# Final Traffic Impact Study for the Dry Creek Commons Project

Prepared for the City of Healdsburg

Submitted by
**W-Trans**

April 8, 2022

TRAFFIC ENGINEERING
TRANSPORTATION PLANNING
*Balancing Functionality and Livability since 1995*
w-trans.com

This page intentionally left blank

# Table of Contents

**Appendices**

A. Collision Rate Calculations
B. U-Turn Exhibit
C. Intersection Level of Service Calculations

# Executive Summary

The Dry Creek Commons Project is an infill development of 58 apartment units to be constructed on a vacant parcel located at 155 Dry Creek Road in the City of Healdsburg. All the apartment units are proposed to be affordable except for one manager's unit. The project would be expected to generate in an average of 263 daily trips including 21 a.m. peak hour trips and 23 p.m. peak hour trips.

The existing pedestrian facilities in the project vicinity include generally continuous sidewalk coverage overall with several gaps in the sidewalk network, including the gap along the project frontage; however, as this sidewalk gap would be filled as part of the project and connect to adjacent improvements, the pedestrian facilities serving the project site would be adequate upon completion of the project. The existing bicycle facilities are adequate to serve the trips to and from the project site. Bicycle parking would be provided on-site, including outdoors and within a secure indoor bicycle room. The existing transit facilities are adequate to serve trips to and from the project site.

Under OPR guidance, the proposed affordable residential development in infill location would screen out with an anticipated less-than-significant impact on VMT.

The project site would be accessed via a single driveway on Dry Creek Road. Adequate stopping sight distance is available at the proposed driveway location. However, to maintain adequate sight lines, it is suggested that the placement of signs or tall landscaping near the driveway be avoided. Due to the presence of a median island blocking access to the two-way left-turn lane on Dry Creek Road it is recommended that egress be limited to right turns only. It is further suggested that the City consider allowing u-turns from westbound Dry Creek Road at Grove Street to accommodate drivers wishing to travel east from the project site.

The project would include construction of the second westbound travel lane on Dry Creek Road, closing an existing gap as this lane exists on either side of the site. As part of the project's off-site improvements the striping and signing on Dry Creek Road should be modified to accommodate the change in geometrics. Further modifications to the existing signing and striping may be warranted to take use of existing roadway width to move the westbound lanes to the north slightly to provide sufficient width to allow u-turns at Dry Creek Road/Grove Street.

The proposed on-site circulation and access design are expected to comply with City design standards and the proposed driveway would be connected to the parcel on the north of the site to provide emergency vehicle access; therefore, emergency access is expected to function acceptably.

Although not relevant to the CEQA review process, operations were evaluated at nearby intersections to assess the project's compliance with General Plan policies. Analysis indicates that the study intersections along Dry Creek Road, including those at US 101 South Ramps, US 101 North Ramps, Grove Street, and Healdsburg Avenue, would operate acceptably per the applicable City standards under Existing Conditions and Future Conditions with and without the addition of project-generated traffic.

The proposed parking supply of 104 spaces would not meet the City's parking requirements. However, the parking supply is sufficient to meet the anticipated peak demand based on ITE standard rates as well as the requirements under the Density Bonus Law applicable to affordable housing developments.

# Introduction

This report presents an analysis of the potential traffic impacts and adverse operational effects that would be associated with development of a proposed affordable housing project to be located at 155 Dry Creek Road in the City of Healdsburg. The traffic study was completed in accordance with the criteria established by the City of Healdsburg and is consistent with standard traffic engineering techniques.

## Prelude

The purpose of a traffic impact study is to provide City staff and policy makers with data that they can use to make an informed decision regarding the potential transportation impacts of a proposed project, and any associated improvements that would be required to mitigate these impacts to an acceptable level under CEQA, NEPA, the City's General Plan, or other policies. This report provides an analysis of those items that are identified as areas of environmental concern under the California Environmental Quality Act (CEQA) and that, if significant, require an EIR. Impacts associated with access for pedestrians, bicyclists, and to transit; the vehicle miles traveled (VMT) generated by the project; potential safety concerns such as increased queuing in dedicated turn lanes, adequacy of sight distance, need for turn lanes, and need for additional right-of-way controls; and emergency access are addressed in the context of the CEQA criteria. While no longer a part of the CEQA review process, vehicular traffic service levels at key intersections were evaluated for consistency with General Plan policies as well as to meet the requirements of NEPA by determining the number of new trips that the proposed use would be expected to generate, distributing these trips to the surrounding street system based on anticipated travel patterns specific to the proposed project, then analyzing the effect the new traffic would be expected to have on the study intersections and need for improvements to maintain acceptable operation. Adequacy of parking is also addressed as a policy issue.

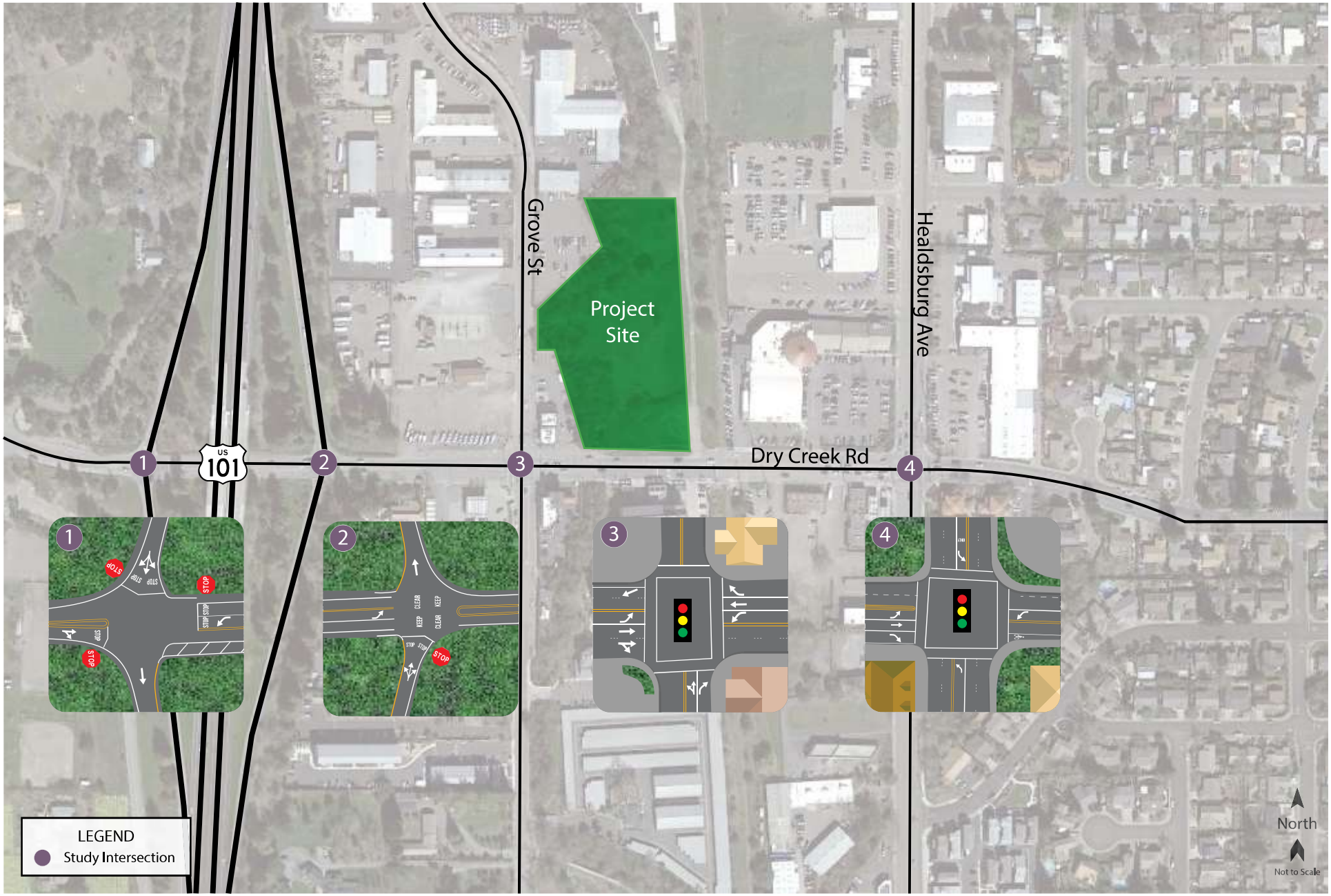
The report is organized to provide background data that supports the various aspects of the analysis, followed by the assessment of CEQA issues and then evaluation of policy-related issues. The CEQA criteria evaluated are as follows.

