0.11	0.21	0.21
Sat Flow, veh/h	1781	3316	281	3456	1870	1585	1739	4985	1547	3374	4985	1547
Grp Volume(v), veh/h	53	81	84	929	320	0	49	630	226	288	848	30
Grp Sat Flow(s),veh/h/ln	1781	1777	1820	1728	1870	1585	1739	1662	1547	1687	1662	1547
Q Serve(g_s), s	3.5	5.3	5.4	31.4	16.8	0.0	3.4	14.7	3.1	10.0	19.3	1.1
Cycle Q Clear(g_c), s	3.5	5.3	5.4	31.4	16.8	0.0	3.4	14.7	3.1	10.0	19.3	1.1
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	120	123	994	602		63	755	679	359	1068	331
V/C Ratio(X)	0.77	0.67	0.69	0.94	0.53		0.78	0.83	0.33	0.80	0.79	0.09
Avail Cap(c_a), veh/h	304	323	331	994	602		235	755	679	692	1068	331
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	54.6	54.7	41.7	33.3	0.0	57.3	49.4	2.5	52.4	44.6	12.8
Incr Delay (d2), s/veh	16.1	6.4	6.6	16.6	0.9	0.0	18.3	10.5	1.3	4.2	6.1	0.5
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(95%),veh/ln	3.4	4.7	4.9	22.0	12.3	0.0	3.2	10.9	5.5	7.8	13.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.2	61.0	61.3	58.3	34.2	0.0	75.6	60.0	3.8	56.6	50.8	13.3
LnGrp LOS	E	E	E	E	C		E	E	A	E	D	B
Approach Vol, veh/h	218			1249			905			1166		
Approach Delay, s/veh	64.1			52.1			46.8			51.2		
Approach LOS	E			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.2	24.9	39.7	13.3	11.0	32.0	9.2	43.9				
Change Period (Y+Rc), s	5.4	6.7	* 5.2	* 5.2	6.7	* 6.3	4.5	* 5.2				
Max Green Setting (Gmax), s	24.6	17.3	* 35	* 22	16.2	* 26	20.5	* 36				
Max Q Clear Time (g_c+I1), s	12.0	16.7	33.4	7.4	5.4	21.3	5.5	18.8				
Green Ext Time (p_c), s	0.8	0.3	0.5	0.7	0.0	2.1	0.1	1.7				
Intersection Summary												
HCM 6th Ctrl Delay	51.2											
HCM 6th LOS	D											

























# HCM 6th Signalized Intersection Summary

## 8: Longley Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	259	133	1183	763	40	70	472	505	51	624	161
Future Volume (veh/h)	114	259	133	1183	763	40	70	472	505	51	624	161
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	125	285	0	1300	838	0	77	519	0	56	686	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	540	378		1574	963		98	652		187	803	
Arrive On Green	0.16	0.11	0.00	0.32	0.28	0.00	0.05	0.18	0.00	0.10	0.23	0.00
Sat Flow, veh/h	3374	3561	0	4904	3469	1547	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	125	285	0	1300	838	0	77	519	0	56	686	0
Grp Sat Flow(s),veh/h/ln	1687	1735	0	1635	1735	1547	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	3.9	9.6	0.0	29.4	27.6	0.0	5.1	16.8	0.0	3.5	22.2	0.0
Cycle Q Clear(g_c), s	3.9	9.6	0.0	29.4	27.6	0.0	5.1	16.8	0.0	3.5	22.2	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	540	378		1574	963		98	652		187	803	
V/C Ratio(X)	0.23	0.75		0.83	0.87		0.79	0.80		0.30	0.85	
Avail Cap(c_a), veh/h	540	963		1574	963		137	897		187	998	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.0	51.9	0.0	37.6	41.3	0.0	56.0	46.8	0.0	49.6	44.5	0.0
Incr Delay (d2), s/veh	1.0	3.1	0.0	3.8	10.6	0.0	18.0	3.5	0.0	4.1	6.1	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(95%),veh/ln	3.0	7.5	0.0	17.3	18.4	0.0	4.9	11.9	0.0	3.1	15.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.0	55.0	0.0	41.4	51.9	0.0	74.0	50.3	0.0	53.7	50.6	0.0
LnGrp LOS	D	D		D	D		E	D		D	D	
Approach Vol, veh/h	410			2138			596			742		
Approach Delay, s/veh	51.9			45.5			53.4			50.9		
Approach LOS	D			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.0	28.7	45.2	19.8	13.3	33.4	25.0	40.0				
Change Period (Y+Rc), s	5.4	6.7	6.7	* 6.7	6.7	* 6.3	5.8	6.7				
Max Green Setting (Gmax), s	12.6	30.3	19.2	* 33	9.2	* 34	19.2	33.3				
Max Q Clear Time (g_c+I1), s	5.5	18.8	31.4	11.6	7.1	24.2	5.9	29.6				
Green Ext Time (p_c), s	0.0	2.3	0.0	1.5	0.0	2.9	0.3	1.7				
Intersection Summary												
HCM 6th Ctrl Delay	48.4											
HCM 6th LOS	D											

































# HCM 6th Signalized Intersection Summary

## 9: S Virginia St & McCarran Blvd





























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	350	517	187	110	491	273	74	650	120	432	590	84
Future Volume (veh/h)	350	517	187	110	491	273	74	650	120	432	590	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1811	1811	1811	1811	1811	1811	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	376	556	0	118	628	198	80	699	0	465	634	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	6	6	6	2	2	2	2	2	2
Cap, veh/h	454	1042		144	863	244	130	1271		579	1005	
Arrive On Green	0.04	0.07	0.00	0.08	0.16	0.16	0.04	0.20	0.00	0.12	0.28	0.00
Sat Flow, veh/h	3346	4944	1535	1725	5433	1535	3456	6696	0	5023	3554	1585
Grp Volume(v), veh/h	376	556	0	118	628	198	80	699	0	465	634	0
Grp Sat Flow(s),veh/h/ln	1673	1648	1535	1725	1811	1535	1728	1609	0	1674	1777	1585
Q Serve(g_s), s	13.4	13.0	0.0	8.1	13.2	7.7	2.7	11.7	0.0	10.8	18.7	0.0
Cycle Q Clear(g_c), s	13.4	13.0	0.0	8.1	13.2	7.7	2.7	11.7	0.0	10.8	18.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	454	1042		144	863	244	130	1271		579	1005	
V/C Ratio(X)	0.83	0.53		0.82	0.73	0.81	0.62	0.55		0.80	0.63	
Avail Cap(c_a), veh/h	686	1389		282	1299	367	420	1271		820	1005	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.9	50.1	0.0	54.1	48.0	12.8	56.9	43.3	0.0	51.8	37.6	0.0
Incr Delay (d2), s/veh	4.2	0.3	0.0	10.7	1.2	8.1	4.7	1.7	0.0	3.9	3.0	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(95%),veh/ln	9.9	9.3	0.0	6.9	9.9	9.6	2.3	8.2	0.0	8.2	13.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.1	50.5	0.0	64.8	49.2	20.9	61.5	45.1	0.0	55.6	40.6	0.0
LnGrp LOS	E	D		E	D	C	E	D		E	D	
Approach Vol, veh/h	932				944				779			
Approach Delay, s/veh	54.4				45.2				46.8			
Approach LOS	D				D				D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.1	30.0	15.4	31.6	9.9	40.2	21.7	25.4				
Change Period (Y+Rc), s	6.3	* 6.3	5.4	6.3	5.4	6.3	5.4	6.3				
Max Green Setting (Gmax), s	19.6	* 24	19.6	33.7	14.6	28.7	24.6	28.7				
Max Q Clear Time (g_c+I1), s	12.8	13.7	10.1	15.0	4.7	20.7	15.4	15.2				
Green Ext Time (p_c), s	1.0	3.1	0.2	3.3	0.1	2.4	0.9	3.9				
Intersection Summary												
HCM 6th Ctrl Delay	48.3											
HCM 6th LOS	D											

# HCM 6th Signalized Intersection Summary

## 10: Kietzke Ln & McCarran Blvd























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 		 	 	
Traffic Volume (veh/h)	118	1018	979	65	490	98	588	131	65	98	131	118
Future Volume (veh/h)	118	1018	979	65	490	98	588	131	65	98	131	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	131	1131	0	72	544	0	653	146	0	109	146	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	1221		509	2261		702	798		167	221	
Arrive On Green	0.09	0.24	0.00	0.29	0.44	0.00	0.20	0.22	0.00	0.05	0.06	0.00
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	131	1131	0	72	544	0	653	146	0	109	146	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	8.7	26.0	0.0	3.6	8.0	0.0	22.3	4.0	0.0	3.7	4.8	0.0
Cycle Q Clear(g_c), s	8.7	26.0	0.0	3.6	8.0	0.0	22.3	4.0	0.0	3.7	4.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	1221		509	2261		702	798		167	221	
V/C Ratio(X)	0.82	0.93		0.14	0.24		0.93	0.18		0.65	0.66	
Avail Cap(c_a), veh/h	291	1221		509	2261		708	850		564	702	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.76	0.76	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.7	44.6	0.0	31.9	20.8	0.0	47.0	37.6	0.0	56.1	55.0	0.0
Incr Delay (d2), s/veh	10.1	13.2	0.0	0.1	0.2	0.0	18.7	0.1	0.0	4.3	3.4	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(95%),veh/ln	7.6	17.7	0.0	2.8	5.5	0.0	16.5	3.1	0.0	3.0	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.8	57.8	0.0	32.0	21.0	0.0	65.7	37.7	0.0	60.4	58.4	0.0
LnGrp LOS	E	E		C	C		E	D		E	E	
Approach Vol, veh/h		1262			616			799			255	
Approach Delay, s/veh		58.5			22.3			60.6			59.3	
Approach LOS		E			C			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.2	33.2	40.6	35.0	30.7	13.7	16.1	59.4				
Change Period (Y+Rc), s	5.4	6.3	6.3	* 6.3	6.3	* 6.3	5.4	6.3				
Max Green Setting (Gmax), s	19.6	28.7	19.6	* 29	24.6	* 24	19.6	28.7				
Max Q Clear Time (g_c+I1), s	5.7	6.0	5.6	28.0	24.3	6.8	10.7	10.0				
Green Ext Time (p_c), s	0.2	0.7	0.1	0.5	0.1	0.6	0.2	3.2				
Intersection Summary												
HCM 6th Ctrl Delay			51.5									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary 11: Lakeside Dr & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  					 		
Traffic Volume (veh/h)	69	1776	115	254	719	225	133	186	280	435	128	42
Future Volume (veh/h)	69	1776	115	254	719	225	133	186	280	435	128	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	74	1910	0	273	773	0	143	200	227	468	138	34
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	661	2022		299	984		390	305	259	528	440	373
Arrive On Green	0.49	0.53	0.00	0.17	0.19	0.00	0.08	0.16	0.16	0.15	0.24	0.24
Sat Flow, veh/h	1781	5274	0	1781	5106	1585	1781	1870	1585	3456	1870	1585
Grp Volume(v), veh/h	74	1910	0	273	773	0	143	200	227	468	138	34
Grp Sat Flow(s),veh/h/ln	1781	1702	0	1781	1702	1585	1781	1870	1585	1728	1870	1585
Q Serve(g_s), s	3.3	52.8	0.0	22.6	21.6	0.0	9.9	15.0	21.0	19.9	9.1	1.1
Cycle Q Clear(g_c), s	3.3	52.8	0.0	22.6	21.6	0.0	9.9	15.0	21.0	19.9	9.1	1.1
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	661	2022		299	984		390	305	259	528	440	373
V/C Ratio(X)	0.11	0.94		0.91	0.79		0.37	0.65	0.88	0.89	0.31	0.09
Avail Cap(c_a), veh/h	661	2022		445	1787		489	443	375	657	542	460
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.26	0.26	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	33.9	0.0	61.3	57.6	0.0	46.6	58.8	61.3	62.3	47.3	8.5
Incr Delay (d2), s/veh	0.0	3.5	0.0	17.1	1.4	0.0	0.6	2.4	14.9	11.9	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.4	23.3	0.0	17.0	14.2	0.0	7.9	11.7	14.4	14.7	7.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	37.4	0.0	78.5	59.0	0.0	47.2	61.2	76.2	74.2	47.7	8.6
LnGrp LOS	C	D		E	E		D	E	E	E	D	A
Approach Vol, veh/h		1984			1046			570			640	
Approach Delay, s/veh		36.9			64.1			63.7			65.0	
Approach LOS		D			E			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.4	29.0	29.7	63.9	16.6	39.8	60.2	33.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	28.5	35.5	37.5	30.5	20.5	43.5	15.5	52.5				
Max Q Clear Time (g_c+I1), s	21.9	23.0	24.6	54.8	11.9	11.1	5.3	23.6				
Green Ext Time (p_c), s	1.0	1.5	0.6	0.0	0.2	0.8	0.1	5.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			51.5									
HCM 6th LOS			D									





























## HCM 6th Signalized Intersection Summary

### 12: Plumas St & McCarran Blvd
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	1460	164	114	630	219	84	102	128	362	144	30
Future Volume (veh/h)	30	1460	164	114	630	219	84	102	128	362	144	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	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	33	1622	164	127	700	183	93	113	106	402	160	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	53	1787	179	152	2116	944	163	180	153	600	379	71
Arrive On Green	0.03	0.55	0.55	0.09	0.60	0.60	0.10	0.10	0.10	0.12	0.25	0.25
Sat Flow, veh/h	1781	3263	326	1781	3554	1585	1193	1870	1585	3456	1532	287
Grp Volume(v), veh/h	33	874	912	127	700	183	93	113	106	402	0	190
Grp Sat Flow(s),veh/h/ln	1781	1777	1812	1781	1777	1585	1193	1870	1585	1728	0	1819
Q Serve(g_s), s	2.7	65.8	68.7	10.5	14.9	7.9	11.5	8.7	9.7	15.2	0.0	13.2
Cycle Q Clear(g_c), s	2.7	65.8	68.7	10.5	14.9	7.9	11.5	8.7	9.7	15.2	0.0	13.2
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	53	973	992	152	2116	944	163	180	153	600	0	450
V/C Ratio(X)	0.62	0.90	0.92	0.84	0.33	0.19	0.57	0.63	0.69	0.67	0.00	0.42
Avail Cap(c_a), veh/h	162	973	992	412	2116	944	244	308	261	769	0	663
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	0.00	1.00
Uniform Delay (d), s/veh	71.9	30.2	30.9	67.6	15.3	13.9	66.4	65.2	65.7	50.7	0.0	47.5
Incr Delay (d2), s/veh	11.2	12.8	14.6	10.7	0.1	0.1	3.1	3.6	5.6	1.5	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	38.7	41.4	8.8	9.6	5.0	6.6	7.8	7.4	11.0	0.0	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.1	43.0	45.5	78.3	15.4	14.0	69.6	68.8	71.2	52.2	0.0	48.1
LnGrp LOS	F	D	D	E	B	B	E	E	E	D	A	D
Approach Vol, veh/h	1819				1010				312			
Approach Delay, s/veh	45.0				23.0				69.8			
Approach LOS	D				C				E			
Timer - Assigned Phs	1	2	3	4	6		7	8				
Phs Duration (G+Y+Rc), s	22.7	19.7	18.1	89.5	42.4		10.9	96.7				
Change Period (Y+Rc), s	4.5	* 5.3	* 5.3	7.4	* 5.3		6.4	* 7.4				
Max Green Setting (Gmax), s	25.5	* 25	* 35	42.6	* 55		13.6	* 64				
Max Q Clear Time (g_c+I1), s	17.2	13.5	12.5	70.7	15.2		4.7	16.9				
Green Ext Time (p_c), s	1.0	1.0	0.3	0.0	1.2		0.0	5.7				
Intersection Summary												
HCM 6th Ctrl Delay	42.1											
HCM 6th LOS	D											



























# HCM 6th Signalized Intersection Summary 13: McCarran Blvd & Caughlin Pkwy/Cashil Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 						 	  			  	
Traffic Volume (veh/h)	267	68	389	45	134	55	349	454	29	33	1022	307
Future Volume (veh/h)	267	68	389	45	134	55	349	454	29	33	1022	307
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	334	85	366	56	168	52	436	568	32	41	1278	347
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	593	457	388	72	210	178	478	2245	126	53	1389	377
Arrive On Green	0.17	0.24	0.24	0.04	0.11	0.11	0.14	0.45	0.45	0.03	0.35	0.35
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	3456	4948	277	1781	3996	1084
Grp Volume(v), veh/h	334	85	366	56	168	52	436	390	210	41	1089	536
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1728	1702	1821	1781	1702	1675
Q Serve(g_s), s	10.6	4.3	27.2	3.7	10.5	2.9	14.9	8.5	8.6	2.7	36.8	36.9
Cycle Q Clear(g_c), s	10.6	4.3	27.2	3.7	10.5	2.9	14.9	8.5	8.6	2.7	36.8	36.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.65
Lane Grp Cap(c), veh/h	593	457	388	72	210	178	478	1545	826	53	1183	582
V/C Ratio(X)	0.56	0.19	0.94	0.77	0.80	0.29	0.91	0.25	0.25	0.78	0.92	0.92
Avail Cap(c_a), veh/h	593	464	394	156	426	361	478	1545	826	94	1183	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	35.9	44.5	57.0	52.0	32.3	51.0	20.2	20.2	57.8	37.6	37.6
Incr Delay (d2), s/veh	1.2	0.2	31.2	15.9	7.0	0.9	21.7	0.4	0.7	21.6	12.9	22.3
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(95%),veh/ln	8.3	3.7	20.2	3.6	9.2	2.7	12.2	5.9	6.5	2.7	23.1	24.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.8	36.1	75.7	72.9	58.9	33.2	72.7	20.6	21.0	79.4	50.5	59.8
LnGrp LOS	D	D	E	E	E	C	E	C	C	E	D	E
Approach Vol, veh/h		785			276			1036			1666	
Approach Delay, s/veh		59.1			56.9			42.6			54.2	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	60.8	9.4	34.5	22.0	48.0	25.8	18.1				
Change Period (Y+Rc), s	5.7	* 6.3	4.5	* 5.2	5.4	6.3	* 5.2	* 4.7				
Max Green Setting (Gmax), s	6.3	* 52	10.5	* 30	16.6	41.7	* 14	* 27				
Max Q Clear Time (g_c+I1), s	4.7	10.6	5.7	29.2	16.9	38.9	12.6	12.5				
Green Ext Time (p_c), s	0.0	3.6	0.0	0.1	0.0	2.2	0.1	0.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			52.2									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary 14: McCarran Blvd & Caughlin Pkwy/Plumb Ln

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	67	37	63	35	139	60	690	25	309	1457	148
Future Volume (veh/h)	180	67	37	63	35	139	60	690	25	309	1457	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	209	78	33	73	41	122	70	802	27	359	1694	156
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	236	266	226	152	177	150	90	1012	34	1115	2284	210
Arrive On Green	0.10	0.14	0.14	0.05	0.09	0.09	0.05	0.20	0.20	0.32	0.48	0.48
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	5073	170	3456	4758	437
Grp Volume(v), veh/h	209	78	33	73	41	122	70	538	291	359	1211	639
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1702	1840	1728	1702	1792
Q Serve(g_s), s	9.7	4.5	2.2	4.7	2.4	9.1	4.7	18.0	18.1	9.4	34.4	34.6
Cycle Q Clear(g_c), s	9.7	4.5	2.2	4.7	2.4	9.1	4.7	18.0	18.1	9.4	34.4	34.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		0.24
Lane Grp Cap(c), veh/h	236	266	226	152	177	150	90	679	367	1115	1634	860
V/C Ratio(X)	0.88	0.29	0.15	0.48	0.23	0.81	0.78	0.79	0.79	0.32	0.74	0.74
Avail Cap(c_a), veh/h	261	313	265	231	287	243	131	930	503	1115	1634	860
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	51.7	46.1	45.1	53.7	50.3	53.3	56.3	45.7	45.7	30.7	25.2	25.2
Incr Delay (d2), s/veh	26.4	0.6	0.3	2.3	0.7	10.2	16.7	3.3	6.1	0.2	3.1	5.8
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(95%),veh/ln	12.6	3.9	1.6	4.0	2.1	7.3	4.4	12.1	13.3	6.8	19.4	21.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.1	46.7	45.4	56.0	50.9	63.4	73.1	49.0	51.7	30.9	28.3	31.0
LnGrp LOS	E	D	D	E	D	E	E	D	D	C	C	C
Approach Vol, veh/h	320			236			899			2209		
Approach Delay, s/veh	67.1			59.0			51.7			29.5		
Approach LOS	E			E			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	45.1	31.1	10.7	22.0	12.2	64.0	16.7	16.0				
Change Period (Y+Rc), s	6.4	* 7.2	4.5	4.9	6.2	6.4	4.9	* 4.6				
Max Green Setting (Gmax), s	33.4	* 33	11.5	20.1	8.8	57.6	13.5	* 18				
Max Q Clear Time (g_c+I1), s	11.4	20.1	6.7	6.5	6.7	36.6	11.7	11.1				
Green Ext Time (p_c), s	1.2	3.9	0.1	0.4	0.0	12.3	0.1	0.3				
Intersection Summary												
HCM 6th Ctrl Delay	40.1											
HCM 6th LOS	D											