Would the project:

a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
d) Result in inadequate emergency access?

## Project Profile

The proposed infill project would be located on a currently vacant parcel at 155 Dry Creek Road in the City of Healdsburg. It would include 58 apartment units in two four-story buildings, with all units designated for extremely-low, very-low, and low-income families except for one manager's unit. The location of the project site is shown in Figure 1.




hea077.ai 11/22

Traffic Impact Study for the Dry Creek Commons Project

**Figure 1 – Study Area and Existing Lane Configurations**

# Transportation Setting

## Study Area and Periods

The study area varies depending on the topic. For pedestrian trips it consists of all streets within a half-mile of the project site that would lie along primary routes of pedestrian travel, or those leading to nearby generators or attractors such as Big John's Market and the skate park. For bicycle trips it consists of all streets within one mile of the project site that would lie along primary routes of bicycle travel. For the safety and operational analyses, it consists of the project frontage and the following intersections:

1. US 101 South Ramps/Dry Creek Road
2. US 101 North Ramps/Dry Creek Road
3. Grove Street/Dry Creek Road
4. Healdsburg Avenue/Dry Creek Road-March Avenue

It is noted that there is an existing traffic signal on Dry Creek Road at the SMART multi-use path crossing, and this signal is operated in coordination with the signals on either side of it at Grove Street and Healdsburg Avenue. However, as the signal is activated infrequently during peak hours and there are no other conflicting volumes except pedestrians, this signal can reasonably be expected to operate at well above the City's minimum standard of LOS D. The potential for the pedestrian signal to affect operation at the adjacent signals was, however, accounted for through application of the coordinated timing at these signals.

Operating conditions during the a.m. and p.m. peak periods were evaluated to capture the highest potential impacts for the proposed project as well as the highest volumes on the local transportation network. The morning peak hour occurs between 7:00 and 9:00 a.m. and reflects conditions during the home to work or school commute, while the p.m. peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute.

### Study Intersections

**US 101 South Ramps/Dry Creek Road** is a four-legged all-way stop-controlled intersection; the south leg serves as the US 101 South on-ramp.

**US 101 North Ramps/Dry Creek Road** is a four-legged two-way stop-controlled intersection with stop controls on the northbound off-ramp approach. Because the north leg is a US 101 North on-ramp, there is no southbound approach at this intersection.

**Grove Street/Dry Creek Road** is a four-legged signalized intersection with a protected left-turn phasing on the eastbound and westbound approaches. While Grove Street currently operates with permitted left-turn phasing, plans have been completed to convert operation to split phasing; the left-turn phasing on Dry Creek Road would be simultaneously converted to protected/permitted, with flashing yellow arrows during the "permitted" portion of the operation. Marked crosswalks with pedestrian phasing are available on all legs of the intersection.

**Healdsburg Avenue/Dry Creek Road-March Avenue** is a four-legged signalized intersection with protected left-turn phasing on all approaches. There are marked crosswalks with pedestrian phasing on all legs of the intersection.

The locations of the study intersections and the existing lane configurations and controls are shown in Figure 1.

## Study Roadway

**Dry Creek Road** is an east-west arterial that connects ramps at US 101 to Healdsburg Avenue to the east and Dry Creek Valley to the west. It has two lanes in each direction together with a center turn lane east of US 101 except along the project frontage, where there is only one westbound lane. Dry Creek Road has a speed limit of 30 mph and carries approximately 15,200 vehicles per day. The roadway has continuous sidewalks along the south side east of Grove Street, but sidewalks are missing along the project frontage on the north side of the street.

# Collision History

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates were calculated based on records available from the California Highway Patrol as published in their Statewide Integrated Traffic Records System (SWITRS) reports. The most current five-year period available is August 1, 2016 through July 31, 2021.

As presented in Table 1, the calculated collision rates for the study intersections were compared to average collision rates for similar facilities statewide, as indicated in *2018 Collision Data on California State Highways*, California Department of Transportation (Caltrans). These average rates statewide are for intersections in the same urban environment, with the same number of approaches, and the same controls. The calculated collision rates for all the study intersections were determined to be higher than the statewide average except for the US 101 South Ramps/Dry Creek Road intersection so the collision records were further reviewed. The collision rate calculations are provided in Appendix A.

**Table 1 – Collision Rates for the Study Intersections**

| Study Intersection | Number of Collisions (2016-2021) | Calculated Collision Rate (c/mve) | Statewide Average Collision Rate (c/mve) |
|---|---|---|---|
| 1. US 101S Ramps/Dry Creek Rd | 3 | 0.13 | 0.17 |
| 2. US 101N Ramps/Dry Creek Rd | 6 | **0.19** | 0.14 |
| 3. Grove St/Dry Creek Rd | 15 | **0.42** | 0.24 |
| 4. Healdsburg Ave/Dry Creek Rd-March Ave | 15 | **0.42** | 0.24 |

Note: c/mve = collisions per million vehicles entering; **bold** text = rate is higher than the statewide average

Three of six collisions at US 101 North Ramps/Dry Creek Road were rear-end collisions, two were broadsides and one was a driver that ran off the road. The rate of injuries was 33.3 percent, which is lower than the Statewide average of 46.2 percent. Given the low incidence of injuries as well as the fact that the rate is only marginally above-average, no remedial action is suggested.

The collisions recorded at Grove Street/Dry Creek Road include five sideswipe, four head-on, three broadside, two rear-end, and one hit-object. Four of the crashes involved drivers turning left from Grove Street; implementation of split-phasing for these two approaches as planned would address this pattern of crashes. As 40 percent of crashes involved injuries, which is below the average rate Statewide of 46.9 percent, no further action is suggested.

Out of 15 collisions that occurred at Healdsburg Avenue/Dry Creek Road-March Avenue, there were five rear-end, five broadside, one sideswipe, one hit-object, one head-on, one vehicle-pedestrian, and one other collisions. As no clear pattern of collisions were identified and the injury rate of 26.7 percent was again below the Statewide average of 46.9 percent, no remedial action is recommended.

# Project Data

The project consists of 58 apartment units in two four-story buildings; the project site is currently vacant. It is bounded by the SMART rail line and Big John's Market to the east, the Plank coffee shop to the west, and the Hotel Trio on the south side of Dry Creek Road. Excluding one manager's unit, all the apartment units would be designated for occupation by low-income residents. As part of the project the existing gap in the second westbound lane on Dry Creek would be constructed. The proposed project site plan is shown in Figure 2.