# HCM 6th Signalized Intersection Summary 15: McCarran Blvd & Mayberry Dr

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	237	258	205	133	350	53	689	305	268	1445	95
Future Volume (veh/h)	170	237	258	205	133	350	53	689	305	268	1445	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	198	276	0	238	155	0	62	801	0	312	1680	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	334	302		245	302		80	1400		820	2425	
Arrive On Green	0.09	0.16	0.00	0.09	0.16	0.00	0.04	0.27	0.00	0.47	0.95	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	198	276	0	238	155	0	62	801	0	312	1680	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1702	1585	1728	1702	1585
Q Serve(g_s), s	11.2	17.4	0.0	11.2	9.1	0.0	4.1	16.2	0.0	6.9	5.8	0.0
Cycle Q Clear(g_c), s	11.2	17.4	0.0	11.2	9.1	0.0	4.1	16.2	0.0	6.9	5.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	334	302		245	302		80	1400		820	2425	
V/C Ratio(X)	0.59	0.91		0.97	0.51		0.78	0.57		0.38	0.69	
Avail Cap(c_a), veh/h	334	302		245	302		132	1400		950	2425	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.74	0.74	0.00
Uniform Delay (d), s/veh	37.8	49.5	0.0	42.5	46.0	0.0	56.7	37.5	0.0	25.9	1.7	0.0
Incr Delay (d2), s/veh	2.8	30.3	0.0	49.9	1.5	0.0	14.8	1.7	0.0	0.2	1.2	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(95%),veh/ln	8.8	15.9	0.0	8.7	7.7	0.0	3.8	10.9	0.0	4.5	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.6	79.8	0.0	92.4	47.4	0.0	71.5	39.2	0.0	26.1	2.9	0.0
LnGrp LOS	D	E		F	D		E	D		C	A	
Approach Vol, veh/h		474			393			863			1992	
Approach Delay, s/veh		63.4			74.7			41.5			6.6	
Approach LOS		E			E			D			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	35.5	40.0	16.0	25.1	11.5	64.0	16.0	25.1				
Change Period (Y+Rc), s	7.0	* 7.1	* 4.8	* 5.7	6.1	7.0	* 4.7	5.7				
Max Green Setting (Gmax), s	33.0	* 33	* 11	* 19	8.9	57.0	* 11	19.3				
Max Q Clear Time (g_c+I1), s	8.9	18.2	13.2	19.4	6.1	7.8	13.2	11.1				
Green Ext Time (p_c), s	1.0	4.3	0.0	0.0	0.0	16.8	0.0	0.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			29.1									
HCM 6th LOS			C									

# HCM 6th Signalized Intersection Summary

## 16: McCarran Blvd & 4th St

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	110	164	179	89	56	84	931	199	101	1438	239
Future Volume (veh/h)	174	110	164	179	89	56	84	931	199	101	1438	239
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	198	125	0	203	101	48	95	1058	0	115	1634	206
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	272	161		265	139	118	119	1438		175	1651	512
Arrive On Green	0.08	0.09	0.00	0.08	0.07	0.07	0.07	0.28	0.00	0.10	0.32	0.32
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	198	125	0	203	101	48	95	1058	0	115	1634	206
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	6.7	7.9	0.0	6.9	6.3	3.5	6.3	22.5	0.0	7.5	38.2	4.2
Cycle Q Clear(g_c), s	6.7	7.9	0.0	6.9	6.3	3.5	6.3	22.5	0.0	7.5	38.2	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	272	161		265	139	118	119	1438		175	1651	512
V/C Ratio(X)	0.73	0.77		0.77	0.73	0.41	0.80	0.74		0.66	0.99	0.40
Avail Cap(c_a), veh/h	317	503		432	558	473	163	1438		235	1651	512
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.87	0.87	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.0	53.7	0.0	54.3	54.3	53.0	55.2	39.1	0.0	52.1	40.4	3.8
Incr Delay (d2), s/veh	7.0	7.7	0.0	4.6	7.0	2.2	15.5	3.0	0.0	4.1	19.8	2.3
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(95%),veh/ln	5.6	7.1	0.0	5.6	5.7	2.6	5.9	14.0	0.0	6.2	25.0	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.0	61.4	0.0	58.9	61.3	55.2	70.7	42.0	0.0	56.3	60.2	6.1
LnGrp LOS	E	E		E	E	E	E	D		E	E	A
Approach Vol, veh/h	323			352			1153			1955		
Approach Delay, s/veh	61.1			59.1			44.4			54.3		
Approach LOS	E			E			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	40.0	14.2	16.1	13.0	46.0	15.1	15.1				
Change Period (Y+Rc), s	7.2	* 6.2	5.0	5.7	5.0	7.2	5.7	* 6.2				
Max Green Setting (Gmax), s	15.8	* 34	15.0	32.3	11.0	38.8	11.0	* 36				
Max Q Clear Time (g_c+I1), s	9.5	24.5	8.9	9.9	8.3	40.2	8.7	8.3				
Green Ext Time (p_c), s	0.1	4.4	0.3	0.5	0.0	0.0	0.1	0.6				
Intersection Summary												
HCM 6th Ctrl Delay	52.3											
HCM 6th LOS	D											

# HCM 6th Signalized Intersection Summary 17: McCarran Blvd & Mae Anne Ave/Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	563	44	455	64	30	12	272	704	56	35	1479	325
Future Volume (veh/h)	563	44	455	64	30	12	272	704	56	35	1479	325
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	619	48	0	70	33	0	299	774	0	38	1625	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	674	94		644	93		358	1940		75	1651	
Arrive On Green	0.20	0.05	0.00	0.19	0.05	0.00	0.10	0.38	0.00	0.08	0.65	0.00
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	3456	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	619	48	0	70	33	0	299	774	0	38	1625	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1728	1702	1585	1781	1702	1585
Q Serve(g_s), s	21.1	3.0	0.0	2.0	2.0	0.0	10.2	13.3	0.0	2.4	37.1	0.0
Cycle Q Clear(g_c), s	21.1	3.0	0.0	2.0	2.0	0.0	10.2	13.3	0.0	2.4	37.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	674	94		644	93		358	1940		75	1651	
V/C Ratio(X)	0.92	0.51		0.11	0.36		0.84	0.40		0.51	0.98	
Avail Cap(c_a), veh/h	697	408		644	312		415	1940		205	1651	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.40	0.40	0.00
Uniform Delay (d), s/veh	47.4	55.6	0.0	40.5	55.2	0.0	52.8	27.2	0.0	53.8	20.9	0.0
Incr Delay (d2), s/veh	17.0	4.3	0.0	0.1	2.3	0.0	12.4	0.6	0.0	2.1	10.8	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(95%),veh/ln	15.8	2.7	0.0	1.6	1.9	0.0	8.5	9.0	0.0	2.0	10.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	59.9	0.0	40.6	57.4	0.0	65.2	27.8	0.0	55.9	31.7	0.0
LnGrp LOS	E	E		D	E		E	C		E	C	
Approach Vol, veh/h		667			103			1073			1663	
Approach Delay, s/veh		64.0			46.0			38.2			32.3	
Approach LOS		E			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.2	52.8	27.4	11.8	18.0	46.0	28.2	11.0				
Change Period (Y+Rc), s	6.2	* 7.2	5.0	* 5.8	5.6	7.2	* 4.8	5.0				
Max Green Setting (Gmax), s	13.8	* 40	17.5	* 26	14.4	38.8	* 24	20.0				
Max Q Clear Time (g_c+I1), s	4.4	15.3	4.0	5.0	12.2	39.1	23.1	4.0				
Green Ext Time (p_c), s	0.0	4.9	0.1	0.2	0.2	0.0	0.3	0.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			40.5									
HCM 6th LOS			D									































# HCM 6th Signalized Intersection Summary

## 18: McCarran Blvd & 7th St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	375	197	408	258	214	105	90	935	150	120	1297	259
Future Volume (veh/h)	375	197	408	258	214	105	90	935	150	120	1297	259
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	421	221	345	290	240	89	101	1051	127	135	1457	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	763	411	349	386	432	366	157	1478	459	194	1489	
Arrive On Green	0.12	0.22	0.22	0.13	0.23	0.23	0.05	0.29	0.29	0.06	0.29	0.00
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	421	221	345	290	240	89	101	1051	127	135	1457	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	11.0	12.5	17.2	15.2	13.6	5.5	3.4	22.1	7.4	4.6	33.9	0.0
Cycle Q Clear(g_c), s	11.0	12.5	17.2	15.2	13.6	5.5	3.4	22.1	7.4	4.6	33.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	763	411	349	386	432	366	157	1478	459	194	1489	
V/C Ratio(X)	0.55	0.54	0.99	0.75	0.56	0.24	0.64	0.71	0.28	0.70	0.98	
Avail Cap(c_a), veh/h	945	411	349	386	432	366	587	1770	549	403	1489	
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	0.82	0.82	0.82	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.9	41.4	20.5	31.4	40.7	37.6	56.3	38.1	32.9	55.6	42.1	0.0
Incr Delay (d2), s/veh	0.6	5.0	45.6	8.0	1.6	0.3	3.6	0.9	0.3	4.5	18.7	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(95%),veh/ln	8.1	10.4	16.0	11.7	10.5	3.9	2.8	13.3	5.2	3.7	22.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.5	46.4	66.1	39.4	42.3	37.9	59.9	39.0	33.2	60.1	60.8	0.0
LnGrp LOS	C	D	E	D	D	D	E	D	C	E	E	
Approach Vol, veh/h		987			619			1279			1592	
Approach Delay, s/veh		46.9			40.3			40.1			60.8	
Approach LOS		D			D			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.7	41.1	20.0	32.0	11.9	42.0	18.7	33.3				
Change Period (Y+Rc), s	6.0	6.4	4.6	5.6	6.4	* 7	* 4.7	* 5.6				
Max Green Setting (Gmax), s	14.0	41.6	15.4	26.4	20.4	* 35	* 20	* 22				
Max Q Clear Time (g_c+l1), s	6.6	24.1	17.2	19.2	5.4	35.9	13.0	15.6				
Green Ext Time (p_c), s	0.2	6.6	0.0	1.5	0.2	0.0	0.9	0.8				
Intersection Summary												
HCM 6th Ctrl Delay			49.0									
HCM 6th LOS			D									



























# HCM 6th Signalized Intersection Summary 19: Clear Acre Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  			 			 	
Traffic Volume (veh/h)	293	968	105	120	1275	102	86	202	184	168	393	555
Future Volume (veh/h)	293	968	105	120	1275	102	86	202	184	168	393	555
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	349	1152	113	143	1518	91	102	240	0	200	468	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	400	1611	158	196	1743	541	127	318		225	534	
Arrive On Green	0.12	0.34	0.34	0.11	0.34	0.34	0.07	0.09	0.00	0.13	0.15	0.00
Sat Flow, veh/h	3456	4728	463	1781	5106	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	349	829	436	143	1518	91	102	240	0	200	468	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1787	1781	1702	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	14.9	31.9	31.9	11.7	41.8	6.0	8.5	9.9	0.0	16.6	19.3	0.0
Cycle Q Clear(g_c), s	14.9	31.9	31.9	11.7	41.8	6.0	8.5	9.9	0.0	16.6	19.3	0.0
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	400	1160	609	196	1743	541	127	318		225	534	
V/C Ratio(X)	0.87	0.72	0.72	0.73	0.87	0.17	0.81	0.75		0.89	0.88	
Avail Cap(c_a), veh/h	486	1160	609	252	1743	541	329	561		355	614	
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.2	43.1	43.1	64.6	46.3	34.5	68.6	66.7	0.0	64.5	62.4	0.0
Incr Delay (d2), s/veh	13.7	3.8	7.1	7.6	6.3	0.7	11.3	3.6	0.0	15.3	12.3	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(95%),veh/ln	11.6	19.8	21.3	9.5	25.2	4.3	7.6	8.2	0.0	13.2	14.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.0	46.9	50.2	72.2	52.6	35.2	79.9	70.3	0.0	79.8	74.7	0.0
LnGrp LOS	E	D	D	E	D	D	E	E		E	E	
Approach Vol, veh/h	1614			1752			342			668		
Approach Delay, s/veh	54.7			53.3			73.2			76.2		
Approach LOS	D			D			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.1	19.5	23.3	58.0	16.0	28.6	23.3	58.0				
Change Period (Y+Rc), s	6.1	* 6.1	6.8	* 6.9	* 5.3	6.1	5.9	6.8				
Max Green Setting (Gmax), s	29.9	* 24	21.2	* 51	* 28	25.9	21.1	51.2				
Max Q Clear Time (g_c+I1), s	18.6	11.9	13.7	33.9	10.5	21.3	16.9	43.8				
Green Ext Time (p_c), s	0.4	1.0	0.2	7.4	0.2	1.2	0.5	5.2				
Intersection Summary												
HCM 6th Ctrl Delay	58.9											
HCM 6th LOS	E											



























# HCM 6th Signalized Intersection Summary

## 1: El Rancho Dr & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	995	56	32	1161	62	169	343	74	33	109	104
Future Volume (veh/h)	166	995	56	32	1161	62	169	343	74	33	109	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	182	1093	46	35	1276	0	186	377	72	36	120	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	1391	620	306	1614		350	394	75	47	150	
Arrive On Green	0.11	0.39	0.39	0.17	0.45	0.00	0.20	0.26	0.26	0.03	0.08	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1526	292	1781	1870	1585
Grp Volume(v), veh/h	182	1093	46	35	1276	0	186	0	449	36	120	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1818	1781	1870	1585
Q Serve(g_s), s	15.1	40.6	2.7	2.5	45.9	0.0	14.1	0.0	36.5	3.0	9.5	0.0
Cycle Q Clear(g_c), s	15.1	40.6	2.7	2.5	45.9	0.0	14.1	0.0	36.5	3.0	9.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	204	1391	620	306	1614		350	0	469	47	150	
V/C Ratio(X)	0.89	0.79	0.07	0.11	0.79		0.53	0.00	0.96	0.77	0.80	
Avail Cap(c_a), veh/h	233	1391	620	306	1614		350	0	476	186	418	
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	0.61	0.61	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.5	40.1	28.6	52.5	34.9	0.0	54.1	0.0	54.8	72.6	67.8	0.0
Incr Delay (d2), s/veh	29.5	4.5	0.2	0.1	2.5	0.0	1.5	0.0	30.2	23.2	9.5	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(95%),veh/ln	13.2	25.0	1.9	2.0	25.3	0.0	10.7	0.0	28.1	3.0	8.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.9	44.7	28.8	52.6	37.4	0.0	55.6	0.0	85.0	95.8	77.4	0.0
LnGrp LOS	F	D	C	D	D		E	A	F	F	E	
Approach Vol, veh/h		1321			1311			635			156	
Approach Delay, s/veh		51.0			37.8			76.4			81.6	
Approach LOS		D			D			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	43.4	32.3	65.0	34.2	18.5	22.6	74.7				
Change Period (Y+Rc), s	* 5.3	* 4.7	6.6	* 6.3	4.7	* 6.5	5.4	6.6				
Max Green Setting (Gmax), s	* 16	* 39	14.3	* 59	20.5	* 34	19.6	53.4				
Max Q Clear Time (g_c+I1), s	5.0	38.5	4.5	42.6	16.1	11.5	17.1	47.9				
Green Ext Time (p_c), s	0.0	0.2	0.0	6.7	0.2	0.5	0.1	3.6				
Intersection Summary												
HCM 6th Ctrl Delay			52.0									
HCM 6th LOS			D									






















## HCM 6th Signalized Intersection Summary

### 2: Sullivan Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	37	1560	38	11	1181	269	46	95	36	69	49	272
Future Volume (veh/h)	37	1560	38	11	1181	269	46	95	36	69	49	272
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	41	1733	31	12	1312	222	51	106	30	66	70	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	479	2289	1021	19	1388	619	59	123	35	93	98	
Arrive On Green	0.54	1.00	1.00	0.01	0.39	0.39	0.12	0.12	0.12	0.05	0.05	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	489	1017	288	1781	1870	1585
Grp Volume(v), veh/h	41	1733	31	12	1312	222	187	0	0	66	70	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1794	0	0	1781	1870	1585
Q Serve(g_s), s	1.7	0.0	0.0	1.0	53.5	14.9	15.3	0.0	0.0	5.5	5.5	0.0
Cycle Q Clear(g_c), s	1.7	0.0	0.0	1.0	53.5	14.9	15.3	0.0	0.0	5.5	5.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.27		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	479	2289	1021	19	1388	619	216	0	0	93	98	
V/C Ratio(X)	0.09	0.76	0.03	0.64	0.95	0.36	0.86	0.00	0.00	0.71	0.72	
Avail Cap(c_a), veh/h	479	2289	1021	166	1414	631	340	0	0	219	229	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.69	0.71	0.71	0.71	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.7	0.0	0.0	73.9	44.2	32.4	64.8	0.0	0.0	70.0	70.0	0.0
Incr Delay (d2), s/veh	0.1	1.7	0.0	23.2	10.0	0.2	12.9	0.0	0.0	9.6	9.4	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(95%),veh/ln	1.3	1.0	0.0	1.0	31.5	9.0	12.5	0.0	0.0	4.9	5.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	1.7	0.0	97.1	54.2	32.6	77.7	0.0	0.0	79.5	79.4	0.0
LnGrp LOS	C	A	A	F	D	C	E	A	A	E	E	
Approach Vol, veh/h		1805			1546			187			136	
Approach Delay, s/veh		2.2			51.4			77.7			79.5	
Approach LOS		A			D			E			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.7	7.6	103.3		14.4	47.0	63.9				
Change Period (Y+Rc), s		6.6	6.0	* 6.7		6.6	6.7	* 5.3				
Max Green Setting (Gmax), s		28.4	14.0	* 64		18.4	18.3	* 60				
Max Q Clear Time (g_c+I1), s		17.3	3.0	2.0		7.5	3.7	55.5				
Green Ext Time (p_c), s		0.7	0.0	21.7		0.3	0.0	3.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				29.6								
HCM 6th LOS				C								
























# HCM 6th Signalized Intersection Summary

## 3: Rock Blvd & McCarran Blvd
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1602	63	96	1392	0	168	4	312	3	2	2
Future Volume (veh/h)	0	1602	63	96	1392	0	168	4	312	3	2	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1841	54	110	1600	0	193	5	359	3	2	2
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1	2046	913	135	2459	0	235	5	374	34	23	9
Arrive On Green	0.00	0.77	0.77	0.08	0.69	0.00	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1781	3554	1585	1781	3647	0	796	21	1585	0	96	38
Grp Volume(v), veh/h	0	1841	54	110	1600	0	198	0	359	7	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	0	817	0	1585	134	0	0
Q Serve(g_s), s	0.0	58.6	1.3	9.1	37.8	0.0	0.0	0.0	33.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	58.6	1.3	9.1	37.8	0.0	35.4	0.0	33.6	35.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	0.97		1.00	0.43		0.29
Lane Grp Cap(c), veh/h	1	2046	913	135	2459	0	240	0	374	66	0	0
V/C Ratio(X)	0.00	0.90	0.06	0.82	0.65	0.00	0.82	0.00	0.96	0.11	0.00	0.00
Avail Cap(c_a), veh/h	222	2046	913	343	2459	0	240	0	374	66	0	0
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.52	0.52	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	14.3	7.6	68.3	12.9	0.0	57.8	0.0	56.6	47.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.8	0.1	11.3	0.6	0.0	20.3	0.0	36.0	0.7	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(95%),veh/ln	0.0	20.7	0.8	8.0	19.8	0.0	13.9	0.0	23.6	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.1	7.7	79.6	13.6	0.0	78.1	0.0	92.6	48.2	0.0	0.0
LnGrp LOS	A	B	A	E	B	A	E	A	F	D	A	A
Approach Vol, veh/h		1895			1710			557			7	
Approach Delay, s/veh		17.8			17.8			87.4			48.2	
Approach LOS		B			B			F			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		40.4	17.4	92.2		40.4	0.0	109.6				
Change Period (Y+Rc), s		* 5	* 6.1	5.8		* 5	6.3	5.8				
Max Green Setting (Gmax), s		* 35	* 29	69.2		* 35	18.7	79.2				
Max Q Clear Time (g_c+I1), s		37.4	11.1	60.6		37.4	0.0	39.8				
Green Ext Time (p_c), s		0.0	0.2	6.9		0.0	0.0	16.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			27.2									
HCM 6th LOS			C									

# HCM 6th Signalized Intersection Summary

## 4: McCarran Blvd & E Prater Way

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	644	187	152	423	250	299	1138	349	233	495	116
Future Volume (veh/h)	226	644	187	152	423	250	299	1138	349	233	495	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	251	716	0	169	470	0	332	1264	0	259	550	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	834		234	716		388	1586		314	1509	
Arrive On Green	0.12	0.23	0.00	0.09	0.20	0.00	0.11	0.45	0.00	0.09	0.42	0.00
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	251	716	0	169	470	0	332	1264	0	259	550	0
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	17.4	30.9	0.0	11.9	19.5	0.0	15.1	48.9	0.0	11.8	16.9	0.0
Cycle Q Clear(g_c), s	17.4	30.9	0.0	11.9	19.5	0.0	15.1	48.9	0.0	11.8	16.9	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	338	834		234	716		388	1586		314	1509	
V/C Ratio(X)	0.74	0.86		0.72	0.66		0.85	0.80		0.83	0.36	
Avail Cap(c_a), veh/h	391	1117		346	1108		626	1586		626	1509	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.0	58.7	0.0	47.2	58.8	0.0	69.7	38.1	0.0	71.5	31.3	0.0
Incr Delay (d2), s/veh	6.3	5.3	0.0	4.2	1.0	0.0	6.5	4.3	0.0	5.5	0.7	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(95%),veh/ln	13.1	20.8	0.0	9.4	13.8	0.0	11.3	29.4	0.0	9.3	11.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.3	63.9	0.0	51.4	59.8	0.0	76.3	42.3	0.0	77.0	32.0	0.0
LnGrp LOS	D	E		D	E		E	D		E	C	
Approach Vol, veh/h		967			639			1596			809	
Approach Delay, s/veh		60.1			57.6			49.4			46.4	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.5	76.9	19.9	42.7	24.0	73.4	25.2	37.3				
Change Period (Y+Rc), s	6.0	5.5	* 5.7	* 5.1	6.0	5.5	5.5	5.1				
Max Green Setting (Gmax), s	29.0	34.5	* 24	* 50	29.0	34.5	24.5	49.9				
Max Q Clear Time (g_c+I1), s	13.8	50.9	13.9	32.9	17.1	18.9	19.4	21.5				
Green Ext Time (p_c), s	0.7	0.0	0.3	4.7	0.9	3.1	0.3	3.2				
Intersection Summary												
HCM 6th Ctrl Delay			52.7									
HCM 6th LOS			D									
