## Trip Generation

The anticipated trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 11th Edition, 2021 for Multi-family Housing (Mid-Rise) (LU #221) based on the buildings having four stories. Based on the application of these rates, the proposed project is expected to generate an average of 263 trips per day, including 21 a.m. peak hour trips and 23 trips during the p.m. peak hour. These results are summarized in Table 2.

**Table 2 – Trip Generation Summary**

| Land Use | Units | Daily | | AM Peak Hour | | | | PM Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Rate | Trips | Rate | Trips | In | Out | Rate | Trips | In | Out |
| Multi-family (mid-rise) | 58 du | 4.54 | 263 | 0.37 | 21 | 4 | 17 | 0.39 | 23 | 14 | 9 |

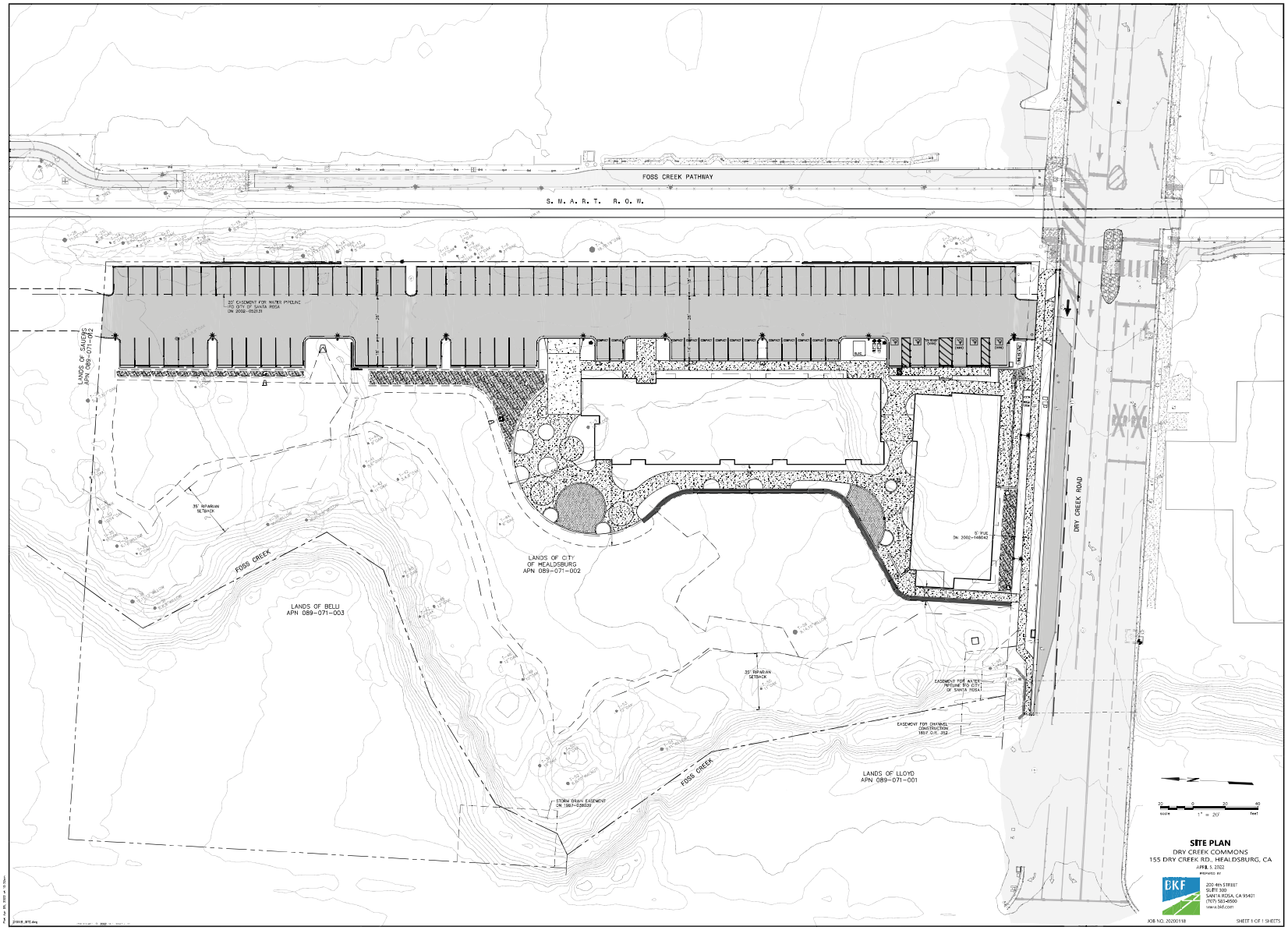
Note: du = dwelling unit

## Trip Distribution

The pattern used to allocate new project trips to the street network was determined by reviewing existing turning movements at the study intersections as well as employment patterns for residents of Healdsburg as indicated by the 2000 Census. The applied assumptions are shown in Table 3.

**Table 3 – Trip Distribution Assumptions**

| Route | Percent |
|---|---|
| US 101 south of Dry Creek Rd | 65 |
| US 101 north of Dry Creek Rd | 2 |
| Grove St south of Dry Creek Rd | 15 |
| Healdsburg Ave south of Dry Creek Rd | 10 |
| March Ave east of Healdsburg Ave | 8 |
| **TOTAL** | **100** |




Source: BKF 4/6

hea077.ai 1/22

**Traffic Impact Study for the Dry Creek Commons Project**

**Figure 2 – Site Plan**

# Circulation System

This section addresses the first bullet point on the CEQA checklist, which relates to the potential for a project to conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

## Pedestrian Facilities

### Existing and Planned Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. In general, a network of sidewalks, crosswalks, pedestrian signals, and curb ramps provide access for pedestrians in the vicinity of the proposed project site; however, a gap in the sidewalk network exists along the project frontage. Existing gaps and obstacles along the connecting roadways impact convenient and continuous access for pedestrians and present safety concerns in those locations where appropriate pedestrian infrastructure would address potential conflict points.

- **Dry Creek Road** – Continuous sidewalk coverage and overhead streetlighting is provided on one or both sides of Dry Creek Road between Grove Street and Healdsburg Avenue, with a gap in the existing facilities along the project frontage. The segment between Grove Street and US 101 does not have sidewalks, except for the south side of the street between US 101 North Ramps and Grove Street. Crosswalks with pedestrian phasing available at the Foss Creek multi-use path crossing as well as at the nearby signalized intersections, including Dry Creek Road/Grove Street and Healdsburg Avenue/ Dry Creek Road-March Avenue.

- **Grove Street** – Sidewalks exist on both sides of Grove Street along the frontages of developed properties north of the Carson Warner Skatepark, but coverage is intermittent south of the skate park. Sidewalks are provided on both sides for most of the segment between Chiquita Road and Grove Court. There is minimal lighting south of Dry Creek Road besides pedestrian scale lighting between Old Rossi Place and overhead streetlights at the roundabout at Grove Street/Farmstand Road.

- **Healdsburg Avenue** – Continuous sidewalk coverage is provided on both sides of Healdsburg Avenue except for a small segment on the west side of Healdsburg Avenue near Sunnyvale Drive. Overhead streetlighting is provided on both sides.

- **Foss Creek Pathway** – The City recently completed an extension of the Foss Creek Pathway (SMART MUP) between Grove Street and the prior terminus south of Dry Creek Road, including a signalized crossing of Dry Creek Road adjacent to the project site. The path currently extends south to Front Street where it is planned to connect across the Russian River along the SMART rail alignment.

A few pedestrian facilities are planned to be added near the project site including benches and shade structures along the Foss Creek Pathway and citywide ADA upgrades.

### Pedestrian Safety

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue for pedestrians. Collision records available from the California Highway Patrol as published in their Statewide Integrated Traffic Records System (SWITRS) reports were reviewed for the most current five-year period available, which was August 1, 2016 through July 31, 2021 at the time of the analysis. During the five-year study period there was one reported pedestrian-involved collision in the study area at Healdsburg Avenue/Dry Creek Road-March Avenue, which occurred between a northbound pedestrian and eastbound driver due to a pedestrian right-

of-way violation. The pedestrian was injured but there is no further information available about this crash. As the existing signal operation includes a pedestrian phase no further improvements are suggested.

### Project Impacts on Pedestrian Facilities

Given the proximity of nearby commercial and recreational destinations surrounding the site, it is reasonable to assume that some project patrons and employees will want to walk, bicycle, and/or use transit for trips from/to the project site. The project would include the construction of a sidewalk along the project frontage, connecting to the existing sidewalk to the east and west as well as the SMART multi-use path (Foss Creek Pathway) that runs along the east side of the tracks.

**Project Site** – Sidewalks do not exist along the project frontage but would be provided as part of the project; these proposed facilities would connect from the parking lot at the Plank coffee shop to the existing sidewalk at the SMART rail crossing. The frontage is to be oriented toward Dry Creek Road and placed moderately close to the back of the sidewalk. The project's landscape design will use plantings to define the edges of sidewalks, incorporate pedestrian paths, outdoor places, landscaping, and lighting, and highlight building entries.

**Finding** – Pedestrian facilities serving the project site will be adequate upon completion of improvements proposed as part of the project.

## Bicycle Facilities

### Existing and Planned Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2017, classifies bikeways into four categories:

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.
- **Class IV Bikeway** – also known as a separated bikeway, a Class IV Bikeway is for the exclusive use of bicycles and includes a separation between the bikeway and the motor vehicle traffic lane. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

Existing facilities in the project area include the Class I Foss Creek Pathway, Class II bike lanes on much of Grove Street and March Avenue east of Healdsburg Avenue, and Class III bicycle routes on Dry Creek Road and Healdsburg Avenue. Class II bike lanes are proposed on Dry Creek Road west of the Healdsburg City Limits and there are plans to extend the Class I Foss Creek Pathway to the northern City limits. Bicyclists ride in the roadway and/or on sidewalks along all other streets within the project study area.

Table 4 summarizes the existing and planned bicycle facilities in the project vicinity, as contained in the Sonoma County Transportation Authority's (SCTA) *Countywide Bicycle and Pedestrian Master Plan*, *Updated Project List 2019*.

| Table 4 – Bicycle Facility Summary | | | | |
|---|---|---|---|---|
| **Status**<br>**Facility** | **Class** | **Length (miles)** | **Begin Point** | **End Point** |
| **Existing** | | | | |
| Foss Creek Pathway | I | 2.41 | Grove St | Front St |
| Grove St | II | 0.58 | Healdsburg Ave | Grove St Curve |
| March Ave | II | 0.49 | Healdsburg Ave | University Ave |
| Healdsburg Ave | III | 0.82 | Parkland Farms Blvd | March Ave |
| Dry Creek Rd | III | 0.17 | Grove St | Healdsburg Ave |
| **Planned** | | | | |
| Foss Creek Pathway | I | 0.92 | Healdsburg City Limits North | Grove St |
| Dry Creek Rd | III | 0.10 | Healdsburg City Limits | Grove St |
| Grove St | II | 0.14 | 1410 Grove St | Dry Creek Rd |
| Grove St | III | 0.90 | Dry Creek Rd | Foss Creek Trail |

Source: *Countywide Bicycle and Pedestrian Master Plan Updated Project List 2019,* Sonoma County Transportation Authority (SCTA), 2019

### Bicyclist Safety

Collision records for the study area were reviewed to determine if there had been any bicyclist-involved crashes. During the five-year study period between August 1, 2016, through July 31, 2021, there was one bicyclist-involved collision reported in the study area and that occurred at Healdsburg Avenue/Dry Creek Road-March Avenue; the collision involved a northbound bicyclist and a westbound driver and was caused by traffic signal violations. Though the cyclist was injured there is insufficient information to determine any need for remedial action.

### Project Impacts on Bicycle Facilities

Existing bicycle facilities, including the Foss Creek Pathway and bike lanes on March Avenue and Healdsburg Avenue together with shared use of minor streets provide adequate access for bicyclists.

#### *Bicycle Storage*

Based on Section 20.16.175 of Healdsburg's Municipal Codes, lockable bicycle parking is required to be provided for multi-family residential projects of 10 or more units, though the number of required bicycle spaces is not specified. Bicycle parking would be provided outdoors at the site entrance as well as indoors inside a secure bicycle room. The bicycle parking would be centrally located within the site to encourage bicycling.

**Finding** – Bicycle facilities serving the project site are adequate. Bicycle parking would be provided for outdoors and within the secure indoor bicycle room.

## Transit Facilities

### Existing and Planned Transit Facilities

Sonoma County Transit (SCT) provides fixed-route bus service in Healdsburg. SCT Route 67 provides north and south loop service to destinations throughout Healdsburg and stops on March Avenue across the street from Ace

Hardware and on Grove Street south of Dry Creek Road. Route 60 provides regional service between Healdsburg and surrounding communities such as Cloverdale to the north and Santa Rosa to the south. There are bus stops in both directions on Healdsburg Avenue near Terrace Boulevard as well as near Dry Creek Road.

Existing transit routes and details regarding their operation are summarized in Table 5.

**Table 5 – Transit Routes**

| Transit Agency Route | Distance to Stop (mi)[1] | Service | | | Connection |
|---|---|---|---|---|---|
| | | Days of Operation | Time | Frequency | |
| **Sonoma County Transit** | | | | | |
| Route #67 | 0.1 | Mon-Sat | 9:06 a.m. - 3:11 p.m. | 1 – 1.5 hours | Downtown Healdsburg |
| Route #60 NB | 0.2 | Daily | 8:20 a.m. - 9:20 p.m. | 1 – 1.5 hours | Downtown Santa Rosa Transit Mall to Cloverdale |
| Route #60 SB | 0.2 | Daily | 7:15 a.m. – 8:40 p.m. | 1 – 1.5 hours | |

Note: [1] Defined as the shortest walking distance between the project site and the nearest bus stop
Source: sctransit.com/maps-schedules

Two or three bicycles can be carried on most Sonoma County Transit buses. Bike rack space is on a first-come, first-served basis. Riders are responsible for both loading and unloading their bicycles.

Dial-a-ride, also known as paratransit, or door-to-door service, is available for those who are unable to independently use the transit system due to a physical or mental disability. Sonoma County Transit Paratransit is designed to serve the needs of individuals with disabilities.

It should be noted that the SMART rail line runs adjacent to the project site and service is proposed to be extended to the City of Healdsburg, though there is currently no planned completion date for the extension. Upon completion of the SMART rail extension, access to transit would further improve.

## Impact on Transit Facilities

Transit load factors would be spread out across both transit routes and many headways. Therefore, the proposed project would have a dispersed effect on local transit service. Existing transit routes are adequate to accommodate project-generated transit trips and would be improved upon completion of the SMART extension to the City. Existing bus stops are within an acceptable walking distance of the site.

**Finding** – Transit facilities serving the project site are adequate.

Based on the findings detailed above, the project would be expected to have a less-than-significant impact as regards adequacy of facilities and compliance with policies relative to alternative modes.