# HCM 6th Signalized Intersection Summary 5: McCarran Blvd & Nichols Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	71	47	299	58	53	101	1769	151	98	1159	79
Future Volume (veh/h)	124	71	47	299	58	53	101	1769	151	98	1159	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	133	76	46	366	0	57	109	1902	146	105	1246	76
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	99	60	430	0	191	439	2783	213	125	1984	121
Arrive On Green	0.09	0.09	0.09	0.12	0.00	0.12	0.25	0.58	0.58	0.07	0.40	0.40
Sat Flow, veh/h	1781	1091	660	3563	0	1585	1781	4838	370	1781	4920	300
Grp Volume(v), veh/h	133	0	122	366	0	57	109	1336	712	105	862	460
Grp Sat Flow(s),veh/h/ln	1781	0	1751	1781	0	1585	1781	1702	1804	1781	1702	1816
Q Serve(g_s), s	11.7	0.0	10.9	16.1	0.0	5.2	7.9	43.9	44.3	9.3	32.4	32.4
Cycle Q Clear(g_c), s	11.7	0.0	10.9	16.1	0.0	5.2	7.9	43.9	44.3	9.3	32.4	32.4
Prop In Lane	1.00		0.38	1.00		1.00	1.00		0.21	1.00		0.17
Lane Grp Cap(c), veh/h	162	0	159	430	0	191	439	1958	1038	125	1372	732
V/C Ratio(X)	0.82	0.00	0.77	0.85	0.00	0.30	0.25	0.68	0.69	0.84	0.63	0.63
Avail Cap(c_a), veh/h	286	0	281	661	0	294	439	1958	1038	155	1372	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
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	71.4	0.0	71.0	68.9	0.0	64.1	48.4	23.8	23.8	73.5	38.2	38.2
Incr Delay (d2), s/veh	9.8	0.0	7.4	6.5	0.0	0.9	0.3	1.9	3.7	26.9	2.2	4.1
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(95%),veh/ln	9.8	0.0	9.0	12.4	0.0	0.1	6.4	24.5	26.6	8.9	19.9	21.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.2	0.0	78.5	75.4	0.0	65.0	48.7	25.7	27.5	100.3	40.4	42.2
LnGrp LOS	F	A	E	E	A	E	D	C	C	F	D	D
Approach Vol, veh/h		255			423			2157			1427	
Approach Delay, s/veh		79.9			74.0			27.5			45.4	
Approach LOS		E			E			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.4	98.1		24.6	45.5	70.0		19.9				
Change Period (Y+Rc), s	6.1	* 6.1		* 5.3	6.1	5.5		5.3				
Max Green Setting (Gmax), s	13.9	* 69		* 30	17.9	64.5		25.7				
Max Q Clear Time (g_c+I1), s	11.3	46.3		18.1	9.9	34.4		13.7				
Green Ext Time (p_c), s	0.0	15.0		1.2	0.1	10.2		0.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				41.2								
HCM 6th LOS				D								


























# HCM 6th Signalized Intersection Summary

## 6: McCarran Blvd & E Greg St
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	242	32	248	254	279	121	1003	455	112	772	109
Future Volume (veh/h)	239	242	32	248	254	279	121	1003	455	112	772	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	260	263	32	270	276	0	132	1090	0	122	839	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	5	5	5	5	5	5
Cap, veh/h	525	334	40	516	351		217	1333		580	2371	
Arrive On Green	0.15	0.10	0.10	0.15	0.10	0.00	0.13	0.27	0.00	0.33	0.48	0.00
Sat Flow, veh/h	3456	3193	385	3456	3554	1585	1739	4985	1547	1739	5149	0
Grp Volume(v), veh/h	260	145	150	270	276	0	132	1090	0	122	839	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1801	1728	1777	1585	1739	1662	1547	1739	1662	0
Q Serve(g_s), s	11.0	12.7	13.0	11.5	12.1	0.0	11.5	32.8	0.0	8.0	17.0	0.0
Cycle Q Clear(g_c), s	11.0	12.7	13.0	11.5	12.1	0.0	11.5	32.8	0.0	8.0	17.0	0.0
Prop In Lane	1.00		0.21	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	525	186	188	516	351		217	1333		580	2371	
V/C Ratio(X)	0.50	0.78	0.80	0.52	0.79		0.61	0.82		0.21	0.35	
Avail Cap(c_a), veh/h	525	531	538	516	817		239	1932		580	2371	
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	62.2	69.9	70.0	62.8	70.5	0.0	66.3	55.0	0.0	38.2	26.4	0.0
Incr Delay (d2), s/veh	3.3	7.0	7.5	3.8	3.9	0.0	3.7	5.7	0.0	0.2	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(95%),veh/ln	8.8	10.2	10.5	9.1	9.6	0.0	9.0	20.4	0.0	6.2	10.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.5	76.9	77.5	66.6	74.4	0.0	70.0	60.6	0.0	38.4	26.5	0.0
LnGrp LOS	E	E	E	E	E		E	E		D	C	
Approach Vol, veh/h		555			546			1222			961	
Approach Delay, s/veh		71.7			70.5			61.6			28.0	
Approach LOS		E			E			E			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	59.7	48.8	29.6	21.9	26.0	82.5	30.0	21.5				
Change Period (Y+Rc), s	* 6.4	6.0	* 5.7	* 5.2	* 6	6.4	* 5.7	* 5.7				
Max Green Setting (Gmax), s	* 14	62.0	* 13	* 48	* 22	53.6	* 24	* 37				
Max Q Clear Time (g_c+I1), s	10.0	34.8	13.5	15.0	13.5	19.0	13.0	14.1				
Green Ext Time (p_c), s	0.1	8.0	0.0	1.7	0.2	6.1	0.7	1.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			55.0									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary

## 7: McCarran Blvd & Mira Loma Dr

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	322	18	376	207	189	88	878	932	421	643	74
Future Volume (veh/h)	51	322	18	376	207	189	88	878	932	421	643	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	61	388	20	453	249	0	106	1058	848	507	775	67
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	79	492	25	677	562		424	1547	783	551	1109	344
Arrive On Green	0.04	0.14	0.14	0.20	0.30	0.00	0.24	0.31	0.31	0.16	0.22	0.22
Sat Flow, veh/h	1781	3439	177	3456	1870	1585	1739	4985	1547	3374	4985	1547
Grp Volume(v), veh/h	61	200	208	453	249	0	106	1058	848	507	775	67
Grp Sat Flow(s),veh/h/ln	1781	1777	1839	1728	1870	1585	1739	1662	1547	1687	1662	1547
Q Serve(g_s), s	4.1	13.0	13.1	14.6	12.9	0.0	5.9	22.3	25.6	17.8	17.2	3.5
Cycle Q Clear(g_c), s	4.1	13.0	13.1	14.6	12.9	0.0	5.9	22.3	25.6	17.8	17.2	3.5
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	79	254	263	677	562		424	1547	783	551	1109	344
V/C Ratio(X)	0.77	0.79	0.79	0.67	0.44		0.25	0.68	1.08	0.92	0.70	0.19
Avail Cap(c_a), veh/h	245	441	457	677	574		424	1547	783	551	1109	344
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	49.6	49.7	44.7	33.9	0.0	36.6	36.2	9.5	49.4	42.9	25.9
Incr Delay (d2), s/veh	14.5	5.3	5.3	5.2	0.6	0.0	0.3	2.5	57.0	20.8	3.7	1.3
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(95%),veh/ln	3.9	10.2	10.6	11.0	10.0	0.0	4.5	14.0	27.2	13.7	11.6	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.2	55.0	55.0	49.9	34.4	0.0	36.9	38.7	66.4	70.3	46.6	27.2
LnGrp LOS	E	D	D	D	C		D	D	F	E	D	C
Approach Vol, veh/h		469			702			2012			1349	
Approach Delay, s/veh		57.1			44.4			50.3			54.5	
Approach LOS		E			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	43.9	28.7	22.4	35.9	33.0	9.8	41.2				
Change Period (Y+Rc), s	5.4	6.7	* 5.2	* 5.2	6.7	* 6.3	4.5	* 5.2				
Max Green Setting (Gmax), s	19.6	25.3	* 24	* 30	18.2	* 27	16.5	* 37				
Max Q Clear Time (g_c+I1), s	19.8	27.6	16.6	15.1	7.9	19.2	6.1	14.9				
Green Ext Time (p_c), s	0.0	0.0	1.0	2.0	0.2	3.0	0.1	1.4				
Intersection Summary												
HCM 6th Ctrl Delay				51.4								
HCM 6th LOS				D								

# HCM 6th Signalized Intersection Summary 8: Longley Ln & McCarran Blvd

































												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	213	1019	60	634	631	64	189	638	1320	139	499	210
Future Volume (veh/h)	213	1019	60	634	631	64	189	638	1320	139	499	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	234	1120	0	697	693	0	208	701	0	153	548	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	291	1140		773	1408		269	749		221	633	
Arrive On Green	0.09	0.33	0.00	0.16	0.41	0.00	0.15	0.21	0.00	0.12	0.18	0.00
Sat Flow, veh/h	3374	3561	0	4904	3469	1547	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	234	1120	0	697	693	0	208	701	0	153	548	0
Grp Sat Flow(s),veh/h/ln	1687	1735	0	1635	1735	1547	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	10.2	48.0	0.0	20.9	22.2	0.0	16.8	29.1	0.0	12.3	22.5	0.0
Cycle Q Clear(g_c), s	10.2	48.0	0.0	20.9	22.2	0.0	16.8	29.1	0.0	12.3	22.5	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	291	1140		773	1408		269	749		221	633	
V/C Ratio(X)	0.80	0.98		0.90	0.49		0.77	0.94		0.69	0.87	
Avail Cap(c_a), veh/h	814	1140		824	1408		269	765		221	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	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.3	49.9	0.0	62.0	33.1	0.0	61.2	58.2	0.0	63.0	59.9	0.0
Incr Delay (d2), s/veh	5.2	22.4	0.0	12.7	1.2	0.0	13.2	18.5	0.0	16.4	8.2	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(95%),veh/ln	8.0	31.5	0.0	14.4	14.3	0.0	13.2	20.9	0.0	10.7	16.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.5	72.3	0.0	74.7	34.3	0.0	74.4	76.7	0.0	79.4	68.1	0.0
LnGrp LOS	E	E		E	C		E	E		E	E	
Approach Vol, veh/h	1354				1390				909			
Approach Delay, s/veh	72.3				54.6				76.2			
Approach LOS	E				D				E			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.0	38.3	30.3	56.0	29.3	33.0	18.7	67.6				
Change Period (Y+Rc), s	5.4	6.7	6.7	* 6.7	6.7	* 6.3	5.8	6.7				
Max Green Setting (Gmax), s	18.6	32.3	25.2	* 49	17.2	* 34	36.2	38.3				
Max Q Clear Time (g_c+I1), s	14.3	31.1	22.9	50.0	18.8	24.5	12.2	24.2				
Green Ext Time (p_c), s	0.1	0.5	0.7	0.0	0.0	2.2	0.7	3.6				
Intersection Summary												
HCM 6th Ctrl Delay	67.2											
HCM 6th LOS	E											

# HCM 6th Signalized Intersection Summary

## 9: S Virginia St & McCarran Blvd





























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	443	796	287	181	828	688	266	1279	255	564	994	101
Future Volume (veh/h)	443	796	287	181	828	688	266	1279	255	564	994	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811	1811	1811	1811	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	476	856	0	195	790	625	286	1375	0	606	1069	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	6	6	6	2	2	2	2	2	2
Cap, veh/h	537	1403		219	908	770	339	1703		815	1190	
Arrive On Green	0.16	0.28	0.00	0.13	0.25	0.25	0.10	0.26	0.00	0.16	0.33	0.00
Sat Flow, veh/h	3346	4944	1535	1725	3622	3070	3456	6696	0	5023	3554	1585
Grp Volume(v), veh/h	476	856	0	195	790	625	286	1375	0	606	1069	0
Grp Sat Flow(s),veh/h/ln	1673	1648	1535	1725	1811	1535	1728	1609	0	1674	1777	1585
Q Serve(g_s), s	20.9	22.5	0.0	16.7	31.4	19.3	12.2	30.0	0.0	17.2	42.9	0.0
Cycle Q Clear(g_c), s	20.9	22.5	0.0	16.7	31.4	19.3	12.2	30.0	0.0	17.2	42.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	537	1403		219	908	770	339	1703		815	1190	
V/C Ratio(X)	0.89	0.61		0.89	0.87	0.81	0.84	0.81		0.74	0.90	
Avail Cap(c_a), veh/h	705	1403		363	983	833	475	1703		815	1190	
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)	0.85	0.85	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	61.6	46.5	0.0	64.4	53.9	23.8	66.5	51.6	0.0	59.9	47.5	0.0
Incr Delay (d2), s/veh	9.3	0.7	0.0	14.0	8.1	5.8	9.5	4.2	0.0	3.7	10.8	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(95%),veh/ln	14.1	13.7	0.0	12.7	21.3	11.9	9.7	18.1	0.0	12.0	27.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.9	47.2	0.0	78.4	61.9	29.6	76.0	55.8	0.0	63.6	58.3	0.0
LnGrp LOS	E	D		E	E	C	E	E		E	E	
Approach Vol, veh/h		1332			1610			1661			1675	
Approach Delay, s/veh		55.7			51.4			59.3			60.2	
Approach LOS		E			D			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.6	46.0	24.5	48.9	20.1	56.5	29.5	43.9				
Change Period (Y+Rc), s	6.3	* 6.3	5.4	6.3	5.4	6.3	5.4	6.3				
Max Green Setting (Gmax), s	14.6	* 40	31.6	40.7	20.6	33.7	31.6	40.7				
Max Q Clear Time (g_c+I1), s	19.2	32.0	18.7	24.5	14.2	44.9	22.9	33.4				
Green Ext Time (p_c), s	0.0	4.9	0.4	5.0	0.5	0.0	1.2	4.3				
Intersection Summary												
HCM 6th Ctrl Delay			56.7									
HCM 6th LOS			E									

# HCM 6th Signalized Intersection Summary 10: Kietzke Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 		 	 	
Traffic Volume (veh/h)	235	914	588	98	1044	196	1110	261	65	326	65	300
Future Volume (veh/h)	235	914	588	98	1044	196	1110	261	65	326	65	300
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	261	1016	0	109	1160	0	1233	290	0	362	72	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	328	1740		133	1181		1235	368		995	142	
Arrive On Green	0.18	0.34	0.00	0.07	0.23	0.00	0.36	0.10	0.00	0.29	0.04	0.00
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	261	1016	0	109	1160	0	1233	290	0	362	72	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	21.0	24.6	0.0	9.0	33.9	0.0	53.5	11.9	0.0	12.5	3.0	0.0
Cycle Q Clear(g_c), s	21.0	24.6	0.0	9.0	33.9	0.0	53.5	11.9	0.0	12.5	3.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	328	1740		133	1181		1235	368		995	142	
V/C Ratio(X)	0.80	0.58		0.82	0.98		1.00	0.79		0.36	0.51	
Avail Cap(c_a), veh/h	328	1740		399	1181		1235	822		995	253	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.45	0.45	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.5	40.7	0.0	68.4	57.3	0.0	48.2	65.6	0.0	42.5	70.5	0.0
Incr Delay (d2), s/veh	18.0	0.5	0.0	5.7	13.8	0.0	25.3	3.8	0.0	0.2	2.8	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(95%),veh/ln	16.4	15.4	0.0	6.5	20.1	0.0	35.0	9.4	0.0	9.1	2.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.5	41.2	0.0	74.1	71.2	0.0	73.4	69.4	0.0	42.7	73.3	0.0
LnGrp LOS	E	D		E	E		E	E		D	E	
Approach Vol, veh/h		1277			1269			1523			434	
Approach Delay, s/veh		48.4			71.4			72.7			47.8	
Approach LOS		D			E			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	49.5	21.8	16.6	57.4	59.0	12.3	33.0	41.0				
Change Period (Y+Rc), s	6.3	* 6.3	5.4	6.3	5.4	6.3	5.4	6.3				
Max Green Setting (Gmax), s	29.6	* 35	33.6	28.7	53.6	10.7	27.6	34.7				
Max Q Clear Time (g_c+I1), s	14.5	13.9	11.0	26.6	55.5	5.0	23.0	35.9				
Green Ext Time (p_c), s	1.1	1.6	0.2	1.3	0.0	0.1	0.3	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			63.0									
HCM 6th LOS			E									
























# HCM 6th Signalized Intersection Summary

## 11: Lakeside Dr & McCarran Blvd

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  					 		
Traffic Volume (veh/h)	74	1280	125	330	2110	601	283	221	254	324	223	95
Future Volume (veh/h)	74	1280	125	330	2110	601	283	221	254	324	223	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	80	1376	0	355	2269	0	304	238	206	348	240	77
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	100	1556		411	2447		355	417	353	626	342	290
Arrive On Green	0.06	0.30	0.00	0.23	0.48	0.00	0.14	0.22	0.22	0.10	0.18	0.18
Sat Flow, veh/h	1781	5274	0	1781	5106	1585	1781	1870	1585	3456	1870	1585
Grp Volume(v), veh/h	80	1376	0	355	2269	0	304	238	206	348	240	77
Grp Sat Flow(s),veh/h/ln	1781	1702	0	1781	1702	1585	1781	1870	1585	1728	1870	1585
Q Serve(g_s), s	6.7	38.5	0.0	28.7	62.5	0.0	20.3	17.0	17.4	12.1	18.0	6.3
Cycle Q Clear(g_c), s	6.7	38.5	0.0	28.7	62.5	0.0	20.3	17.0	17.4	12.1	18.0	6.3
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	100	1556		411	2447		355	417	353	626	342	290
V/C Ratio(X)	0.80	0.88		0.86	0.93		0.86	0.57	0.58	0.56	0.70	0.27
Avail Cap(c_a), veh/h	197	1556		411	2447		355	417	353	649	342	290
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)	0.64	0.64	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.0	49.6	0.0	55.4	36.6	0.0	42.6	51.9	52.1	44.0	57.5	52.7
Incr Delay (d2), s/veh	9.0	5.2	0.0	20.8	7.6	0.0	18.1	1.9	2.4	1.0	11.5	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.6	22.1	0.0	21.3	34.9	0.0	16.3	12.9	11.4	9.1	14.7	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.0	54.8	0.0	76.2	44.2	0.0	60.8	53.8	54.5	45.0	68.9	54.9
LnGrp LOS	E	D		E	D		E	D	D	D	E	D
Approach Vol, veh/h		1456			2624			748			665	
Approach Delay, s/veh		56.1			48.6			56.8			54.8	
Approach LOS		E			D			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	39.0	40.0	52.0	25.0	33.0	13.8	78.2				
Change Period (Y+Rc), s	* 4.7	5.6	5.4	6.3	* 4.7	5.6	5.4	6.3				
Max Green Setting (Gmax), s	* 15	32.4	34.6	45.7	* 20	27.4	16.6	63.7				
Max Q Clear Time (g_c+I1), s	14.1	19.4	30.7	40.5	22.3	20.0	8.7	64.5				
Green Ext Time (p_c), s	0.2	1.7	0.4	3.6	0.0	0.9	0.1	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			52.4									
HCM 6th LOS			D									



