# Vehicle Miles Traveled (VMT)

Senate Bill (SB) 743 established a change in the metric to be applied in determining transportation impacts associated with development projects. As of the date of this analysis, the City of Healdsburg has not yet adopted thresholds of significance related to VMT. As a result, project-related VMT impacts were assessed based on guidance published by the California Governor's Office of Planning and Research (OPR) in the publication *Transportation Impacts (SB 743) CEQA Guidelines Update and Technical Advisory*, 2018. The *Technical Advisory* notes that "a project consisting of a high percentage of affordable housing may be a basis for the lead agency to find a less-than-significant impact on VMT. Evidence supports a presumption of less than significant impact for a 100 percent affordable residential development (or the residential component of a mixed-use development) in infill locations." Because the proposed project is an infill affordable housing development, the screening guidance provided by OPR would apply, and it is reasonable to conclude that the project would have a less-than-significant impact on VMT.

**Finding** – The project would have a less-than-significant impact on VMT based on OPR guidelines.

# Safety Issues

The potential for the project to impact safety was evaluated in terms of the adequacy of sight distance and need for turn lanes at the project access; adequacy of stacking space in dedicated turn lanes at the study intersections to accommodate additional queuing due to adding project-generated trips; and need for additional right-of-way controls. This section addresses the third bullet on the CEQA checklist which is whether or not the project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

## Site Access

The project would be accessed from a single driveway on Dry Creek Road to be located at the eastern edge of the site, approximately 370 feet east of Grove Street and adjacent to the SMART rail tracks. This driveway would be connected to the Sauers property on the north of the project site to provide emergency vehicle access. Along the project frontage, Dry Creek Road is nearly 50 feet wide and includes one through lane in the westbound direction (the project would provide the second westbound through lane), two through lanes in the eastbound direction and a center turn lane. At that driveway location there is a raised median that is part of a signalized pedestrian crossing system for the Foss Creek multi-use path.

### Access Analysis

Consideration was given to the potential for conflict in the existing two-way left-turn lane (TWLTL) on Dry Creek Road associated with the proposed new project driveway. Because the project driveway would essentially be aligned with the driveway for the Hotel Trio on the south side of the street, the connection would operate in a manner similar to a four-legged intersection. Conflicts between traffic streams in the short term are therefore not anticipated.

However, given the proximity of the driveway to the recently-installed Foss Creek multi-use path crossing and, in particular, the median island that is part of that crossing, consideration was given to potential conflicts associated with the crossing and operation of the traffic signal. Because drivers exiting the site would not be able to enter the center turn lane but would need to cross through it, left turns could result in vehicles stopping across the center lane and extending into the through lane, blocking traffic and creating a potentially unsafe situation. As a result, allowing left turns outbound from the driveway is not recommended. It is noted that at such time as the SMART rail line is extended to Cloverdale a "Quiet Zone" would be implemented through Healdsburg; to accommodate this type of operation center medians would be installed on both approaches. As part of the implementation of the Quiet Zone improvements the median would be extended and would completely block access to the driveway, resulting in right-turn access only both inbound and outbound.

**Finding** – No conflicts are anticipated between traffic accessing the project site and Hotel Trio, which is located across from the project site. However, the potential for conflicts associated with outbound left turns indicates a safety concern.

**Recommendation** – It is recommended that a sign prohibiting left turns be installed facing the project driveway.

### Sight Distance

Sight distance along Dry Creek Road at the project driveway was evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distances for minor street approaches that are a driveway are based on stopping sight distance, with the approach travel speeds used as the basis for determining the recommended sight distance. Additionally, the stopping sight distance needed

for a following driver to stop if there is a vehicle waiting to turn into a side street or driveway is evaluated based on stopping sight distance criterion and the approach speed on the major street.

For the 30-mph speed limit on Dry Creek Road, a minimum of 200 feet of stopping sight distance is needed. Based on the review of field conditions, sight lines to and from the project driveway on Dry Creek Road are measured to be nearly 720 feet to the west, which are more than adequate for the posted speed limit. Sight lines to the east were not measured as left turns from the project driveway are effectively prohibited by the existing median. It was also determined that adequate stopping sight distance is available on Dry Creek Road for a following driver to notice and react to a preceding motorist slowing to enter the project site at the project driveway.

Signs or landscaping can impede sight lines if placed too near the driveway and not sufficiently back from the road. Consideration should be given to maintaining adequate sight lines in designing frontage improvements.

**Finding** – Adequate sight distances are available at the project driveway.

**Recommendation** – The design of frontage improvements should include consideration of maintaining adequate sight lines, and placement of signs or tall landscaping that would impede sight lines should be avoided.

## Geometric Design Considerations

As part of the project Dry Creek Road will be widened to provide a second westbound travel lane, closing an existing gap as the lane exists on both sides of the site. To ensure safe operation upon completion of the project the striping and signing would need to be revised to eliminate the existing merge to the east and convert the dedicated right-turn lane at Grove Street to a shared through/right-turn lane.

In light of the recommendation above to prohibit left turns out of the site's driveway, the City may wish to consider allowing u-turns on the westbound approach to Dry Creek Road/Grove Street. A review of the width of the eastbound lanes on Dry Creek Road indicates that this width is slightly narrower than desirable for such a move; however, the roadway is wide enough that there appears to be the potential to shift the westbound lanes to the north slightly to achieve sufficient width for this u-turn movement. This change in the signing and striping could be made in conjunction with the striping modifications needed to accommodate the second westbound through lane.

**Finding** – The striping and signing on Dry Creek Road would need to be modified to accommodate the new westbound lane proposed along the project's frontage. Additionally, changes to the striping and signing may be necessary to provide sufficient width to allow a u-turn at Grove Street for drivers leaving the site and wishing to travel eastbound. A graphic depicting the u-turn movement is provided in Appendix B.

**Recommendation** – As part of the project striping and signing on Dry Creek Road should be modified as necessary to accommodate the new westbound lane and potentially u-turns at Grove Street.

Assuming that the site is designed to maintain adequate sight lines from the project driveway and with the implementation of the recommended "No Left Turn" signing and changes to striping and signing associated with widening Dry Creek Road along the project frontage, the project would be expected to have a less-than-significant impact with regard to safety.

# Emergency Access

The final bullet on the CEQA checklist requires an evaluation as to whether the project would result in inadequate emergency access or not.

## Adequacy of Site Access

The proposed site circulation and access design would meet City design criteria, including the 20-foot minimum width of the residential driveways. Additionally, a vehicular connection on the eastern side of the site from the proposed driveway to the Sauer's property to the north would provide emergency ingress and egress. Assuming these criteria are met, the proposed project site would be expected to function acceptably for emergency response vehicles.

## Effect on Emergency Response Times

As detailed in the following section, the addition of project-generated traffic would have a limited effect on the operation and would therefore result in a nominal increase in response times.

**Finding** – The proposed site access and on-site circulation would function acceptably for emergency response vehicles and the project would not substantially increase emergency response times.

The project would be expected to have a less-than-significant impact on emergency access.

# Capacity Analysis

## Intersection Level of Service Methodologies

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersections were analyzed using methodologies published in the *Highway Capacity Manual* (HCM), Transportation Research Board, 2018. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle.

The study intersection at Dry Creek Road/US 101 South has stop signs on all approaches and was analyzed using the "All-Way Stop-Controlled" Intersection methodology from the HCM. This methodology evaluates delay for each approach based on turning movements, opposing and conflicting traffic volumes, and the number of lanes. Average vehicle delay is computed for the intersection as a whole and is then related to a Level of Service.

The Levels of Service for the intersection of Dry Creek Road/US 101 North Ramps, which is unsignalized and has the off-ramp stop-controlled, were analyzed using the "Two-Way Stop-Controlled" intersection capacity method from the HCM. This methodology determines a level of service for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection.

The remaining two study intersections are currently controlled by traffic signals and were evaluated using the signalized methodology from the HCM. This methodology is based on factors including traffic volumes, green time for each movement, phasing, whether the signals are coordinated or not, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology. For purposes of this study, delays were calculated using signal timing obtained from the City.

The ramp intersections are proposed to be controlled by modern roundabouts, so future conditions at these locations were evaluated using the FHWA Roundabout Method, also contained within the Unsignalized Methodology of the HCM 6$^{th}$ Edition, Transportation Research Board, 2016. This methodology determines intersection operation using a gap acceptance method along with basic geometric and volume data to calculate entering and circulating flows. This information is then translated to average vehicle delays, with LOS break points at the same delays as used in the two-way stop-controlled methodology.

The ranges of delay associated with the various levels of service are indicated in Table 6.

| Table 6 – Intersection Level of Service Criteria | | | | |
|---|---|---|---|---|
| **LOS** | **Two-Way Stop-Controlled** | **All-Way Stop-Controlled** | **Signalized** | **Roundabout** |
| A | Delay of 0 to 10 seconds. Gaps in traffic are readily available for drivers exiting the minor street. | Delay of 0 to 10 seconds. Upon stopping, drivers are immediately able to proceed. | Delay of 0 to 10 seconds. Most vehicles arrive during the green phase, so do not stop at all. | Delay of 0 to 10 seconds. |
| B | Delay of 10 to 15 seconds. Gaps in traffic are somewhat less readily available than with LOS A, but no queuing occurs on the minor street. | Delay of 10 to 15 seconds. Drivers may wait for one or two vehicles to clear the intersection before proceeding from a stop. | Delay of 10 to 20 seconds. More vehicles stop than with LOS A, but many drivers still do not have to stop. | Delay of 10 to 15 seconds. |
| C | Delay of 15 to 25 seconds. Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street. | Delay of 15 to 25 seconds. Drivers will enter a queue of one or two vehicles on the same approach and wait for vehicle to clear from one or more approaches prior to entering the intersection. | Delay of 20 to 35 seconds. The number of vehicles stopping is significant, although many still pass through without stopping. | Delay of 15 to 25 seconds. |
| D | Delay of 25 to 35 seconds. There are fewer acceptable gaps in traffic, and drivers may enter a queue of one or two vehicles on the side street. | Delay of 25 to 35 seconds. Queues of more than two vehicles are encountered on one or more approaches. | Delay of 35 to 55 seconds. The influence of congestion is noticeable, and most vehicles have to stop. | Delay of 25 to 35 seconds. |
| E | Delay of 35 to 50 seconds. Few acceptable gaps in traffic are available, and longer queues may form on the side street. | Delay of 35 to 50 seconds. Longer queues are encountered on more than one approach to the intersection. | Delay of 55 to 80 seconds. Most, if not all, vehicles must stop, and drivers consider the delay excessive. | Delay of 35 to 50 seconds. |
| F | Delay of more than 50 seconds. Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues. | Delay of more than 50 seconds. Drivers enter long queues on all approaches. | Delay of more than 80 seconds. Vehicles may wait through more than one cycle to clear the intersection. | Delay of more than 50 seconds. |

Reference: *Highway Capacity Manual,* Transportation Research Board, 2018

## Traffic Operation Standards

In the *Healdsburg 2030 General Plan Update Environmental Impact Report*, 2009, the City of Healdsburg established that a proposed Project would have an adverse effect related to traffic or circulation if it resulted in the following:

*An effect on intersection operation would be considered adverse if:*

a) *The addition of traffic generated by a project degrades the peak-period LOS of an all-way stop-controlled or signalized intersection from A, B, C, or D (without the project) to E or F (with the project);*

b) *The addition of Project generated traffic degrades the overall operation on a minor, stop-controlled approach to an unsignalized intersection from LOS A, B, C, D, or E (without the project) to LOS F (with the project) and the affected approach or movement serves 25 or more vehicles per hour; or*

c) *The LOS (without project) is E or F, and Project-generated traffic would increase the peak period average vehicle delay by 5 seconds or more.*

It is noted that the two study intersections at the US 101 interchange with Dry Creek Road are under the jurisdiction of Caltrans. However, Caltrans no longer has a service level standard as they have transitioned to the VMT metric. Adequacy of operation was therefore assessed against the City's standard for analysis purposes.

## Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the a.m. and p.m. peak periods. This condition does not include project-generated traffic volumes. Volume data was collected in March 2018 and was not adjusted as volumes were determined to represent normal conditions before the Covid-19 outbreak. It is noted that because many residents are still working from home, traffic levels have not yet returned to pre-Covid levels and there is some speculation that it may not. Because 2018 volumes have been determined to be higher than volumes collected in 2021, they tend to provide a conservative analysis.

It should be noted that the existing flared lanes on the southbound and eastbound approaches of US 101 South Ramps/Dry Creek Road and the northbound approach of US 101 North Ramps/Dry Creek Road were analyzed as there are two lanes as drivers routinely queue up side by side to accommodate simultaneous left and right turns.

Under existing conditions, all four study intersections are operating acceptably at LOS D or better overall. The northbound US 101 North off-ramp approach to Dry Creek Road also operates acceptably at LOS C or D. A summary of the intersection Level of Service calculations is contained in Table 7, and copies of the calculations are provided in Appendix C. The existing traffic volumes are shown in Figure 3.