# HCM 6th Signalized Intersection Summary 12: Plumas St & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	947	133	148	1995	388	157	179	205	323	183	43
Future Volume (veh/h)	26	947	133	148	1995	388	157	179	205	323	183	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	29	1052	134	164	2217	325	174	199	172	359	203	44
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	50	1514	193	246	2061	919	216	308	261	466	394	85
Arrive On Green	0.03	0.48	0.48	0.28	1.00	1.00	0.16	0.16	0.16	0.07	0.26	0.26
Sat Flow, veh/h	1781	3171	403	1781	3554	1585	1133	1870	1585	3456	1489	323
Grp Volume(v), veh/h	29	589	597	164	2217	325	174	199	172	359	0	247
Grp Sat Flow(s),veh/h/ln	1781	1777	1798	1781	1777	1585	1133	1870	1585	1728	0	1812
Q Serve(g_s), s	2.4	38.9	39.0	12.3	0.0	0.0	22.3	14.9	15.3	10.5	0.0	17.4
Cycle Q Clear(g_c), s	2.4	38.9	39.0	12.3	0.0	0.0	24.7	14.9	15.3	10.5	0.0	17.4
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	50	848	858	246	2061	919	216	308	261	466	0	480
V/C Ratio(X)	0.58	0.69	0.70	0.67	1.08	0.35	0.80	0.65	0.66	0.77	0.00	0.51
Avail Cap(c_a), veh/h	233	848	858	246	2061	919	216	308	261	466	0	480
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.23	0.23	0.23	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.0	30.6	30.7	51.2	0.0	0.0	64.2	58.6	58.7	51.7	0.0	47.0
Incr Delay (d2), s/veh	10.2	4.7	4.6	3.3	36.7	0.2	19.4	4.6	6.0	7.7	0.0	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(95%),veh/ln	2.2	23.9	24.2	6.8	13.9	0.1	12.5	12.0	10.6	4.1	0.0	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.2	35.3	35.3	54.5	36.7	0.2	83.6	63.2	64.7	59.5	0.0	47.9
LnGrp LOS	F	D	D	D	F	A	F	E	E	E	A	D
Approach Vol, veh/h		1215			2706			545			606	
Approach Delay, s/veh		36.4			33.4			70.2			54.8	
Approach LOS		D			C			E			D	
Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	15.0	30.0	26.0	79.0		45.0	10.6	94.4				
Change Period (Y+Rc), s	4.5	* 5.3	* 5.3	7.4		* 5.3	6.4	* 7.4				
Max Green Setting (Gmax), s	10.5	* 25	* 21	71.6		* 40	19.6	* 73				
Max Q Clear Time (g_c+l1), s	12.5	26.7	14.3	41.0		19.4	4.4	2.0				
Green Ext Time (p_c), s	0.0	0.0	0.2	8.5		1.4	0.0	41.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				40.6								
HCM 6th LOS				D								

























# HCM 6th Signalized Intersection Summary 13: McCarran Blvd & Caughlin Pkwy/Cashil Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	317	94	308	33	85	42	379	1522	50	79	810	287
Future Volume (veh/h)	317	94	308	33	85	42	379	1522	50	79	810	287
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	396	118	290	41	106	40	474	1902	56	99	1012	324
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	457	364	309	208	335	284	528	2430	71	120	1505	482
Arrive On Green	0.13	0.19	0.19	0.12	0.18	0.18	0.15	0.48	0.48	0.07	0.39	0.39
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	3456	5098	150	1781	3829	1225
Grp Volume(v), veh/h	396	118	290	41	106	40	474	1269	689	99	900	436
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1728	1702	1843	1781	1702	1650
Q Serve(g_s), s	16.8	8.1	27.1	3.1	7.4	3.2	20.2	46.7	46.8	8.2	32.7	32.7
Cycle Q Clear(g_c), s	16.8	8.1	27.1	3.1	7.4	3.2	20.2	46.7	46.8	8.2	32.7	32.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		0.74
Lane Grp Cap(c), veh/h	457	364	309	208	335	284	528	1623	879	120	1338	649
V/C Ratio(X)	0.87	0.32	0.94	0.20	0.32	0.14	0.90	0.78	0.78	0.83	0.67	0.67
Avail Cap(c_a), veh/h	634	372	315	208	335	284	613	1623	879	146	1338	649
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	63.8	51.9	59.5	59.9	53.6	51.8	62.4	32.8	32.8	69.1	37.5	37.6
Incr Delay (d2), s/veh	9.1	0.5	34.9	2.1	0.5	0.2	14.6	3.8	6.9	26.3	1.3	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.7	7.1	20.1	2.8	6.5	2.4	14.8	26.3	29.1	8.0	19.4	19.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.9	52.4	94.4	62.0	54.1	52.1	77.0	36.6	39.7	95.4	38.9	40.3
LnGrp LOS	E	D	F	E	D	D	E	D	D	F	D	D
Approach Vol, veh/h		804			187			2432			1435	
Approach Delay, s/veh		77.7			55.4			45.3			43.2	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.8	77.8	22.0	34.4	28.3	65.3	24.3	32.1				
Change Period (Y+Rc), s	5.7	* 6.3	4.5	* 5.2	5.4	6.3	4.5	* 5.2				
Max Green Setting (Gmax), s	12.3	* 69	17.5	* 30	26.6	54.7	27.5	* 20				
Max Q Clear Time (g_c+I1), s	10.2	48.8	5.1	29.1	22.2	34.7	18.8	9.4				
Green Ext Time (p_c), s	0.0	12.7	0.0	0.2	0.7	8.4	1.0	0.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			50.5									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary 14: McCarran Blvd & Caughlin Pkwy/Plumb Ln

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	81	75	62	88	397	81	1586	88	334	1132	230
Future Volume (veh/h)	207	81	75	62	88	397	81	1586	88	334	1132	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	241	94	66	72	102	349	94	1844	92	388	1316	240
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	366	507	430	409	443	376	200	2032	101	451	1833	334
Arrive On Green	0.08	0.27	0.27	0.04	0.24	0.24	0.11	0.41	0.41	0.13	0.42	0.42
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	4982	248	3456	4341	791
Grp Volume(v), veh/h	241	94	66	72	102	349	94	1259	677	388	1032	524
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1702	1826	1728	1702	1728
Q Serve(g_s), s	11.5	5.8	4.8	4.6	6.6	32.3	7.4	52.1	52.3	16.5	37.7	37.7
Cycle Q Clear(g_c), s	11.5	5.8	4.8	4.6	6.6	32.3	7.4	52.1	52.3	16.5	37.7	37.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		0.46
Lane Grp Cap(c), veh/h	366	507	430	409	443	376	200	1389	745	451	1438	730
V/C Ratio(X)	0.66	0.19	0.15	0.18	0.23	0.93	0.47	0.91	0.91	0.86	0.72	0.72
Avail Cap(c_a), veh/h	366	507	430	672	529	448	200	1389	745	723	1438	730
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	42.2	41.9	41.6	40.6	46.2	56.0	62.4	41.7	41.8	63.9	35.9	35.9
Incr Delay (d2), s/veh	4.3	0.2	0.2	0.2	0.3	23.6	7.8	10.1	17.1	6.1	1.8	3.4
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(95%),veh/ln	5.1	5.0	3.5	3.7	5.7	22.0	6.7	30.7	34.4	12.0	21.8	22.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.5	42.1	41.7	40.8	46.4	79.6	70.2	51.9	58.8	70.0	37.7	39.3
LnGrp LOS	D	D	D	D	D	E	E	D	E	E	D	D
Approach Vol, veh/h	401			523			2030			1944		
Approach Delay, s/veh	44.7			67.8			55.0			44.6		
Approach LOS	D			E			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.2	68.4	10.9	45.6	23.0	70.6	16.0	40.4				
Change Period (Y+Rc), s	5.6	7.2	4.5	4.9	6.2	* 7.2	4.5	* 4.9				
Max Green Setting (Gmax), s	31.4	42.8	28.5	25.1	16.8	* 58	11.5	* 42				
Max Q Clear Time (g_c+I1), s	18.5	54.3	6.6	7.8	9.4	39.7	13.5	34.3				
Green Ext Time (p_c), s	1.1	0.0	0.2	0.6	0.1	9.3	0.0	1.2				
Intersection Summary												
HCM 6th Ctrl Delay	51.4											
HCM 6th LOS	D											

# HCM 6th Signalized Intersection Summary 15: McCarran Blvd & Mayberry Dr

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	215	196	220	246	515	262	1722	179	377	1278	221
Future Volume (veh/h)	167	215	196	220	246	515	262	1722	179	377	1278	221
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	194	250	0	256	286	0	305	2002	0	438	1486	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	282		299	326		363	2170		479	1804	
Arrive On Green	0.11	0.15	0.00	0.13	0.17	0.00	0.20	0.43	0.00	0.14	0.35	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	194	250	0	256	286	0	305	2002	0	438	1486	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1702	1585	1728	1702	1585
Q Serve(g_s), s	13.6	19.6	0.0	18.0	22.4	0.0	24.7	55.6	0.0	18.8	39.8	0.0
Cycle Q Clear(g_c), s	13.6	19.6	0.0	18.0	22.4	0.0	24.7	55.6	0.0	18.8	39.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	263	282		299	326		363	2170		479	1804	
V/C Ratio(X)	0.74	0.89		0.86	0.88		0.84	0.92		0.91	0.82	
Avail Cap(c_a), veh/h	305	416		299	415		363	2170		484	1804	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.14	0.14	0.00
Uniform Delay (d), s/veh	48.0	62.4	0.0	46.6	60.4	0.0	57.4	40.8	0.0	63.7	44.2	0.0
Incr Delay (d2), s/veh	7.7	14.4	0.0	21.2	15.7	0.0	16.0	8.0	0.0	4.3	0.6	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(95%),veh/ln	10.8	15.7	0.0	14.8	17.7	0.0	18.2	31.8	0.0	10.1	18.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.7	76.8	0.0	67.8	76.1	0.0	73.4	48.8	0.0	68.0	44.9	0.0
LnGrp LOS	E	E		E	E		E	D		E	D	
Approach Vol, veh/h		444			542			2307			1924	
Approach Delay, s/veh		67.6			72.2			52.1			50.1	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.8	70.9	24.0	28.3	37.7	60.0	20.5	31.8				
Change Period (Y+Rc), s	6.0	7.1	* 4.8	* 5.7	7.1	* 7	* 4.7	5.7				
Max Green Setting (Gmax), s	21.0	52.9	* 19	* 33	20.9	* 53	* 19	33.3				
Max Q Clear Time (g_c+l1), s	20.8	57.6	20.0	21.6	26.7	41.8	15.6	24.4				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.0	0.0	6.8	0.2	1.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			54.8									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary

## 16: McCarran Blvd & 4th St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	292	126	150	333	182	142	374	1838	217	117	1399	210
Future Volume (veh/h)	292	126	150	333	182	142	374	1838	217	117	1399	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	332	143	0	378	207	121	425	2089	0	133	1590	181
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	387	174		530	245	208	439	2578		157	1809	562
Arrive On Green	0.11	0.09	0.00	0.15	0.13	0.13	0.25	0.50	0.00	0.09	0.35	0.35
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	332	143	0	378	207	121	425	2089	0	133	1590	181
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	14.2	11.3	0.0	15.6	16.2	8.7	35.4	51.4	0.0	11.0	43.8	8.7
Cycle Q Clear(g_c), s	14.2	11.3	0.0	15.6	16.2	8.7	35.4	51.4	0.0	11.0	43.8	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	387	174		530	245	208	439	2578		157	1809	562
V/C Ratio(X)	0.86	0.82		0.71	0.84	0.58	0.97	0.81		0.85	0.88	0.32
Avail Cap(c_a), veh/h	530	565		576	584	495	439	2578		306	1809	562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.42	0.42	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.4	66.8	0.0	60.3	63.7	39.6	55.9	31.1	0.0	67.4	45.4	17.3
Incr Delay (d2), s/veh	10.1	9.3	0.0	3.8	7.7	2.6	20.3	1.2	0.0	11.7	6.5	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	0.0
%ile BackOfQ(95%),veh/ln	10.9	9.6	0.0	11.3	12.8	6.3	22.4	24.9	0.0	9.3	26.0	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.5	76.2	0.0	64.1	71.4	42.1	76.2	32.4	0.0	79.1	51.9	18.8
LnGrp LOS	E	E		E	E	D	E	C		E	D	B
Approach Vol, veh/h		475			706			2514			1904	
Approach Delay, s/veh		75.7			62.5			39.8			50.6	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.4	82.9	28.0	19.6	42.0	60.3	21.8	25.9				
Change Period (Y+Rc), s	6.2	* 7.2	5.0	5.7	5.0	7.2	5.0	6.2				
Max Green Setting (Gmax), s	25.8	* 31	25.0	45.3	37.0	19.8	23.0	46.8				
Max Q Clear Time (g_c+I1), s	13.0	53.4	17.6	13.3	37.4	45.8	16.2	18.2				
Green Ext Time (p_c), s	0.2	0.0	0.8	0.7	0.0	0.0	0.6	1.4				
Intersection Summary												
HCM 6th Ctrl Delay			49.4									
HCM 6th LOS			D									
























# HCM 6th Signalized Intersection Summary 17: McCarran Blvd & Mae Anne Ave/Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	680	212	519	282	205	117	705	1561	246	123	1151	394
Future Volume (veh/h)	680	212	519	282	205	117	705	1561	246	123	1151	394
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	747	233	0	310	225	0	775	1715	0	135	1265	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	785	266		727	247		816	2073		158	1287	
Arrive On Green	0.23	0.14	0.00	0.21	0.13	0.00	0.24	0.41	0.00	0.09	0.25	0.00
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	3456	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	747	233	0	310	225	0	775	1715	0	135	1265	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1728	1702	1585	1781	1702	1585
Q Serve(g_s), s	32.0	18.3	0.0	11.7	17.8	0.0	33.1	45.1	0.0	11.2	37.0	0.0
Cycle Q Clear(g_c), s	32.0	18.3	0.0	11.7	17.8	0.0	33.1	45.1	0.0	11.2	37.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	785	266		727	247		816	2073		158	1287	
V/C Ratio(X)	0.95	0.88		0.43	0.91		0.95	0.83		0.85	0.98	
Avail Cap(c_a), veh/h	788	439		727	249		816	2073		235	1287	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.64	0.64	0.00
Uniform Delay (d), s/veh	57.2	63.0	0.0	51.4	64.2	0.0	56.4	39.9	0.0	67.4	55.8	0.0
Incr Delay (d2), s/veh	21.1	10.6	0.0	0.4	33.9	0.0	21.5	4.0	0.0	12.0	16.5	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(95%),veh/ln	22.8	14.5	0.0	8.9	16.3	0.0	23.1	25.9	0.0	8.6	22.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.3	73.6	0.0	51.8	98.2	0.0	77.9	43.8	0.0	79.4	72.2	0.0
LnGrp LOS	E	E		D	F		E	D		E	E	
Approach Vol, veh/h	980			535			2490			1400		
Approach Delay, s/veh	77.2			71.3			54.4			72.9		
Approach LOS	E			E			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.5	67.3	36.5	27.1	41.8	45.0	38.9	24.8				
Change Period (Y+Rc), s	6.2	6.4	5.0	* 5.8	6.4	* 7.2	* 4.8	5.0				
Max Green Setting (Gmax), s	19.8	53.6	18.5	* 35	35.4	* 38	* 34	20.0				
Max Q Clear Time (g_c+I1), s	13.2	47.1	13.7	20.3	35.1	39.0	34.0	19.8				
Green Ext Time (p_c), s	0.2	4.9	0.5	1.0	0.1	0.0	0.1	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	65.0											
HCM 6th LOS	E											

































# HCM 6th Signalized Intersection Summary

## 18: McCarran Blvd & 7th St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	498	264	246	244	278	217	347	1673	261	238	1218	522
Future Volume (veh/h)	498	264	246	244	278	217	347	1673	261	238	1218	522
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	560	297	207	274	312	183	390	1880	220	267	1369	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	657	369	313	338	347	294	688	2140	664	322	1566	
Arrive On Green	0.15	0.20	0.20	0.14	0.19	0.19	0.20	0.42	0.42	0.09	0.31	0.00
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	560	297	207	274	312	183	390	1880	220	267	1369	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	19.3	22.7	11.8	18.4	24.5	15.9	15.3	50.8	14.0	11.4	38.1	0.0
Cycle Q Clear(g_c), s	19.3	22.7	11.8	18.4	24.5	15.9	15.3	50.8	14.0	11.4	38.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	657	369	313	338	347	294	688	2140	664	322	1566	
V/C Ratio(X)	0.85	0.80	0.66	0.81	0.90	0.62	0.57	0.88	0.33	0.83	0.87	
Avail Cap(c_a), veh/h	810	404	342	438	411	349	688	2140	664	530	1566	
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	0.39	0.39	0.39	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.9	57.4	23.7	42.4	59.7	56.3	54.2	40.0	29.4	66.8	49.3	0.0
Incr Delay (d2), s/veh	7.4	10.5	4.2	8.6	20.0	2.5	1.3	2.3	0.5	5.6	7.1	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(95%),veh/ln	13.7	17.4	8.4	13.8	19.5	10.8	9.3	25.4	7.9	8.9	23.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.3	67.9	27.8	51.0	79.8	58.8	55.6	42.3	29.9	72.4	56.4	0.0
LnGrp LOS	D	E	C	D	E	E	E	D	C	E	E	
Approach Vol, veh/h	1064			769			2490			1636		
Approach Delay, s/veh	50.3			64.5			43.3			59.0		
Approach LOS	D			E			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	69.3	25.5	35.2	36.3	53.0	27.3	33.4				
Change Period (Y+Rc), s	6.0	6.4	4.6	5.6	6.4	* 7	* 4.7	* 5.6				
Max Green Setting (Gmax), s	23.0	42.6	29.4	32.4	19.4	* 46	* 29	* 33				
Max Q Clear Time (g_c+I1), s	13.4	52.8	20.4	24.7	17.3	40.1	21.3	26.5				
Green Ext Time (p_c), s	0.6	0.0	0.5	1.5	0.3	3.9	1.4	1.3				
Intersection Summary												
HCM 6th Ctrl Delay	51.6											
HCM 6th LOS	D											

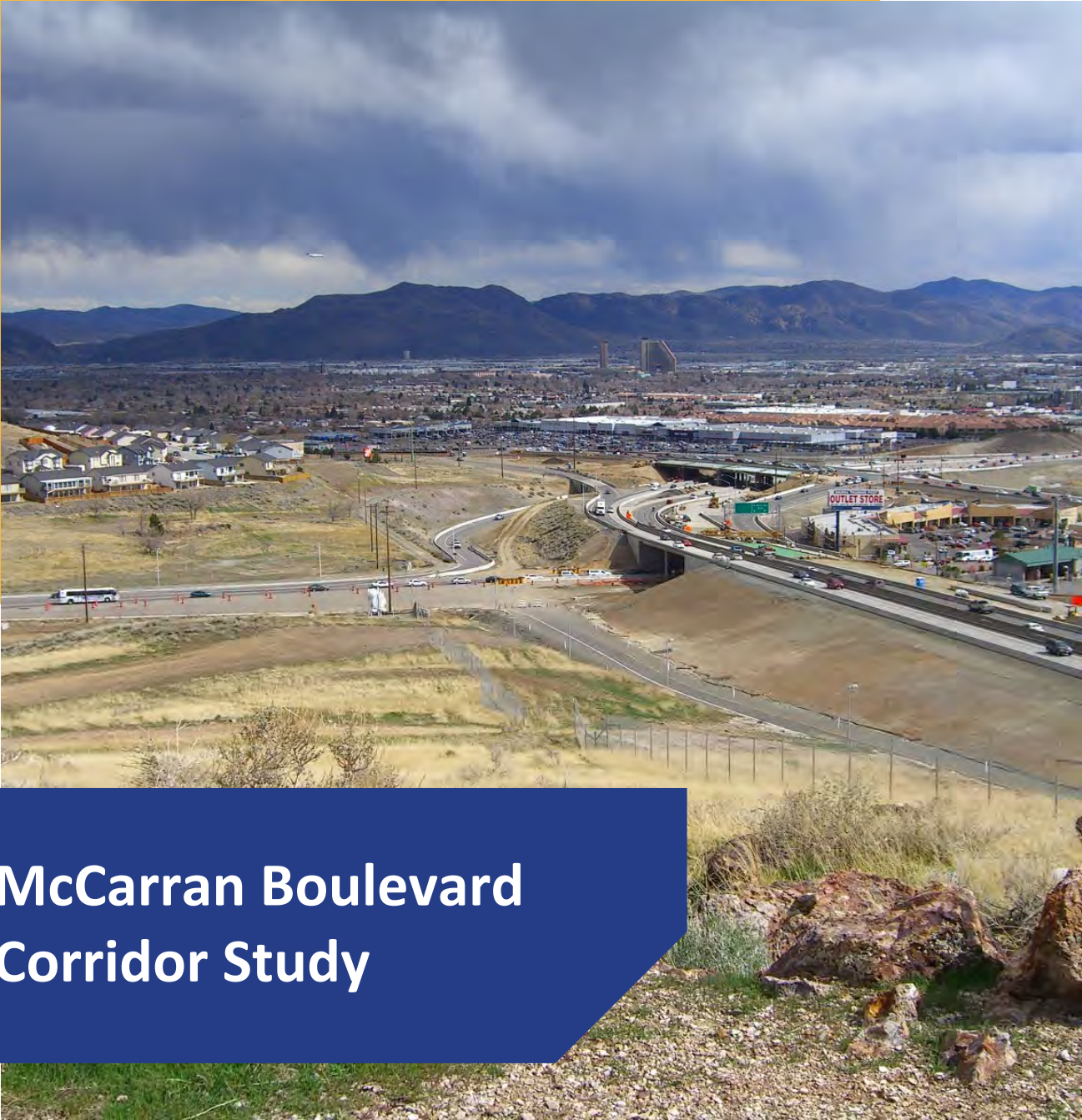
# HCM 6th Signalized Intersection Summary 19: Clear Acre Ln & McCarran Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  			 			 	
Traffic Volume (veh/h)	785	1652	28	83	903	238	81	456	199	231	306	379
Future Volume (veh/h)	785	1652	28	83	903	238	81	456	199	231	306	379
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	935	1967	29	99	1075	214	96	543	0	275	364	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1138	2534	37	122	1130	351	341	598		331	598	
Arrive On Green	0.33	0.49	0.49	0.07	0.22	0.22	0.19	0.17	0.00	0.19	0.17	0.00
Sat Flow, veh/h	3456	5184	76	1781	5106	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	935	1291	705	99	1075	214	96	543	0	275	364	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1857	1781	1702	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	37.3	46.9	46.9	8.2	31.2	13.7	6.9	22.5	0.0	22.3	14.2	0.0
Cycle Q Clear(g_c), s	37.3	46.9	46.9	8.2	31.2	13.7	6.9	22.5	0.0	22.3	14.2	0.0
Prop In Lane	1.00		0.04	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1138	1664	908	122	1130	351	341	598		331	598	
V/C Ratio(X)	0.82	0.78	0.78	0.81	0.95	0.61	0.28	0.91		0.83	0.61	
Avail Cap(c_a), veh/h	1138	1664	908	406	1130	351	341	633		331	614	
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	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.2	31.6	31.6	68.9	57.6	29.6	51.8	61.2	0.0	58.8	57.8	0.0
Incr Delay (d2), s/veh	4.9	3.6	6.5	12.0	16.5	3.1	2.1	16.4	0.0	20.8	1.7	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(95%),veh/ln	23.0	26.5	29.5	7.4	21.1	9.3	5.9	17.0	0.0	17.6	10.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.2	35.2	38.1	80.9	74.1	32.7	53.9	77.7	0.0	79.6	59.5	0.0
LnGrp LOS	D	D	D	F	E	C	D	E		E	E	
Approach Vol, veh/h		2931			1388			639			639	
Approach Delay, s/veh		41.0			68.2			74.1			68.1	
Approach LOS		D			E			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	34.0	31.4	16.1	80.6	34.0	31.4	56.7	40.0				
Change Period (Y+Rc), s	6.1	* 6.1	5.8	6.9	* 5.3	6.1	6.9	* 6.8				
Max Green Setting (Gmax), s	27.9	* 27	34.2	37.1	* 29	25.9	38.1	* 33				
Max Q Clear Time (g_c+I1), s	24.3	24.5	10.2	48.9	8.9	16.2	39.3	33.2				
Green Ext Time (p_c), s	0.3	0.8	0.2	0.0	0.2	1.5	0.0	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			54.6									
HCM 6th LOS			D									



# Outreach Materials

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# McCarran Boulevard Corridor Study

## Outreach Summary Report

December 2022

Prepared by CA Group and Parametrix



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# 1 - INTRODUCTION

## Corridor Overview

McCarran Boulevard is a ring road approximately 23 miles in length that largely encircles the Reno-Sparks urbanized area. Sections of the roadway carry some of the highest traffic volumes in the region, including high percentages of freight traffic. The corridor provides direct access to some of the largest employers in the region and key regional destinations, including the Reno-Tahoe International Airport and the University of Nevada, Reno (UNR). McCarran Boulevard has multiple interchanges with the interstate system and other major highways, such as I-80, I-580, US 395, and Pyramid Highway.