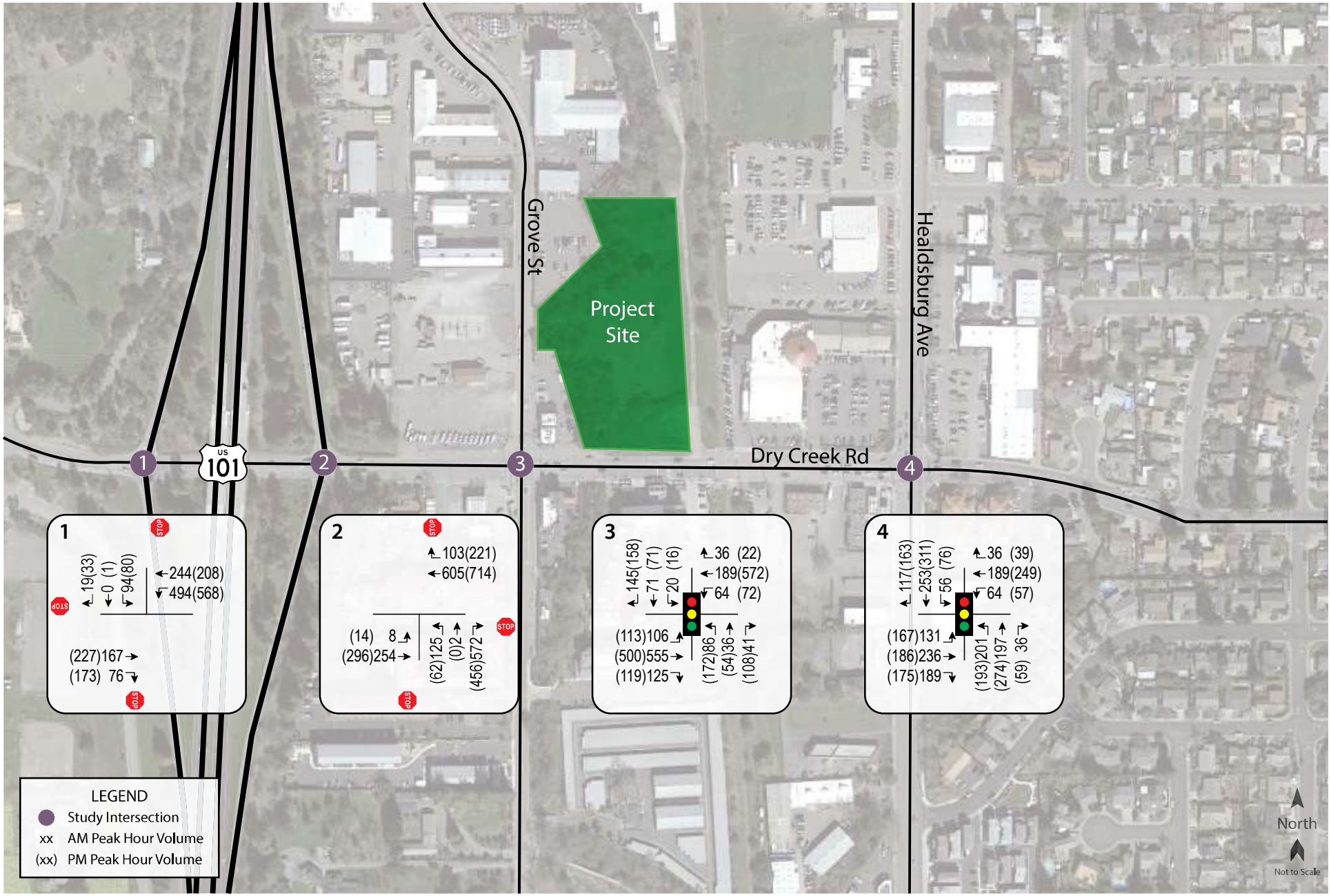
**Table 7 – Existing Peak Hour Intersection Levels of Service**

| **Study Intersection** ***Approach*** | **AM Peak** | | **PM Peak** | |
|---|---|---|---|---|
| | **Delay** | **LOS** | **Delay** | **LOS** |
| 1. US 101S Ramps/Dry Creek Rd | 16.6 | C | 23.2 | C |
| 2. US 101N Ramps/Dry Creek Rd | 14.1 | B | 6.4 | A |
| *Northbound (US 101 Off-ramp) Approach* | *33.4* | *D* | *21.4* | *C* |
| 3. Grove St/Dry Creek Rd | 29.0 | C | 16.1 | C |
| 4. Healdsburg Ave/Dry Creek Rd-March Ave | 38.7 | D | 16.6 | B |

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*

## Future Conditions

Segment volumes for the horizon year of 2040 were obtained from Sonoma County's gravity demand model and translated to turning movement volumes at each of the study intersections using a combination of the "Furness" method and factoring, depending on how the model was configured at each intersection. The Furness method is an iterative process that employs existing turning movement data, existing link volumes, and future link volumes to project likely turning future movement volumes at intersections.




hea077.ai 11/22

**Traffic Impact Study for the Dry Creek Commons Project**

**Figure 3 – Existing Traffic Volumes**

Based on the *US 101/Dry Creek Road Interchange Feasibility Study*, AECOM, 2020 and subsequent review by the Healdsburg City Council, roundabouts are the preferred option for making planned future improvements to the two ramp intersections at the interchange. A copy of the conceptual plan for these improvements is provided in Figure 4. Further, the existing traffic signal at Grove Street/Dry Creek Road is planned to be modified as follows.

- Modify the northbound approach to include left-turn and shared through/right-turn lanes.
- Install split phasing for the northbound and southbound Grove Street approaches.
- Implement flashing yellow arrow (permissive/protected) left-turn phasing for the eastbound and westbound Dry Creek Road approaches

Under the anticipated Future volumes, and with the completion of planned improvements, the study intersections are expected to operate acceptably at LOS D or better. Operating conditions are summarized in Table 8 and Future volumes are shown in Figure 5.

**Table 8 – Future Peak Hour Intersection Levels of Service**

| Study Intersection | AM Peak | | PM Peak | |
|---|---|---|---|---|
| | Delay | LOS | Delay | LOS |
| 1. US 101S Ramps/Dry Creek Rd | 13.7 | B | 26.2 | C |
| 2. US 101N Ramps/Dry Creek Rd | 6.8 | A | 10.1 | B |
| 3. Grove St/Dry Creek Rd | 30.3 | C | 31.2 | C |
| 4. Healdsburg Ave/Dry Creek Rd-March Ave | 51.1 | D | 30.0 | C |