The character of the McCarran Boulevard corridor varies widely throughout the region. Sections of the roadway are highly urbanized, while others are more suburban or rural in nature. The roadway traverses industrial, commercial, and residential land uses, and has varying speed limits, multimodal elements, and traffic patterns throughout. Sections of McCarran Boulevard are also utilized by several transit routes. Due to the varying nature of development that has occurred alongside the corridor over the past several decades, and the piecemeal construction of the roadway itself, McCarran Boulevard is often unable to fulfill its intended function, as a high-capacity ring road or beltway.

Although there have been several localized studies and improvements implemented along sections of McCarran Boulevard in recent years, a comprehensive study of the corridor is needed to help establish a consistent framework for improvements going forward.

## Outreach Purpose

Throughout the course of the McCarran Boulevard Corridor Study, a number of efforts were made to gather input from stakeholders and members of the public. Stakeholder outreach was conducted throughout the planning process, while public outreach was held in two distinct phases. The following report summarizes the outreach efforts and feedback received. Public-facing outreach materials used throughout the process are appended to this document.

## 2 – STAKEHOLDER AND AGENCY OUTREACH

The study team made presentations to RTC’s Technical Advisory Committee (TAC) throughout the project, comprised of staff from NDOT, the Reno-Tahoe International Airport, Washoe County, the City of Sparks, the City of Reno, the Washoe County School District, the Truckee Meadows Regional Planning Agency (TMRPA), and UNR. The meetings were conducted both virtually and in-person to solicit stakeholder comments on the existing conditions analysis (meeting #1), brainstorming of potential recommendations (meeting #2), and presentation of recommendations (meeting #3). Meetings #2 and #3 were conducted just prior to the first and second public meetings, respectively, to obtain stakeholder and agency support prior to soliciting public feedback.


The study team also held a series of meetings with leadership from RTC and NDOT. The purpose of these meetings was to review feedback received during the virtual public meeting and public comment period, and to reach consensus about the study direction moving forward. In particular, the group discussed tradeoffs between vehicular speed and multimodal accommodation/safety, as well as the role of transit along the corridor. This direction helped inform the alternatives development and recommendations phases.

TAC Member	Agency
John Flansberg	City of Reno – Public Works
Kerrie Koski	City of Reno – Public Works
Kurt Dietrich	City of Reno – Traffic Engineering
Angela Fuss	City of Reno – Development Services
Jon Ericson	City of Sparks – Engineering
Amber Sosa	City of Sparks – Engineering
Jim Rundle	City of Sparks – Planning
Mitch Fink	Washoe County – Water Resources
Julee Olander	Washoe County – Community Services Department
Mojra Hauenstein	Washoe County
Dwayne Smith	Washoe County
Teresa Golden	Washoe School District – Planning and Design
MJ Cloud	Washoe School District – Safe Routes to School
Celeste Arnold	Washoe School District – Transportation Logistics
Mitch Markey	Reno Sparks Indian Colony
Kevin Verre	NDOT
Lacey Tisler	NDOT
Andrea Gutierrez	FHWA
Jeremy Smith	Truckee Meadows Regional Planning Agency
Lissa Butterfield	Reno-Tahoe Airport Authority
Titus Robinson	Reno-Tahoe Airport Authority
Lt. Luis Ayala-Zapata	Nevada Highway Patrol
Dean Hitchcock	University of Nevada, Reno

TAC Member	Agency
<b>RTC Staff</b>	
Dan Doenges	RTC
Bill Thomas	RTC
Xuan Wang	RTC
Dale Keller	RTC
Mark Maloney	RTC
Lauren Ball	RTC
James Weston	RTC
Jim Gee	RTC


### 3 – PUBLIC INFORMATION MEETING #1

The first public outreach effort for the McCarran Boulevard Corridor Study was conducted between March 10 and April 11, 2022. In collaboration with RTC, the study team developed a set of interactive, web-based outreach platforms to provide convenient, on-demand engagement opportunities. This was focused around the ENGAGE website, which provided a virtual public meeting room where participants can watch introductory videos from RTC and NDOT representatives, view the project boards, access the online survey, view the Story Map webpage, and leave comments in the interactive comment map. These platforms allowed study area residents, business owners, and other stakeholders to provide feedback about the most pressing needs, concerns, and opportunities along McCarran Boulevard, along with their thoughts about the future of the corridor.




**Virtual Public Meeting**

Engage in a virtual public meeting at any time between Thursday, March 10 and Monday, April 11, 2022.



**Alternative Public Meeting**

If you use a screen reader, each display is available for review on our alternative public meeting page.



**Spanish Public Meeting**

Si habla español, cada pantalla está disponible para su revisión en nuestra página de reunión pública en español.



*ENGAGE landing page*

#### Advertising and Media

RTC created a web page dedicated to the McCarran Boulevard Corridor Study, where they posted general project information, along with periodic updates. The project web page included a link to the ENGAGE platform, where users could also access the online survey, interactive comment map, and Story Map website.

RTC McCarran Boulevard Corridor Study: [Outreach Summary Report](#)

RTC also sent out a press release on March 10 announcing the availability of the outreach materials and encouraging residents to participate, along with similar announcements on the agency's Facebook and Twitter pages. The agency made several other posts on social media throughout the comment period reminding residents of the opportunity to provide feedback about the study.

## ENGAGE

Although the ENGAGE platform was developed as a safe alternative to in-person meetings during the pandemic, it has become an effective alternative with longstanding viability. The platform allows residents to interact with the virtual public meeting 24 hours a day, seven days a week, during the open period (in this case, over the span of 30 days). No transportation or childcare is needed to participate in the meeting, and users can visit the site as often as they want, for as long as they want.

The ENGAGE platform serves as a central repository for a variety of outreach tools, including an online survey, an interactive comment map, and additional information provided on the project web page, or Story Map. All of these outreach tools were located in one "room", allowing participants to move around the room and view elements at their convenience. A series of information boards were produced to provide information on the study elements and existing conditions. These were posted in English, Spanish, and screen reader-accessible formats.

More information on the survey, interactive comment map, and Story Map are described in more detail in the following sections.

Over the course of the 30-day comment period, there were a total of 2,762 pageviews, including 813 unique visitors.

## Online Survey

The study team developed a seven-question online survey to help gauge residents' top concerns about McCarran Boulevard, along with their vision for the corridor's future. The team developed two versions of the online survey – one for the general public, and one for project stakeholders. The public link was widely distributed via social media, websites, and print media, while the stakeholder link was shared selectively with specific individuals and small organizations. Survey responses were compared to highlight differing perspectives and priorities between stakeholders, elected officials, and the general public.

Over the course of the 30-day comment period, we received 679 responses to the online survey. Responses to the questions are summarized below:

### Q1 – Which section of McCarran Boulevard do you travel along most often?

Section 2 – Northeast	52.9%
Section 3 – Southwest	29.4%
Section 4 - Southeast	17.7%
Section 1 - Northwest	0.0%

**Q2 – How often do you travel along McCarran Boulevard?**

Weekly	52.9%
Several times per day	23.5%
Daily	11.8%
Monthly (or less)	11.8%

**Q3 – For which of the following trip purposes do you/would you most often travel along McCarran Boulevard?**

Work	52.9%
Shopping	29.4%
Recreation	11.8%
Medical	5.9%
School	0.0%
Other	0.0%

**Q4 – Why do you typically choose to travel along McCarran Boulevard (instead of using other routes)?**

I live near the corridor	35.5%
I work near the corridor	29.4%
To avoid or bypass the freeway	23.5%
I live and work near the corridor	5.9%
I recreate near the corridor	0.0%

**Q5 – Please rank the items below on a scale of 1-4, with 1 being the most concerning issue and 4 being the least concerning issue you experience while traveling along McCarran Boulevard.**

Traffic congestion/reliability	3.35
Crashes/speeding/safety issues	2.82
Not enough safe places to walk or bicycle	2.53
Not enough convenient, accessible transit service	1.29

**Q6 – Do you think it is more important for McCarran Boulevard to:**

Move a lot of vehicles, safely and efficiently	57.3%
Safely and comfortably accommodate different modes of travel, like walking, bicycling, and transit, in addition to vehicles	42.7%

**Q7 – Which of the following statements do you most agree with?**

The entire McCarran Boulevard ring should have consistent characteristics	52.7%
Because land uses change as you travel around McCarran Boulevard, the roadway characteristics should vary too	47.3%



Due to the relatively small number of responses to the stakeholder survey (17 respondents), a summary of responses will not be provided. However, the main differences between responses to the stakeholder survey and the public survey were seen in questions 6 and 7. Just over 82 percent of respondents felt that it was more important for McCarran Boulevard to “move a lot of vehicles, safely and efficiently” (vs. safely and comfortably accommodating different modes). Similarly, nearly 71 percent of respondents agreed with the statement: “Because land uses change as you travel around McCarran Boulevard, the roadway characteristics should vary too.”

The sample size of the stakeholder survey is probably too small to draw sound conclusions, but it was interesting to note the different philosophies expressed by these populations.

### Interactive Comment Map

An interactive comment map was created to provide a space for residents to leave detailed, location-specific comments about the corridor. Users were asked to choose one of six categories for their comment, including Driving, Bicycle, Pedestrian, Transit, Accessibility, or Safety. During the 30-day comment period, we received a total of 61 comments. A breakdown of the number and percentage of comments by category is provided.

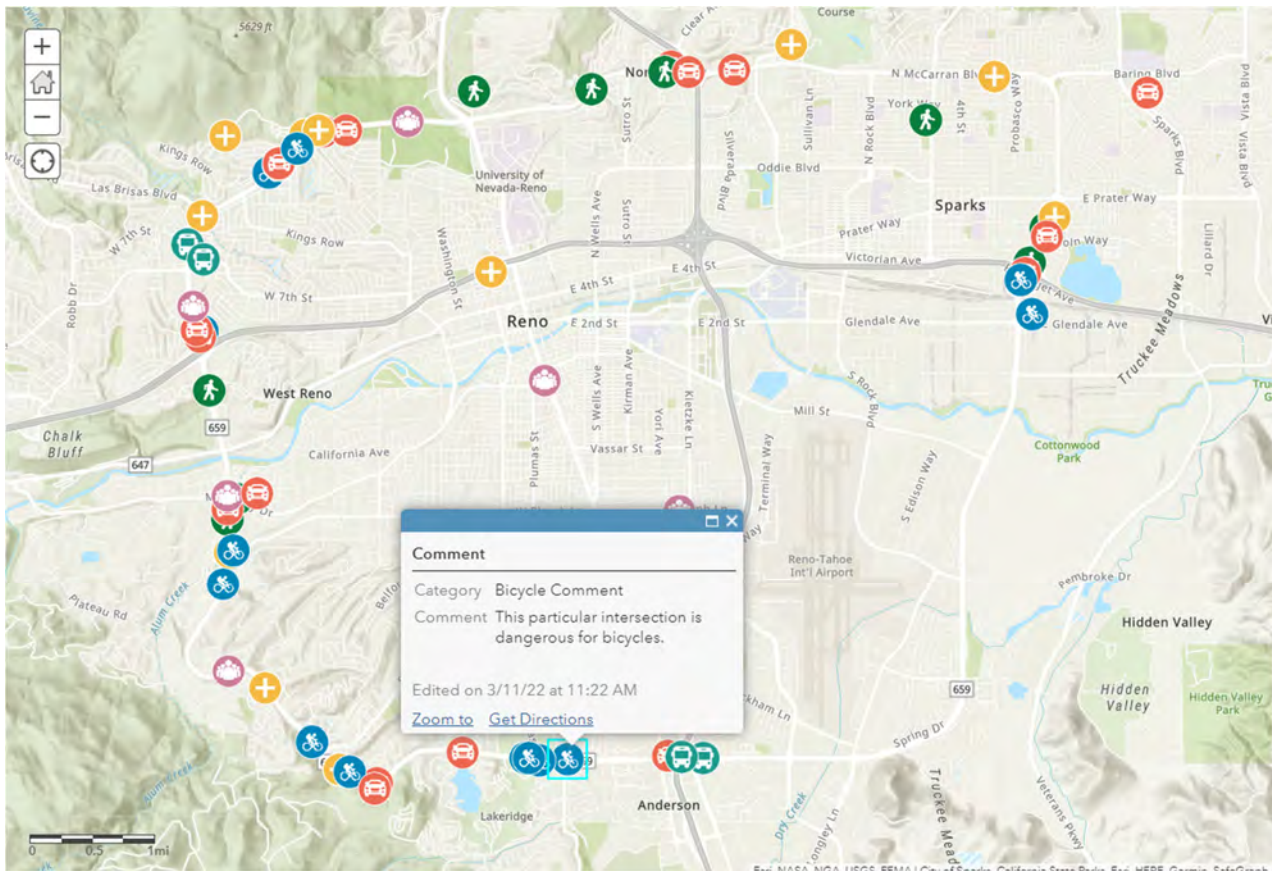
Category	Number of Responses	Percentage of Responses
Driving	17	27.9%
Bicycling	14	23.0%
Safety	12	19.7%
Pedestrian	8	13.1%
Transit	5	8.2%
Accessibility	5	8.2%

Major themes from the comments received on the interactive map included:

- Too many lights/intersections/points of access interrupt traffic flow
- Better bicycle facilities, particularly separate and protected facilities, are needed
- Speeding reported along the corridor
- Better/safer pedestrian facilities and crossing opportunities are needed
- Additional transit service desired along portions of the corridor

In terms of geographic location, higher concentrations of comments were clustered in the following areas:

- In the northeast quadrant, near I-80
- In the northwest quadrant, between I-80 and Virginia Street
- West McCarran, between Mayberry Drive and Plumb Lane
- In the southwest quadrant, between Skyline Boulevard and Plumas Street



*Interactive comment map – sample comment*

## Social Media

During the 30-day comment period, RTC received a number of comments via their Twitter and Facebook accounts. The most common suggestions included:

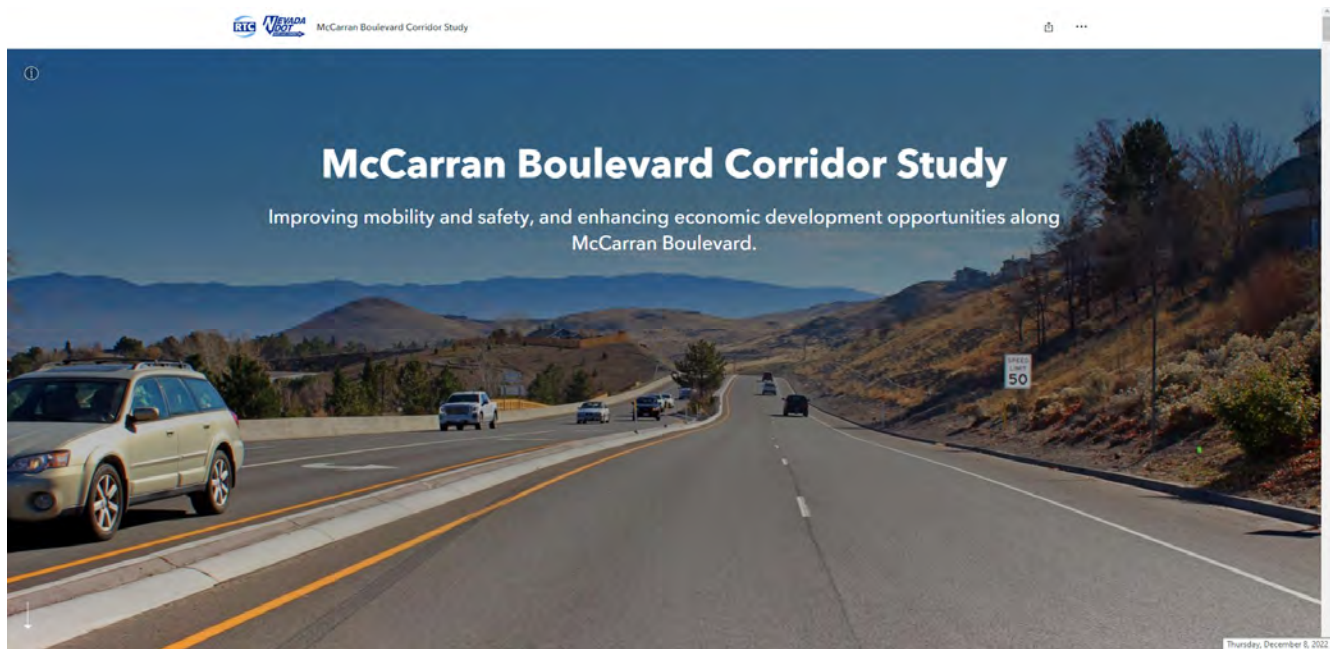
- Synchronize traffic signals
- Reduce intersections
- Install additional bicycle lanes
- Reduce speeds
- Designate McCarran as a freeway
- Install red-light cameras
- Complete missing sidewalks/gaps
- Add more transit along the corridor
- Repair potholes

## Story Map

Story Map is a web-based tool that provides a seamless, convenient way to display interactive map elements along with more traditional web content such as text and images. The study team developed a Story Map for this project to help display existing conditions maps and data in a user-friendly format. The mobile-friendly site was available throughout the duration of the project and was updated periodically with new materials as the study progressed.

The Story Map can be found online at:

<https://storymaps.arcgis.com/stories/a1722b52bf7949d1afe1b723a94ad149>



*McCarran Boulevard Story Map webpage*

## 4 – 30-DAY PUBLIC COMMENT PERIOD

A 30-day comment period was held to provide members of the public with the opportunity to weigh in on proposed recommendations for the McCarran Boulevard corridor. These recommendations were based on feedback from members of the public and agency stakeholders. The primary outreach materials were posted on the study's Story Map webpage, which was developed and updated throughout the study to build on the process and present new information. Story Map is a web-based tool that provides a seamless, convenient way to display interactive map elements along with more traditional web content such as text and images.

In addition, the RTC project manager solicited input via local news segments, such as The Road Ahead.

A total of 17 comments were received during the 30-day comment period. The primary topics of concern were bicycle facilities, congestion, safety, lighting, pavement condition, and growth. Comments received generally reiterated the need for proposed improvements, supporting recommendations made.



# **Public Information Meeting #1 Presentation Boards and Comment Summary**



## What is a corridor study?

A corridor study is a transportation planning study that takes an in-depth look at a roadway and its surroundings. The end result is a set of recommendations to help the corridor operate more safely and efficiently, and better meet the community's vision.

## Why study McCarran?

McCarran Boulevard is a 23-mile ring road encircling the Reno-Sparks urbanized area. This roadway has some of the highest traffic volumes in the region and provides access to a large number of employers. As the area continues to grow, traffic congestion and safety concerns will need to be addressed more strategically.

## Key Steps:

- Review existing conditions along the corridor, including traffic volumes, pedestrian and bicycle facilities, transit service, safety, and land use.
- Identify a vision for the corridor based on community and stakeholder input.
- Identify different types of transportation needs, based on a combination of technical analysis and community/stakeholder outreach.





# Vision and Approach

## Developing a Vision:

Before we can decide how to best invest in McCarran Boulevard, we must first develop a vision for how the corridor will look, feel, and function in the future.

## Our Approach:

The first step in developing a vision for McCarran's future is understanding what's working well along the corridor, and what needs improvement.

- We will use a data-driven approach to identify the most critical needs along the corridor.
- Recommended improvements will be context-sensitive and purposeful (i.e., they will address a clearly identified need).
- The level of investment in different modes will vary depending on surrounding land uses and the function of the roadway in different locations.



Context-Sensitive Design

More walking and bicycling is expected due to mixed land uses and transit stops along the route. These sections of the corridor have:

- Narrower vehicular lanes and slower travel speeds.
- Wider sidewalks with greater separation from vehicles and additional pedestrian amenities.
- Marked bike lanes or shared use paths, ideally with separation from vehicular traffic.



Vehicular-Focused Design

These sections of the corridor are more focused on moving vehicular traffic quickly and efficiently. They tend to have:

- Wider vehicular lanes with higher travel speeds.
- Minimal sidewalks, pedestrian amenities, and separation from vehicles.
- Minimal bike lanes or shoulders, usually lacking separation from vehicular traffic.

# McCarran Today, McCarran Tomorrow

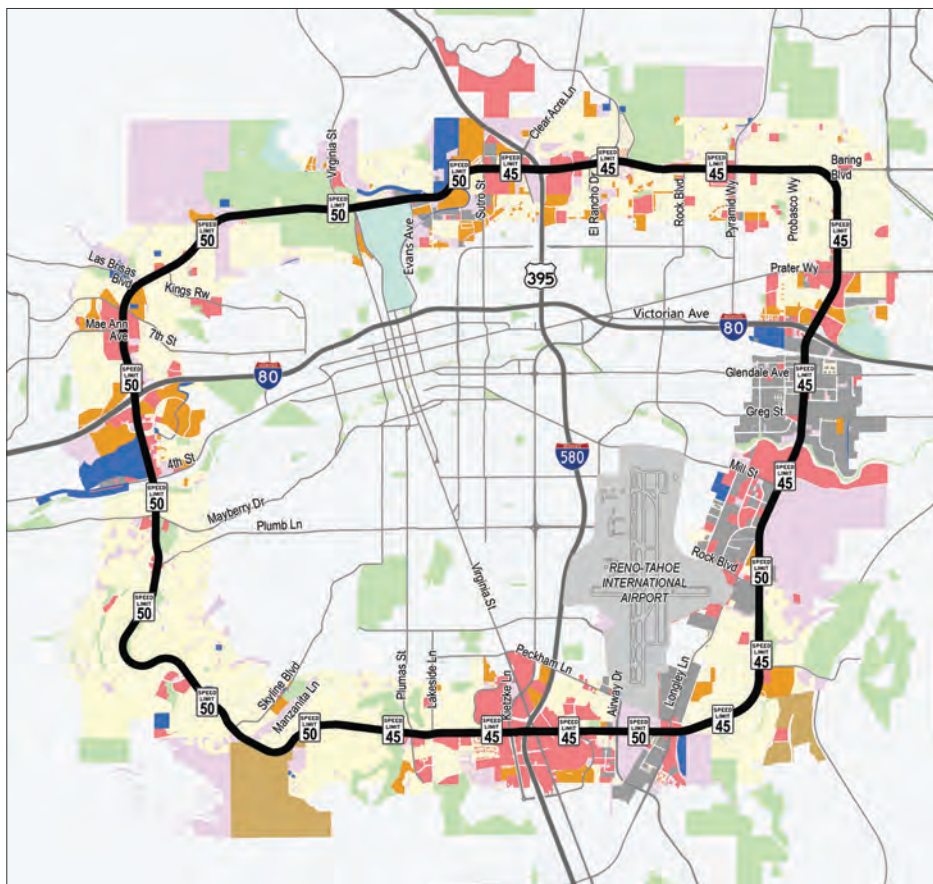
## Existing Land Use:

Currently, much of the land use along McCarran Boulevard is single family homes and commercial development. There are also industrial, multi-family residential, agricultural, parks, and vacant areas present.

## Future Land Use and Growth:

We use information about planned developments combined with land use modeling to help predict how the corridor will look in the future. Knowing when and how different areas might develop helps us plan for increased traffic and the need for new or expanded facilities.

Note: although RTC and NDOT do not approve development, these agencies proactively engage with local jurisdictions in an effort to anticipate potential issues arising from expected growth.





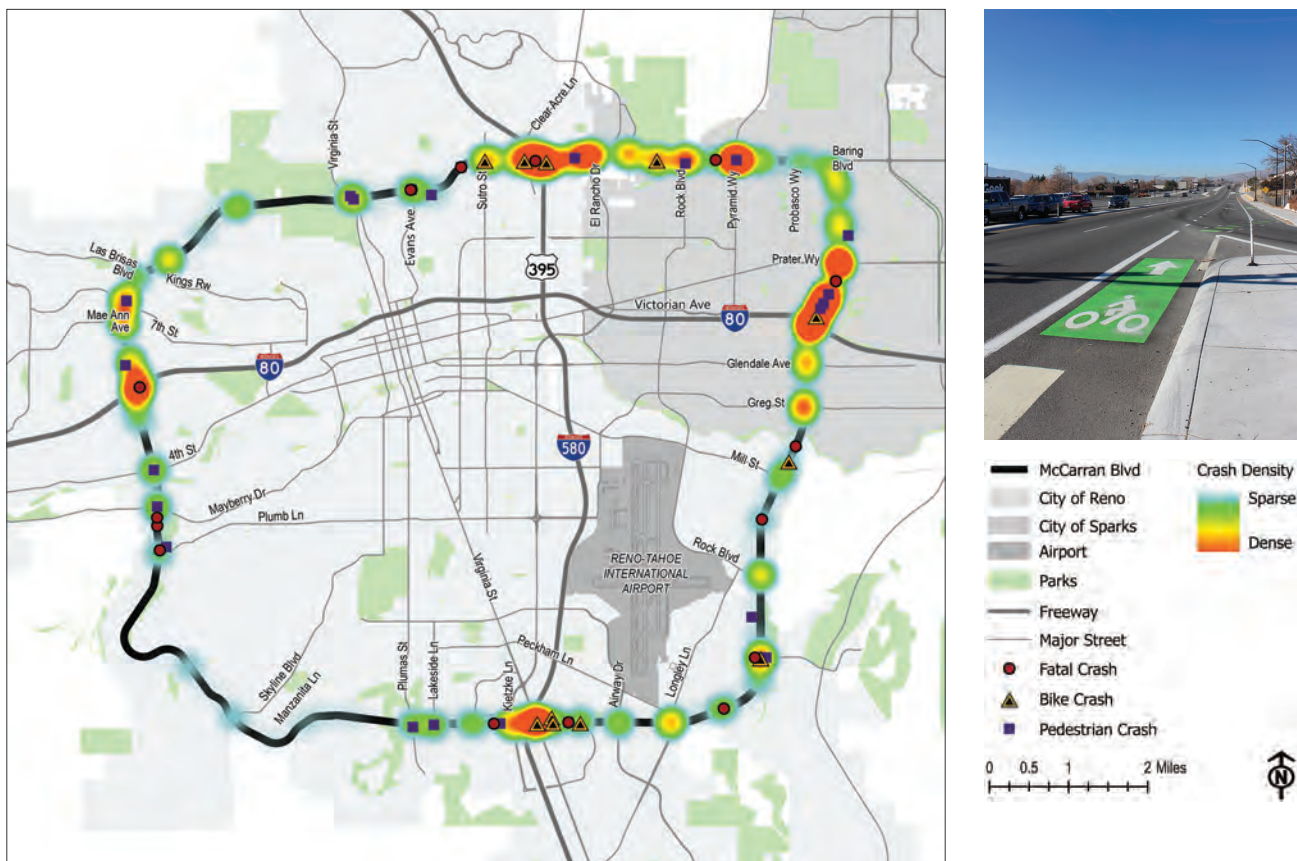
## Safety Data:

Reviewing historical crash data is one of the best ways to identify safety hot spots along a corridor. We can quickly spot areas with higher-than-average crash rates, fatal crashes, and pedestrian and bicycle-related crashes. This data helps us prioritize investments in the areas that need them most.

## Safety Hot Spots:

- Along McCarran Boulevard, areas with higher traffic volumes, a greater number of business access points, and denser development patterns have higher crash rates.
- Crash rates are especially high near the corridor's intersections with I-80, I-580, and US 395, including pedestrian and/or bicycle-related crashes.
- There are also a number of pedestrian and/or bicycle-related crashes along north McCarran (near the University) and southeast McCarran (near Mira Loma Park and shopping areas).


For more detailed information about safety along McCarran Boulevard, please visit the interactive StoryMap at <https://arcg.is/1nXeuG>.



# Issues and Opportunities




In 2019 **six fatal crashes** occurred in the high crash rate areas.




The Reno-Tahoe International Airport and University of Nevada, Reno are the **two largest trip generators** along the corridor.



Proposed development plans include a **350-unit apartment complex** and **1.2 million square feet of warehouse space**.




**13 transit routes** intersect with or run parallel to McCarran Boulevard. There are **12 transit stops** along the corridor.




Underserved communities include higher concentrations of low-income and minority residents than the rest of the region. These residents may be more likely to walk, bicycle, or rely on transit. There are **higher concentrations of underserved communities in the northeastern portion of the study area**, near major freeways.



There is **one notable bike facility gap** along the McCarran Boulevard corridor. There are plans in the RTC Regional Transportation Plan to complete this gap.



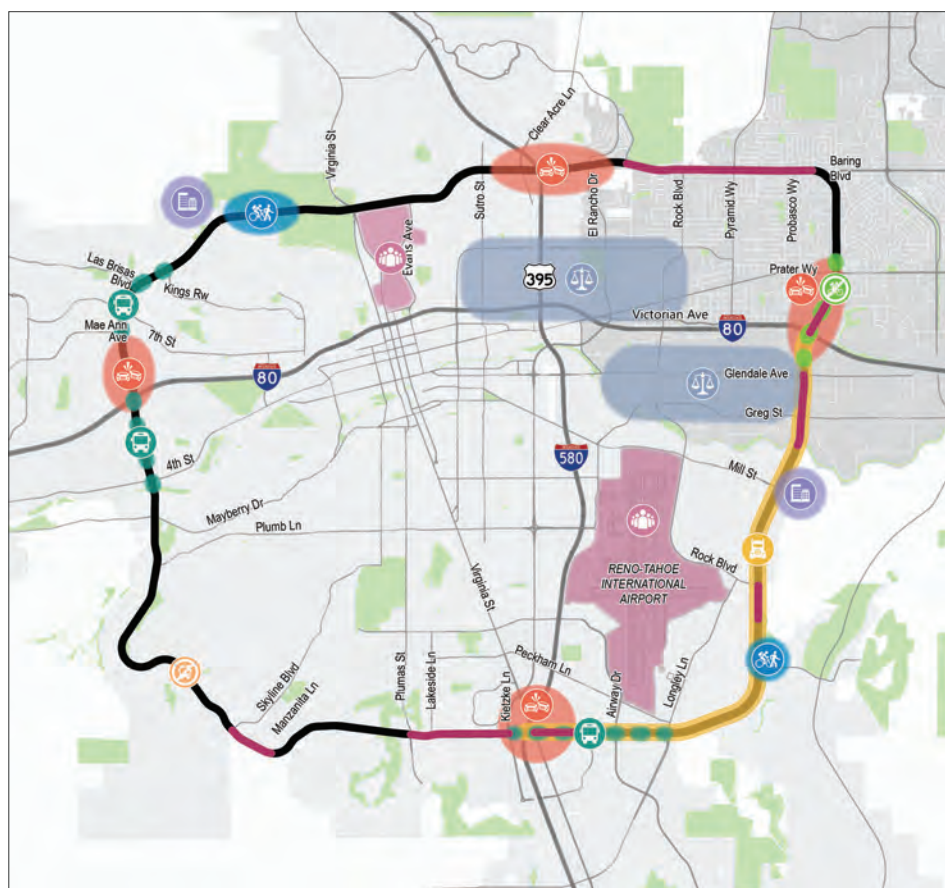
Transit service along some segments of the McCarran loop is not feasible due to **lower density residential** or other land uses that **do not support this service**.



The presence of large trucks can impact safety and the flow of traffic along a roadway. Trucks make up between **4.8 and 6.4 percent of total traffic** along these segments of the corridor, which is considered relatively high for an urban area.



McCarran Boulevard provides access to **10 different parks and open space areas**, including the Rancho San Rafael Regional Park and Huffaker Hills, which are popular among multi-modal users.



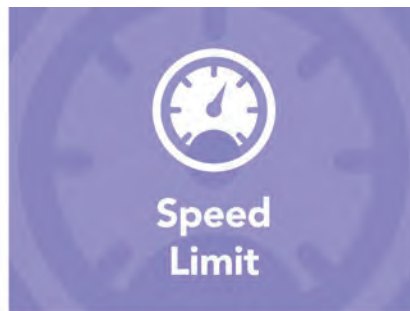


# What Happens Next?

## Identify Specific Needs:

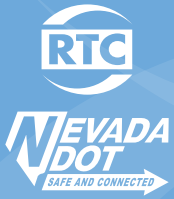
- We will develop a list of place types and determine the expected/desired characteristics of each.
- Example place types could include residential, industrial, and commercial areas, among others.
- Key characteristics of each place type could include posted speed limit, truck traffic, surrounding land use, pedestrian environment, etc.
- These place types will help us determine the appropriate level of investment for each mode of travel, in different types of environments along the corridor.

## McCarran Boulevard Zone Characteristics:



## Your Input:

- After we develop a list of potential improvements for McCarran Boulevard, we will hold another round of public and stakeholder outreach to ask for your input.
- For more detailed information about McCarran Boulevard, please visit the interactive StoryMap at <https://arcg.is/1nXeuG>.



# McCarran Boulevard Corridor Study

30-DAY PUBLIC COMMENT PERIOD:  
03.10.2022 - 04.11.2022

## Four platforms

were used to gather public input about needs, concerns, and the vision for the McCarran Boulevard corridor's future.



1

Interactive  
Virtual Public  
Meeting

**813**  
UNIQUE VISITORS

**2,762**  
PAGE VIEWS



2

Seven-  
Question  
Online Survey

**679**  
RESPONSES

## KEY FINDINGS

3

### TOP THREE CONCERNS

- Traffic congestion
- Vehicular crashes/speeding
- Not enough safe places to walk or bicycle



39%



31%

Other

The majority of respondents used the corridor to access work (39%) or shopping (31%).



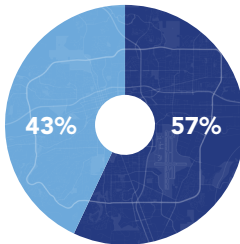
36%



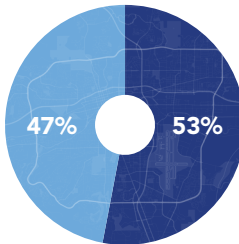
34%

Other

Many respondents travel along McCarran Boulevard to avoid/bypass the freeway (36%) or because they live near the corridor (34%).



Respondents saw the need to move a lot of vehicles quickly and efficiently along the corridor (57%) and also accommodate a variety of travel modes (43%).



Respondents were split over whether McCarran should have consistent characteristics around the entire ring (53%) or varying characteristics as land uses change (47%).



3

## Interactive Comment Map

61 comments were received in the following categories:



Driving 17



Bicycling 14



Safety 12



Pedestrian 8



Transit 5



Accessibility 5



4

## Social Media: Twitter and Facebook

RTC received a number of comments via social media and the most common suggestions included:

- Synchronize Signals
- Reduce Intersections
- Install Bicycle Lane
- Reduce Speed
- Designate as Freeway
- Install Cameras
- Complete Sidewalks
- Add Transit
- Repair Potholes

## MAJOR THEMES

- Too many lights/intersections/points of access interrupt traffic flow
- Better bicycle facilities, particularly separate and protected facilities needed
- Speeding reported along the corridor
- Better/safer pedestrian facilities and crossing opportunities needed
- Additional transit service desired along portions of the corridor



Comments were clustered in the northwest and southwest quadrants of the corridor, and around east McCarran Boulevard between I-80 and Prater Way.

**Synchronize Signals**  
**Install Bicycle Lane**  
**Reduce Intersections**  
**Reduce Speed**  
**Complete Sidewalks**  
**Designate as Freeway**  
**Repair Potholes**  
**Add Transit**  
**Install Cameras**





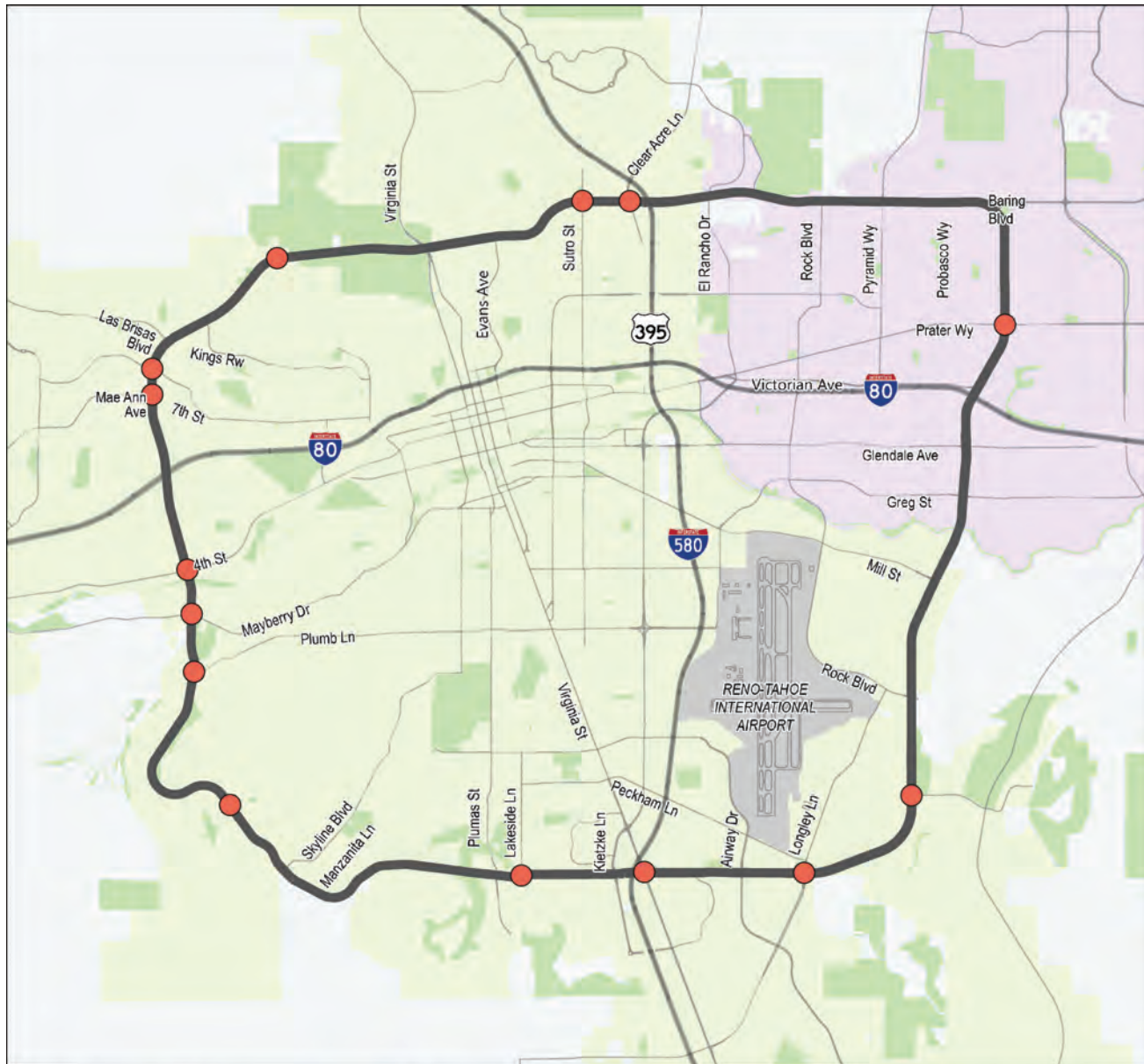
# **30-Day Comment Period**

## **Recommendation Maps and Comments Received**



# Proposed Intersection Improvements

The map below shows intersection locations to be improved in the future. Proposed improvements will be determined by future intersection-specific studies, but may include such changes as additional turn lanes, extended signal timing, or new signal installations.



- |               |                          |
|---------------|--------------------------|
| McCarran Blvd | City of Sparks           |
| Freeway       | Parks                    |
| Major Street  | Intersection Improvement |
| City of Reno  |                          |

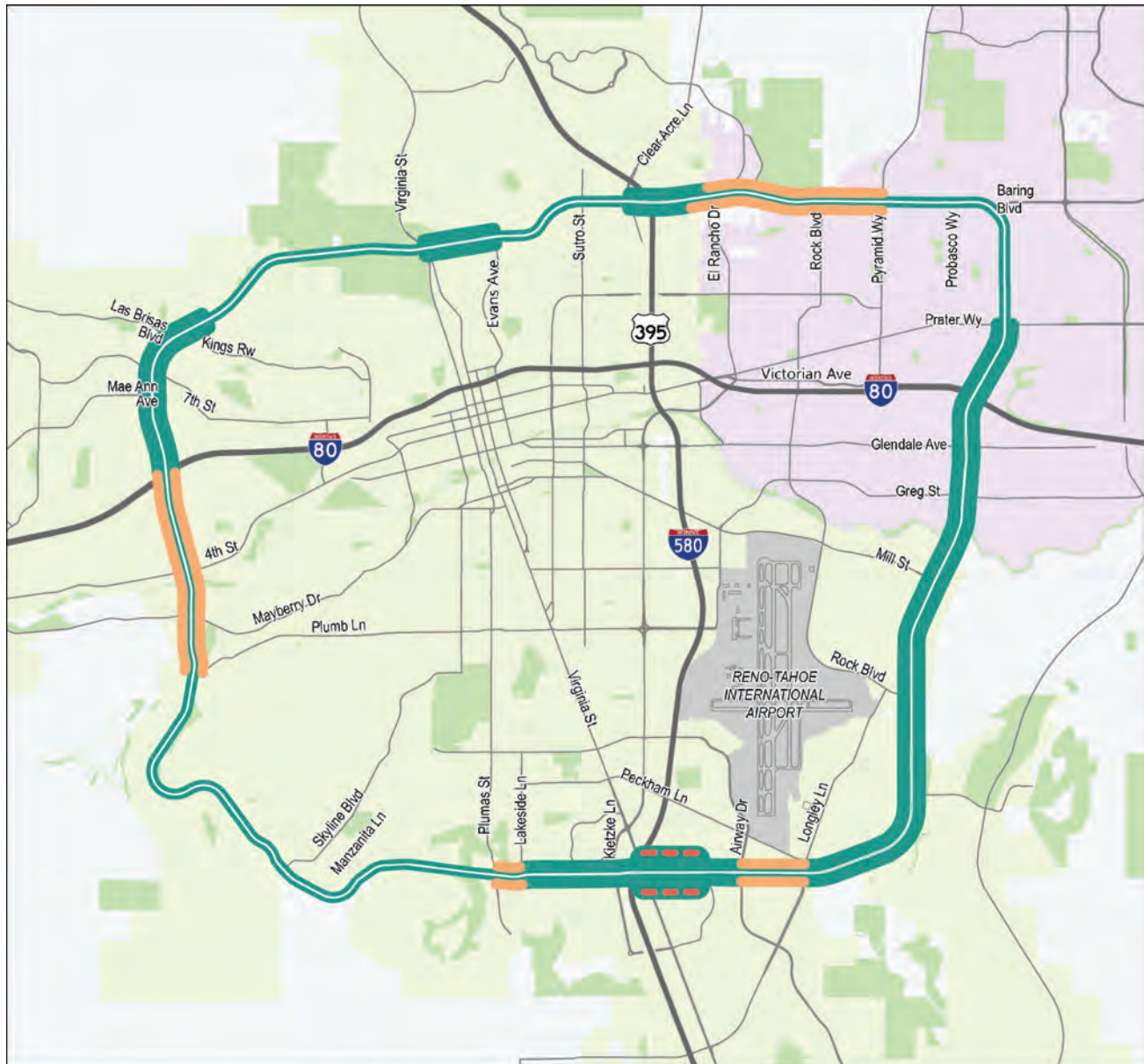
#### MCCARRAN BOULEVARD INTERSECTIONS

0 0.5 1 2 Miles



# Travel Lane Recommendations

The map below shows recommended changes to existing travel lanes along McCarran Boulevard (i.e., lane additions or reductions). There are three locations with proposed changes – West McCarran, North McCarran, and South McCarran.



- Freeway
- Major Street
- City of Reno
- City of Sparks
- Parks
- Two Existing Lanes
- Three Existing Lanes
- Four Existing Lanes
- Potential Lane Addition
- Potential Lane Reduction

MCCARRAN BOULEVARD CORRIDOR STUDY

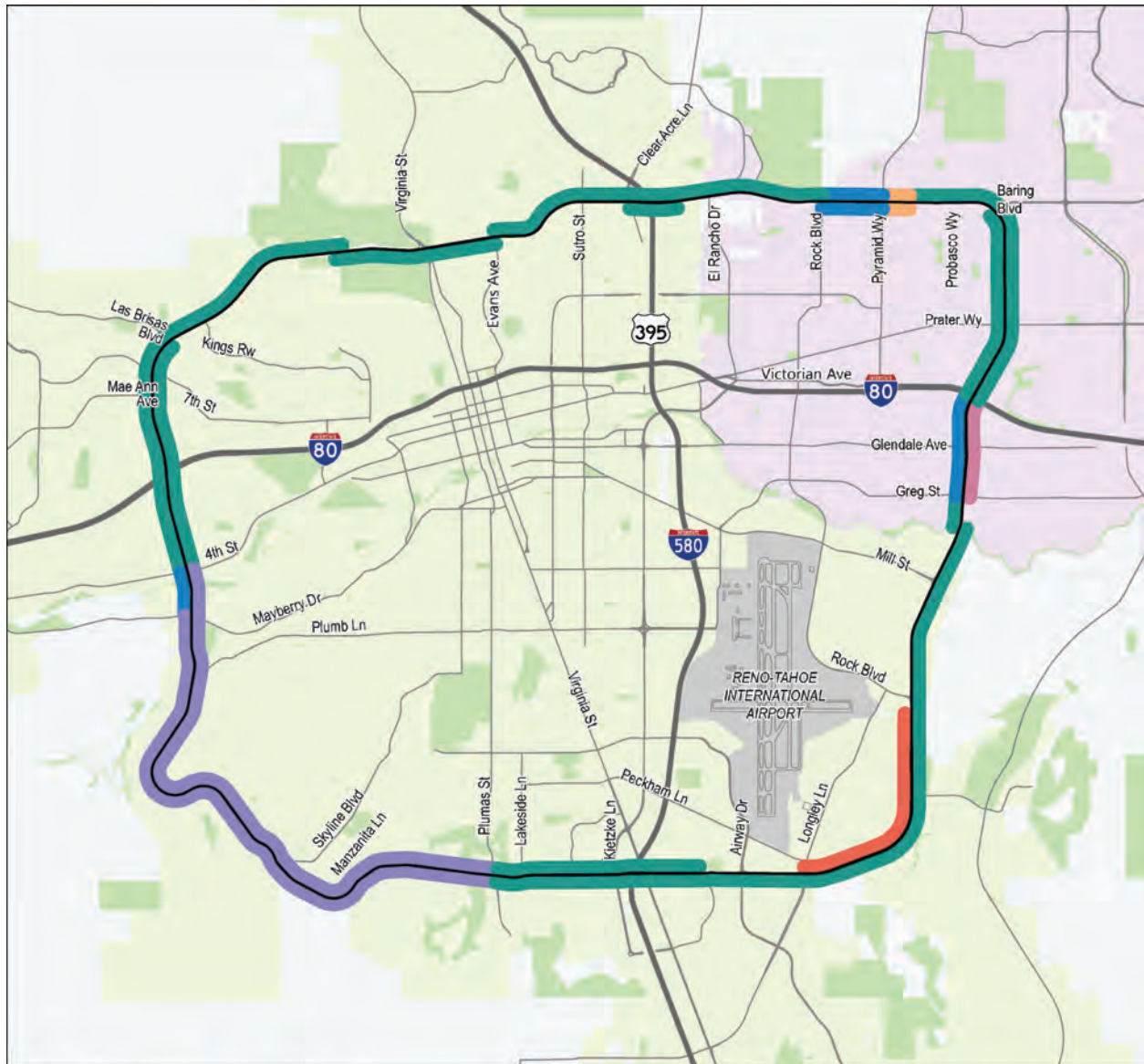
0 0.5 1 2 Miles





# Proposed Multimodal Network

The map below shows the proposed multimodal network for McCarran Boulevard, including a combination of sidewalks, bike lanes, buffered/protected bike lanes, and protected shared use paths. Facility types have been chosen based on surrounding land uses, roadway configuration, and space availability.



- |                |                                  |
|----------------|----------------------------------|
| Freeway        | Sidewalk                         |
| Major Street   | Bike Lane                        |
| City of Reno   | Buffered Bike Lane               |
| City of Sparks | Sidewalk and Bike Lane           |
| Parks          | Sidewalk and Protected Bike Lane |
|                | Protected Shared Use Path        |

MCCARRAN BOULEVARD CORRIDOR STUDY

0 0.5 1 2 Miles



# McCarran Boulevard Corridor Study - Public Comment Period (Fall 2022)

Comment Category	Comment	Reply
Bike Concern	<p>Thank you for the analysis and sharing info for feedback.</p> <p>My comments are cycling-centric. I cycle every day for work, shopping/appointments, and pleasure. My range normally is from west Reno east to Sparks and south to Neil Rd. Rarely north of 80 except when out to Verdi. I avoid McCarran because bike lanes that share the roadway surface are unsafe and have inadequate space for the climbs in the SW quadrant of McCarran. I do not ride on sidewalks unless they are designed multi-use. "Unsafe" needs definition because it is just an emotion otherwise.</p> <p>First, with bike lanes sharing the roadway surface speed differentials, compounded by distracted drivers and inevitable sudden incidents in heavier, highspeed traffic is nerve racking for a cyclist. Let's not even talk about a big truck blowing by at 50-60mph. Only the most experienced, or worse, inexperienced(vulnerable), cyclist rides McCarran's roadway surface bike lanes.</p> <p>Second, heavy, high speed traffic pushes debris into roadway bike lanes. This is true even on Mayberry and Plumb. This has two impacts. First, it can impact bike control either hitting something or trying to avoid it. I find that control issues can also compound in roadway bike lanes because we love AC overlays that raise pavement above concrete gutter edges creating an inch or so lip parallel to travel direction. If you get in the gutter on an overlaid road, getting out takes some skill. The second impact of this debris is risk of flatting. Flats dissuade riders from certain areas, and certainly make it harder for new riders to stay enthusiastic and stick with it.</p> <p>Third, there is growing evidence that people driving cars have little respect for road surface bike lanes. They use them for parking and passing, turning right and deliveries. See the recent „red cup“ test at Reno HS or ride the California Ave hilltop. Plus, the odd driver that intentionally harasses cyclists for being in „their“ space.</p> <p>A great example of many of my points is California Ave between Booth and Newlands Cir. It's great on the separated path up from Booth and uncomfortable on the roadway surface lane downhill. You can observe all the hazards I mentioned eastbound, and the powerful difference a separate path makes.</p> <p>Here's what I think I am saying. Roadway surface bike lanes on most roads, especially like McCarran, won't grow ridership. It placates the people crying for more but it's really building a bridge to nowhere for a few. Either build a separated, protected multi-use path or go somewhere else with the money to build a quality path that actually grows uses and give just a fraction of car space back to people at a fractional cost. Car lanes cost millions; for a fraction of that build a non-car lane.</p>	<p>In general the recommended improvements include providing shared use path, and separated if possible, along the corridor with only a few area of exceptions.</p>
Bike Concern	<p>I have read that there is a plan to install protected bike paths along McCarran Blvd. That's great! However, the planned use of "v" grooves is not going to make me feel safe riding my bike on McCarran where cars and trucks are driving 50+mph. Here are some better approaches to protecting cyclists. Please consider something like one of these examples. [see images in email]</p>	<p>Detailed design issues for the proposed bike paths or shared use paths will be developed as proposed project are advanced and refined. Additional opportunities for public comment will be available to provide more details. No current direction is being recommended in this study for use of "v" grooves.</p>
Congestion	<p>I welcome improvements to the McCarran Blvd. ring road. I note that more bike lanes are planned. While I agree that bikes should be better protected on our roads, limiting McCarran Blvd's improvements to more lanes and bikes does nothing to fight congestion or climate change. There are not enough bike riders in Reno to make any difference, and 90% of the time the bike lanes will be empty - as they are now in the rest of the region. The McCarran Blvd. improvement project should be done in a coordinated fashion with a public transportation assessment, and should include priority for public buses (including traffic light priority) and a plan to modify or introduce new bus services. McCarran can host limited stop or express services, whether operating as RAPID lines or as conventional limited stop services.</p> <p>One of the required sign offs to this plan should be the Director of Public Transportation.</p>	<p>This study did coordinate with RTC Public Transportation and Operations on any current transit needs or gaps. The RTC TOPS report provides a detailed strategy for developing the public transit system going forward. A copy of the report can be found at <a href="https://www.rtcwashoe.com/public-transportation/tops/">https://www.rtcwashoe.com/public-transportation/tops/</a></p>
Bike Concern	<p>I am writing to comment that I expect, in the 21st Century, in this country, that a major transportation arterial in the Truckee Meadows is the foundation of an active, spreading, non-auto transportation network. As we now face an electrified bicycling future in the present and going forward, there will be challenges from that reality, but the benefits are known by removing vehicle trips by car and truck, as often as is possible, and a protected, MAINTAINED, cycle path is the backbone of this future.</p> <p>For the ENTIRE length of McCarran Boulevard. I am stuck now in the cycling backwater of north valleys, and as such, face daily minimal connection to the Truckee Meadows on safe, maintained bicycle lanes, but a marquee design of protected bike travel the entire length of McCarran is a step forward to acknowledging that people do, and will travel by other ways than cars and trucks, from the Truckee Meadows north of McCarran Boulevard, and therefore benefit the wider areas of north valleys, Sparks, Spanish Springs, and south Reno residents.</p> <p>With a distance of 21 miles, there is the definite opportunity, going forward, of creating a community wide, annual celebration of bicycling and alternative transportation travel, should people gather with a positive, open view of this event. Look at how the Lake Tahoe Ride is a yearly celebration and international attraction for cyclists of all ages and abilities...there is NO reason, with a sensibly designed bicycle infrastructure design on McCarran Boulevard, a similar annual event couldn't be conceived and promoted. The first step though, is to build a safe for all ages cycling route around McCarran Boulevard.</p>	<p>RTC is committed to providing safe alternatives for all users and developing active transportation opportunities. Recommendations of providing shared use path opportunities within the corridor have been included in this study.</p>

Comment Category	Comment	Reply
Bike Concern	<p>Protected paths along the entire corridor should be made of concrete (longer lasting) and be protected by a hardened barrier similar to Veteran's Parkway between Glendale and I-80. A V-shaped gutter leading to an asphalt bike path as is used on the Oddie-Wells project is not a protected path. The bike paths should not double as emergency vehicle lanes. If an emergency lane is needed, it should be in addition to the protected bike path. Also, one of the most desirable and important locations for a protected path is the southwest side of the corridor where you plan to install a buffered (See the red oval in the image below). This section of McCarran is highly desirable for cyclists for recreational and commuting purposes. The communities at the top of McCarran are high bicycle-use communities and enjoy recreating and commuting using both analog and electric bicycles. People who live in higher elevations should also enjoy access to safe alternative transportation routes. This area is also ideal for a consistently protected path on one or both sides of the road. Additionally, to follow FHWA Bikeway Selection Guidelines, the speeds on this section of McCarran require the installation of a protected bike path. Please follow federal standards according to the aforementioned guide. It is imperative that we demonstrate that we are following federal standards if we are going to be a bicycle-friendly community and encourage more healthy and sustainable transportation.</p>	<p>Detailed design issues for the proposed bike paths or shared use paths will be developed as proposed project are advanced and refined. Addition opportunities for public comment will be available to provide more details. No current direction is being recommended in this study for use of "v" grooves nor has the type of path material been decided. FHWA Bikeway Selection Guidelines will be incorporated into final design as the projects advance.</p>
Bike Concern	<p>I am an "instructor" at OLLI / UNR. I lead a semi-weekly bike riding group for OLLI, (we are all over 50 years old). I have lived mainly in Sparks since 1988. I use my bicycles for nearby shopping trips, for riding to nearby events, and for general recreation. I LOVE the bike paths on McCarran from I-80 south to Longley lane.</p> <p>McCarran Blvd between Plumb Lane and Plumas is two giant flipping super challenging gut busting hills on each end. The one shopping center at the center is all steep hills all around, no place for regular riding. My opinion is that the only bicyclists the section between Plumb and Plumas is a tiny subset of extra fit extra fast spandex wearing hard exercising bike racers and wanna be racers.</p> <p>Fast fit racers don't need protected bike paths. They hate slow riders in paths and avoid paths where there is a white stripe bike lane alternative. Or they ride the paths but complain mightily about the slower riders and walkers not staying out of their way.</p> <p>Less fit more "regular" recreational and commuting bike riders try to stay on the flattest routes possible, and avoid climbing big hills and fast moving traffic as much as possible. That means "regular" riders don't do the whole McCarran ring, they stick to the flat areas.</p> <p>So I suggest you spend your money on the flatter parts of the Truckee Meadows area, and areas with shopping or recreation like destinations that are at least flatish to the nearby residents.</p>	<p>No additional response required.</p>
Bike Concern	<p>Protected paths along the entire corridor should be made of concrete (longer lasting) and be protected by a hardened barrier similar to Veteran's Parkway between Glendale and I-80. A v-shaped gutter leading to an asphalt bike path as is used on the Oddie-Wells project is not a protected path. The bike paths should not double as emergency vehicle lanes. If an emergency lane is needed, it should be in addition to the protected bike path. Also, one of the most desirable and important locations for a protected path is the southwest side of the corridor where you plan to install a buffered (See the red oval in the image below). This section of McCarran is highly desirable for cyclists for recreational and commuting purposes. The communities at the top of McCarran are high bicycle-use communities and enjoy recreating and commuting using both analog and electric bicycles. People who live in higher elevations should also enjoy access to safe alternative transportation routes. This area is also ideal for a consistently protected path on one or both sides of the road. Additionally, to follow FHWA Bikeway Selection Guidelines, the speeds on this section of McCarran require the installation of a protected bike path. Please follow federal standards according to the aforementioned guide. It is imperative that we demonstrate that we are following federal standards if we are going to be a bicycle-friendly community and encourage more healthy and sustainable transportation</p>	<p>Detailed design issues for the proposed bike paths or shared use paths will be developed as proposed project are advanced and refined. Addition opportunities for public comment will be available to provide more details. No current direction is being recommended in this study for use of "v" grooves nor has the type of path material been decided. FHWA Bikeway Selection Guidelines will be incorporated into final design as the projects advance.</p>
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Bike Concern	<p>RTC, please follow federal standards and DO NOT replace the planned buffered path on McCarran with a protected path to be consistent along the entire corridor.</p> <p>Regional roads currently fail federal safety and maintenance standards and resources must be dedicated to making our roads safer for registered vehicles.</p>	<p>In general the recommended improvements include providing shared use path, and separated if possible, along the corridor with only a few area of exceptions.</p>

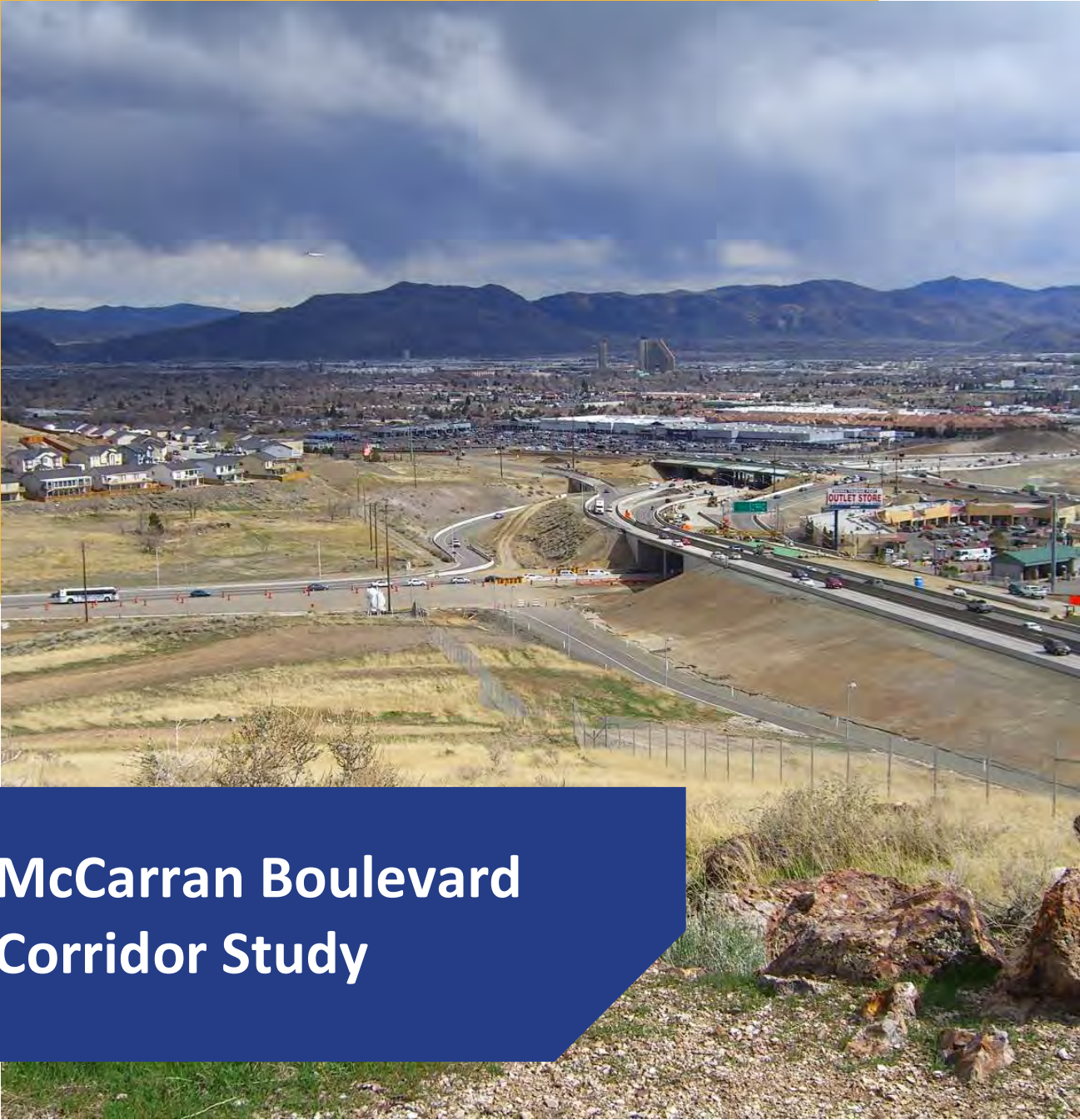


Comment Category	Comment	Reply
Bike Concern	I'm sure you thought I was hyperbolic, or exaggerating. About motorists using the bike lane on El Rancho. This. Every. Day. [see email for images]	RTC is committed to providing safe alternatives for all users and encouraging people to see active transportation opportunities. Recommendations of providing shared use path opportunities within the corridor have been included in this study.
Safety	<p>My name is Phillip Weston. I have been a lifelong resident for 35 years now, slowly seeing the region grow, using McCarran Blvd as part of my daily route to schools and current/past jobs. I'd like to bring to attention several sore spots I've noticed in certain sections of this road.</p> <ol style="list-style-type: none"> <li>1. The abrupt slow down of traffic to make right turns in 50mph zones such as at Las Brisas is very disruptive. Drivers not paying attention no doubt risk hitting or jamming up traffic as the result of slow turn takers. We need separate right turn lanes to allow traffic to be unimpeded.</li> <li>2. People still continue to make illegal right turns on I-80 West to W. McCarran northbound and 395 North to N. McCarran eastbound. We need some more appropriate signage/red directional arrows or markings to dissuade people from making right turns or inserting themselves in front of speeding traffic to peek around obstacles.</li> <li>3. The right turn at Leadership Parkway across from Keystone is designed in such a way that people who want to make an illegal left turn at the intersection are doing so by winding through the left turn lane and flipping an immediate U turn onto eastbound North McCarran. I've witnessed near misses because people don't want to drive further down the road to make their legal U turn. Suggestion would be to elongate the concrete median to dissuade people from risking the turn.</li> <li>4. The intersection of South Virginia and South McCarran going west bound is particularly unsafe. There is one noted sign in the right turn lane to yield to vehicles on South Virginia making U turns to go to the freeway or the shopping center adjacent to it. If one is not familiar with the area, it is easy to miss that one sign and attempt a right turn in the middle of a long series of U turns almost causing a head on collision. This is a daily occurrence, causes road rage, and impedes the flow of traffic. That intersection may need lighted signals with red right directional arrows or more signage to cut down on this behavior.</li> </ol> <p>These are mainly safety related issues. Hopefully these points are considered for any future modifications to the road.</p>	<p>1. Providing dedicated right turns at all intersections can be cost prohibitive due to right-of-way acquisition or other impacts. Where warranted to maintain signalized intersection operations dedicated turn pockets have been provided. As recommended intersection and widening improvements are advanced opportunities for dedicated right turn pockets can continue to be explored. 2. Additional signage can create more confusion and also result in sign clutter in which drivers ignore signs. Signage must also remain compliant with the Manual on Uniform Traffic Control Devices (MUTCD). 3. This area will be evaluated in details for these as part of a future safety improvement project in this area. 4. Per driving laws all right turn on red traffic is to yield right-of-way to left turn green light traffic making a u-turn. Providing a red arrow could impact the ability for right turn on reds which would degrade intersection operations. Opportunities for additional signage can be explored, however, a balance must be struck to maintain compliance with Manual on Uniform Traffic Control Devices (MUTCD) requirements and avoiding sign clutter of too many signs.</p>
Bike Concern	I find it interesting that public input indicated that a bicycle lane is supposedly needed in the McCarran southwest corridor. We use McCarran as our major throughway, and seldom do we see bicycles along that route! I wonder if road bike groups loaded the comments, since the public comment period was not well advertised (this draft report is the first I've even heard about the effort). This area could use additional right-turn lanes at Caughlin Ranch and Lakeside. It does not require protected bike lanes, which will only exacerbate traffic.	Public comment periods were advertised via social media, press releases, and on "The Road Ahead" on KOLO 8.
Lighting	Please fix the lights. McCarran is practically a highway, yet a drivers is almost guaranteed to hit every single red light. It's so bad it seems like it's intentional. Random lights would be better.	RTC continues working to improve signal timing progression.
Bike Concern	Thank you for making the draft study on McCarran available. One aspect that I particularly support is the proposed buffered bicycle lanes between Plumas Street and 4th Street (South and West McCarran, I think). That stretch has two long and relatively steep hills, so cyclists are either going very slow or fast. I frequently ride that stretch on my bicycle and a buffered lane would make me and others feel more safe. There is a lot of congestion between Plumb Lane and I-80 (again, South and West McCarran), so widening the road there may make sense to ease that congestion. If that is done, the buffered cycle lane would be even more necessary. I think the speed limits along McCarran are ok. The problem isn't the speed limits but that fact that people ignore them and drive too fast. More traffic enforcement is needed, but of course that is not the RTC's responsibility.	No additional response required.
Congestion	<p>At busy times, there is often a traffic backup and slowdown on S. McCarran between Plumas and Kietzke. (Both directions, depending on the time of day.) This is one of the worst bottlenecks on the loop. With drivers making quick lane changes here, it's also dangerous.</p> <p>Why would you reduce lanes near Meadowood Mall? This is a high-traffic area. In fact, there's often a backup in the EB left-turn lane at 580 from traffic waiting to get on 580-N.</p>	Proposed recommendations include widening between Lakeside and Plumas in an effort to reduce congestion in this area. Near Meadowood Mall, traffic is higher however, the fourth lanes may not be used effectively and could provide opportunity for other transportation modes in this area to also help reduce traffic volumes. Lane reductions are not proposed west of South Virginia Street.
Population	I drive McCarran between Sparks and I-80 every day. The area that concerns me most is the wear between Sutro and North Virginia, next to UNR. It is so badly rutted and needs to be replaced.	RTC and NDOT continuously monitor and evaluation pavement conditions. Rehabilitation projects are then prioritized for repair.



# Cost Estimate

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# McCarran Boulevard Corridor Study

## Cost Estimates

December 2022

Prepared by CA Group and Parametrix



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# 1 - INTRODUCTION

## Cost Estimate Overview

Planning level cost estimates were developed for the corridor improvement recommendations. The planning level estimates were developed based on 2022 dollars. Planning level cost estimates are considered “all-in” estimates which would include design and construction costs. Utility relocation and right-of-way acquisition costs are also considered but have a higher level of uncertainty due to unknowns such as prior rights and property escalation.

The estimates identified for the proposed recommendations are to be used to provide a general idea of order of magnitude costs to be included in short and long-term planning documents such as the State Transportation Improvement Plan (STIP) or Regional Transportation Plan (RTP). As the recommendations are progressed into the NEPA and preliminary design phase these project costs and overall scope will become more defined.

Estimates were developed by taking into consideration quantitative elements such as providing twelve-feet of new pavement, ten- foot shared-use path, or other quantifiable measurements. Assumed pavement sections were then utilized to provide paving section quantities such as plantmix bituminous surface and aggregate base. These quantitative items provide an approximate quantity in which a unit price is utilized to develop an engineer’s estimate based on average current bid tab unit prices. Percentage based costs are then utilized for many elements such as drainage, traffic control, signing and striping, lighting, and landscaping/aesthetics. Soft project costs such as preliminary engineering and construction engineering are also percentage based.



## 2 – RECOMMENDATION ESTIMATES

### Roadway Widening

#### Longley to Airway

Roadway widening from Longley Lane to Airway Drive would widen McCarran from two lanes in each direction to three lanes in each direction. Improvements would also include new curb and gutter, median island, median curb, and shared use path on the south side. Anticipated project cost would be from \$4.5-\$5.5 million.

#### McCarran Boulevard Widening - Longley to Airway

Description	Quantity	Cost per Unit	Unit Total
REMOVAL OF BITUMINOUS SURFACE (COLD MILLING)	15600 SQYD	\$ 2.00	\$ 31,200.00
ROADWAY EXCAVATION	4800 CUYD	\$ 22.50	\$ 108,000.00
TYPE 2 CLASS B AGGREGATE BASE	6065 TON	\$ 35.00	\$ 212,268.00
PLANTMIX SURFACING (TYPE 2C)(WET)	4735 TON	\$ 105.00	\$ 497,154.00
PLANTMIX BITUMINOUS OPEN-GRADED SURFACE AGGREGATE (3/8-INCH)	2067 TON	\$ 120.00	\$ 248,064.00
PRIME COAT	7200 SQYD	\$ 2.00	\$ 14,400.00
CLASS A CONCRETE (ISLAND PAVING)	500 CUYD	\$ 220.00	\$ 110,000.00
CLASS A CONCRETE CURB AND GUTTER (TYPE 2)	5400 LINFT	\$ 25.00	\$ 135,000.00
CLASS A CONCRETE CURB AND GUTTER (TYPE 4)	0 LINFT	\$ 25.00	\$ -
CLASS A CONCRETE CURB AND GUTTER (TYPE 5)	5400 LINFT	\$ 40.00	\$ 216,000.00
CLASS A CONCRETE CURB AND GUTTER (TYPE 8)	0 LINFT	\$ 40.00	\$ -
CLASS A CONCRETE SIDEWALK	3000 SQYD	\$ 55.00	\$ 165,000.00
SIGNAL SYSTEM MODIFICATION	1 EACH	\$ 500,000.00	\$ 500,000.00
Sub-Total:			\$2,237,086
Drainage (30%):			\$671,126
Landscaping (3%):			\$67,113
Lighting (3%):			\$67,113
Signing and Striping (5%):			\$111,854
Traffic Control (7%):			\$156,596
Miscellaneous Item Allowance (15%):			\$335,563
Bid Item Sub-Total			\$3,646,450
Mobilization (7%):			\$255,252
Contract Total:			\$3,901,702
Construction Engineering (7%):			\$273,119
Preliminary Engineering (10%):			\$390,170
Construction Contingency (3%):			\$117,051
Right-of-Way Acquisition:			\$0
Utility Relocation:			\$100,000
Total:			\$4,782,042

## Lakeside Drive to Plumas Street

Roadway widening from Lakeside Drive to Plumas Street would widen McCarran from two lanes in each direction to three lanes in each direction. Improvements would also include new curb and gutter, median island, median curb, signal modifications, and shared use path on both sides. Anticipated project cost would be from \$6.5-\$7.5 million. Right-of-way acquisition would also be required as part of this project.

### McCarran Boulevard Widening - Lakeside to Plumas

Description	Quantity	Cost per Unit	Unit Total
REMOVAL OF BITUMINOUS SURFACE (COLD MILLING)	18489 SQYD	\$ 2.00	\$ 36,977.78
ROADWAY EXCAVATION	2844 CUYD	\$ 22.50	\$ 64,000.00
TYPE 2 CLASS B AGGREGATE BASE	3594 TON	\$ 35.00	\$ 125,788.44
PLANTMIX SURFACING (TYPE 2C)(WET)	3801 TON	\$ 105.00	\$ 399,118.22
PLANTMIX BITUMINOUS OPEN-GRADED SURFACE AGGREGATE (3/8-INCH)	2450 TON	\$ 120.00	\$ 294,001.78
PRIME COAT	4267 SQYD	\$ 2.00	\$ 8,533.33
CLASS A CONCRETE (ISLAND PAVING)	296 CUYD	\$ 220.00	\$ 65,185.19
CLASS A CONCRETE CURB AND GUTTER (TYPE 2)	3200 LINFT	\$ 25.00	\$ 80,000.00
CLASS A CONCRETE CURB AND GUTTER (TYPE 4)	0 LINFT	\$ 25.00	\$ -
CLASS A CONCRETE CURB AND GUTTER (TYPE 5)	3200 LINFT	\$ 40.00	\$ 128,000.00
CLASS A CONCRETE CURB AND GUTTER (TYPE 8)	0 LINFT	\$ 40.00	\$ -
CLASS A CONCRETE SIDEWALK	3556 SQYD	\$ 55.00	\$ 195,555.56
SIGNAL SYSTEM MODIFICATION	2 EACH	\$ 500,000.00	\$ 1,000,000.00
Sub-Total:			\$2,397,160
Drainage (30%):			\$719,148
Landscaping (10%):			\$239,716
Lighting (3%):			\$71,915
Signing and Striping (5%):			\$119,858
Traffic Control (7%):			\$167,801
Miscellaneous Item Allowance (15%):			\$359,574
Bid Item Sub-Total			\$4,075,173
Mobilization (7%):			\$285,262
Contract Total:			\$4,360,435
Construction Engineering (7%):			\$305,230
Preliminary Engineering (10%):			\$436,043
Construction Contingency (3%):			\$130,813
Right-of-Way Acquisition:			\$1,000,000
Utility Relocation:			\$250,000
<b>Total:</b>			<b>\$6,482,521</b>

## Plumb Lane to I-80 (West)

Roadway widening from Plumb Lane to the I-80 Interchange with West McCarran Boulevard would widen McCarran from two lanes in each direction to three lanes in each direction. Improvements would also include new curb and gutter, median island, median curb, signal modifications, Truckee River Bridge widening and shared use path on both sides. Anticipated project cost would be from \$20-\$22 million. Right-of-way acquisition would most likely be minor.

### McCarran Boulevard Widening - Plumb to I-80 West

Description	Quantity	Cost per Unit	Unit Total
REMOVAL OF BITUMINOUS SURFACE (COLD MILLING)	49111 SQYD	\$ 2.00	\$ 98,222.22
ROADWAY EXCAVATION	7556 CUYD	\$ 22.50	\$ 170,000.00
TYPE 2 CLASS B AGGREGATE BASE	9546 TON	\$ 35.00	\$ 334,125.56
PLANTMIX SURFACING (TYPE 2C)(WET)	10097 TON	\$ 105.00	\$ 1,060,157.78
PLANTMIX BITUMINOUS OPEN-GRADED SURFACE AGGREGATE (3/8-INCH)	6508 TON	\$ 120.00	\$ 780,942.22
PRIME COAT	11333 SQYD	\$ 2.00	\$ 22,666.67
CLASS A CONCRETE (ISLAND PAVING)	0 CUYD	\$ 220.00	\$ -
CLASS A CONCRETE CURB AND GUTTER (TYPE 2)	0 LINFT	\$ 25.00	\$ -
CLASS A CONCRETE CURB AND GUTTER (TYPE 4)	0 LINFT	\$ 25.00	\$ -
CLASS A CONCRETE CURB AND GUTTER (TYPE 5)	17000 LINFT	\$ 40.00	\$ 680,000.00
CLASS A CONCRETE CURB AND GUTTER (TYPE 8)	0 LINFT	\$ 40.00	\$ -
CLASS A CONCRETE SIDEWALK	18883 SQYD	\$ 55.00	\$ 1,038,888.89
SIGNAL SYSTEM MODIFICATION	4 EACH	\$ 500,000.00	\$ 2,000,000.00
WIDEN BRIDGE STRUCTURE	13200 SQFT	\$ 300.00	\$ 3,960,000.00
Sub-Total:			\$10,145,003
Drainage (15%):			\$1,521,751
Landscaping (3%):			\$304,350
Lighting (3%):			\$304,350
Signing and Striping (5%):			\$507,250
Traffic Control (7%):			\$710,150
Miscellaneous Item Allowance (15%):			\$1,521,751
Bid Item Sub-Total			\$15,014,605
Mobilization (7%):			\$1,051,022
Contract Total:			\$16,065,627
Construction Engineering (7%):			\$1,124,594
Preliminary Engineering (10%):			\$1,606,563
Construction Contingency (3%):			\$481,969
Right-of-Way Acquisition:			\$100,000
Utility Relocation:			\$500,000
<b>Total:</b>			<b>\$19,878,753</b>

## El Rancho Drive to Pyramid Way

Roadway widening from El Rancho Drive to Pyramid Way would widen McCarran from two lanes in each direction to three lanes in each direction. Improvements would also include new curb and gutter, median island, median curb, signal modifications, retaining walls, and shared use path on both sides from Rock Boulevard to Pyramid Way and only on the north side from El Rancho Drive to Rock Boulevard. Anticipated project cost would be from \$20-\$22 million. Substantial right-of-way costs would also be anticipated as part of this project.

### McCarran Boulevard Widening - El Rancho Drive - Pyramid Way

Description	Quantity	Cost per Unit	Unit Total
REMOVAL OF BITUMINOUS SURFACE (COLD MILLING)	45644 SQYD	\$ 2.00	\$ 91,288.89
ROADWAY EXCAVATION	14044 CUYD	\$ 22.50	\$ 316,000.00
TYPE 2 CLASS B AGGREGATE BASE	17745 TON	\$ 35.00	\$ 621,080.44
PLANTMIX SURFACING (TYPE 2C)(WET)	13854 TON	\$ 105.00	\$ 1,454,635.78
PLANTMIX BITUMINOUS OPEN-GRADED SURFACE AGGREGATE (3/8-INCH)	3380 TON	\$ 120.00	\$ 405,603.56
PRIME COAT	21067 SQYD	\$ 2.00	\$ 42,133.33
CLASS A CONCRETE (ISLAND PAVING)	0 CUYD	\$ 220.00	\$ -
CLASS A CONCRETE CURB AND GUTTER (TYPE 2)	0 LINFT	\$ 25.00	\$ -
CLASS A CONCRETE CURB AND GUTTER (TYPE 4)	0 LINFT	\$ 25.00	\$ -
CLASS A CONCRETE CURB AND GUTTER (TYPE 5)	15800 LINFT	\$ 40.00	\$ 632,000.00
CLASS A CONCRETE CURB AND GUTTER (TYPE 8)	0 LINFT	\$ 40.00	\$ -
CLASS A CONCRETE SIDEWALK	11667 SQYD	\$ 55.00	\$ 641,666.67
SIGNAL SYSTEM MODIFICATION	4 EACH	\$ 500,000.00	\$ 2,000,000.00
RETAINING WALL	36400 SQFT	\$ 80.00	\$ 2,912,000.00
Sub-Total:			\$9,116,409
Drainage (15%):			\$1,367,461
Landscaping (3%):			\$273,492
Lighting (3%):			\$273,492
Signing and Striping (5%):			\$455,820
Traffic Control (7%):			\$638,149
Miscellaneous Item Allowance (20%):			\$1,823,282
Bid Item Sub-Total			\$13,948,105
Mobilization (7%):			\$976,367
Contract Total:			\$14,924,473
Construction Engineering (7%):			\$1,044,713
Preliminary Engineering (10%):			\$1,492,447
Construction Contingency (3%):			\$447,734
Right-of-Way Acquisition:			\$2,000,000
Utility Relocation:			\$750,000
<b>Total:</b>			<b>\$20,659,367</b>

## Multi-Modal Improvements

Implementation of enhanced multi-modal improvements throughout the corridor can be accomplished through future rehabilitation or widening projects to provide cost-efficiency in terms of project mobilization, overhead, and economy of scale for concrete and aggregate base. However, shared-use path specific projects could also be developed based on current available funding and immediate need.

Coordination with local agencies and NDOT will need to occur regarding maintenance of the new shared-use path facilities. These improvements are intended to be separated from mainline roadway pavement and would require additional maintenance especially in terms of snow removal and overall cleaning. This may require acquisition of new equipment, training of operators, and additional resources. These additional costs could reasonably be assumed to range from \$10,000 - \$20,000 per year per mile of shared use path.

Another key element that would need to be evaluated as project development progresses is the type of material to be utilized for the proposed shared use paths. Concrete or asphalt pavement will be the two options for surface treatments. Concrete will have a higher capital cost, however, long-term maintenance would be less while asphalt would lower capital costs but higher overall long-term maintenance.

Based on current \$2022 costs typical capital costs for a 10-foot concrete shared use path would be approximately \$450,000 per mile while a 10-foot asphalt pavement shared use path would be \$225,000 per mile. These costs do not include any right-of-way or utility relocation costs.

## Spot Intersection Improvements

Spot improvements recommendations range from providing an additional dedicated left or right turn lane to larger scale improvements such as providing additional through lanes and dedicated lanes. Cost uncertainties for these types of projects often entail right-of-way needs and utility relocations. Costs on spot intersection improvements also tend to grow as the project is developed due to maintenance, drainage, and other issues which are addressed with the spot intersection projects. When possible, it is highly recommended that larger scale intersection spot improvements requiring additional through lanes be included as a part of a larger roadway widening project for both cost-efficiency and overall traffic operations. Widening costs presented earlier in this report do include intersection enhancements, however, the following are planning level estimates should spot intersection improvements be made individually.

\$750,000 - \$1,250,000

- Prater Way
- Mira Loma Drive
- Mae Anne Avenue
- 7<sup>th</sup> Street
- Sutro Street

\$4 million - \$6 million

- Lakeside Drive
- Cashill Boulevard
- Plumb Lane
- Mayberry Drive
- South Virginia Street
- 4<sup>th</sup> Street
- Clear Acre Lane