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

# Project Conditions

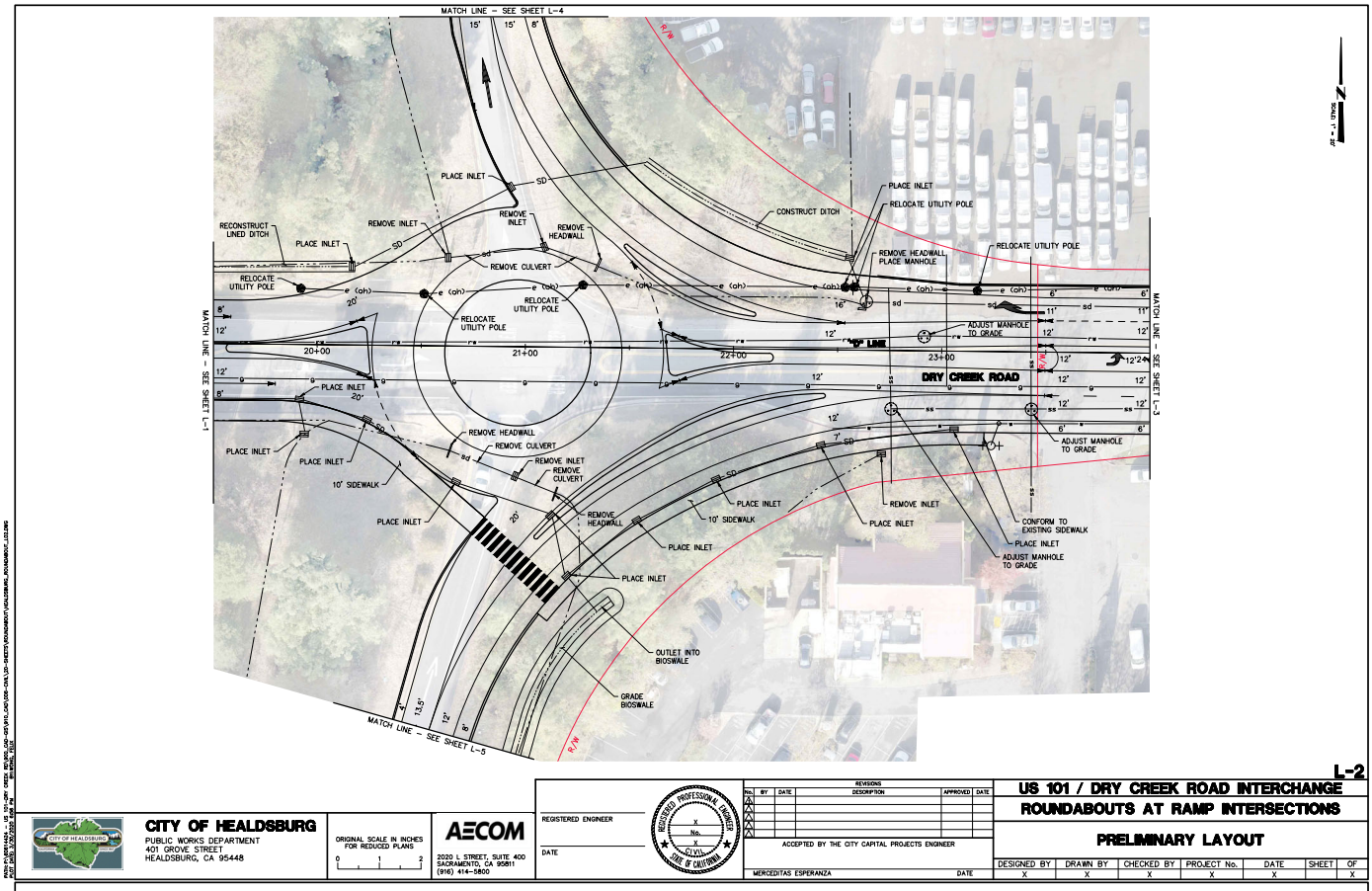
## Existing plus Project Conditions

Upon the addition of project-related traffic to the Existing volumes, the study intersections are expected to continue operating acceptably at the same Levels of Service with minor increases to the delay. These results are summarized in Table 9. Project traffic volumes are shown in Figure 6.

**Table 9 – Existing and Existing plus Project Peak Hour Intersection Levels of Service**

| Study Intersection<br>*Approach* | Existing Conditions | | | | Existing plus Project | | | |
|---|---|---|---|---|---|---|---|---|
| | AM Peak | | PM Peak | | AM Peak | | PM Peak | |
| | Delay | LOS | Delay | LOS | Delay | LOS | Delay | LOS |
| 1. US 101S Ramps/Dry Creek Rd | 16.6 | C | 23.2 | C | 17.4 | C | 24.0 | C |
| 2. US 101N Ramps/Dry Creek Rd | 14.1 | B | 6.4 | A | 14.3 | B | 6.6 | A |
| *Nourthbound (US 101 Off-ramp) Approach* | *33.4* | *D* | *21.4* | *C* | *34.1* | *D* | *21.8* | *C* |
| 3. Grove St/Dry Creek Rd | 29.0 | C | 16.1 | C | 29.0 | C | 16.2 | B |
| 4. Healdsburg Ave/Dry Creek Rd-March Ave | 38.7 | D | 16.6 | B | 38.7 | D | 16.6 | B |

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*




L-2

CITY OF HEALDSBURG
PUBLIC WORKS DEPARTMENT
401 GROVE STREET
HEALDSBURG, CA 95448

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

AECOM
2020 L STREET, SUITE 400
SACRAMENTO, CA 95811
(916) 414-5800

REGISTERED ENGINEER
DATE

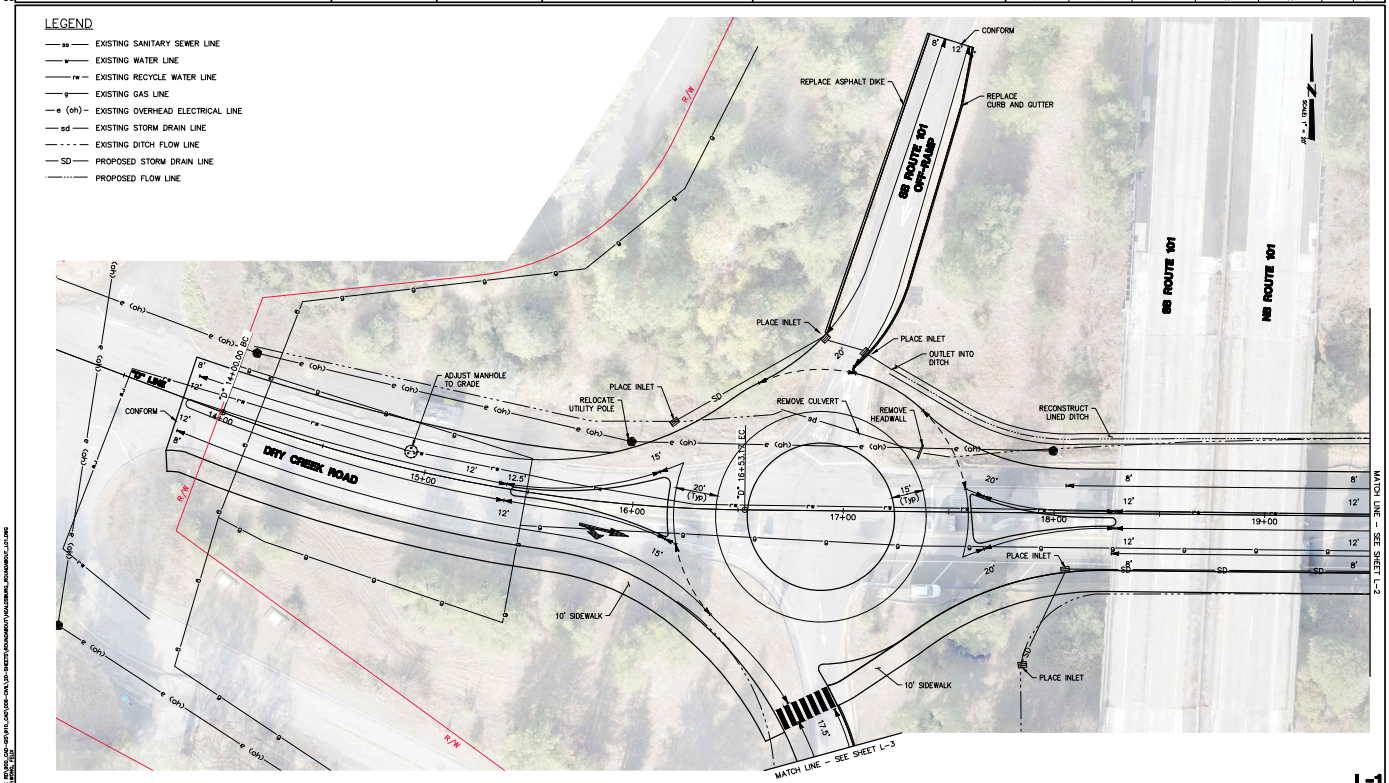
REVISIONS

| No. | BY | DATE | DESCRIPTION | APPROVED | DATE |
|---|---|---|---|---|---|

ACCEPTED BY THE CITY CAPITAL PROJECTS ENGINEER
MERCEDITAS ESPERANZA DATE

US 101 / DRY CREEK ROAD INTERCHANGE
ROUNDABOUTS AT RAMP INTERSECTIONS
PRELIMINARY LAYOUT

| DESIGNED BY | DRAWN BY | CHECKED BY | PROJECT No. | DATE | SHEET | OF |
|---|---|---|---|---|---|---|
| X | X | X | X | X | | X |




L-1

CITY OF HEALDSBURG
PUBLIC WORKS DEPARTMENT
401 GROVE STREET
HEALDSBURG, CA 95448

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

AECOM
2020 L STREET, SUITE 400
SACRAMENTO, CA 95811
(916) 414-5800

REGISTERED ENGINEER
DATE

REVISIONS

| No. | BY | DATE | DESCRIPTION | APPROVED | DATE |
|---|---|---|---|---|---|

ACCEPTED BY THE CITY CAPITAL PROJECTS ENGINEER
MERCEDITAS ESPERANZA DATE

US 101 / DRY CREEK ROAD INTERCHANGE
ROUNDABOUTS AT RAMP INTERSECTIONS
PRELIMINARY LAYOUT

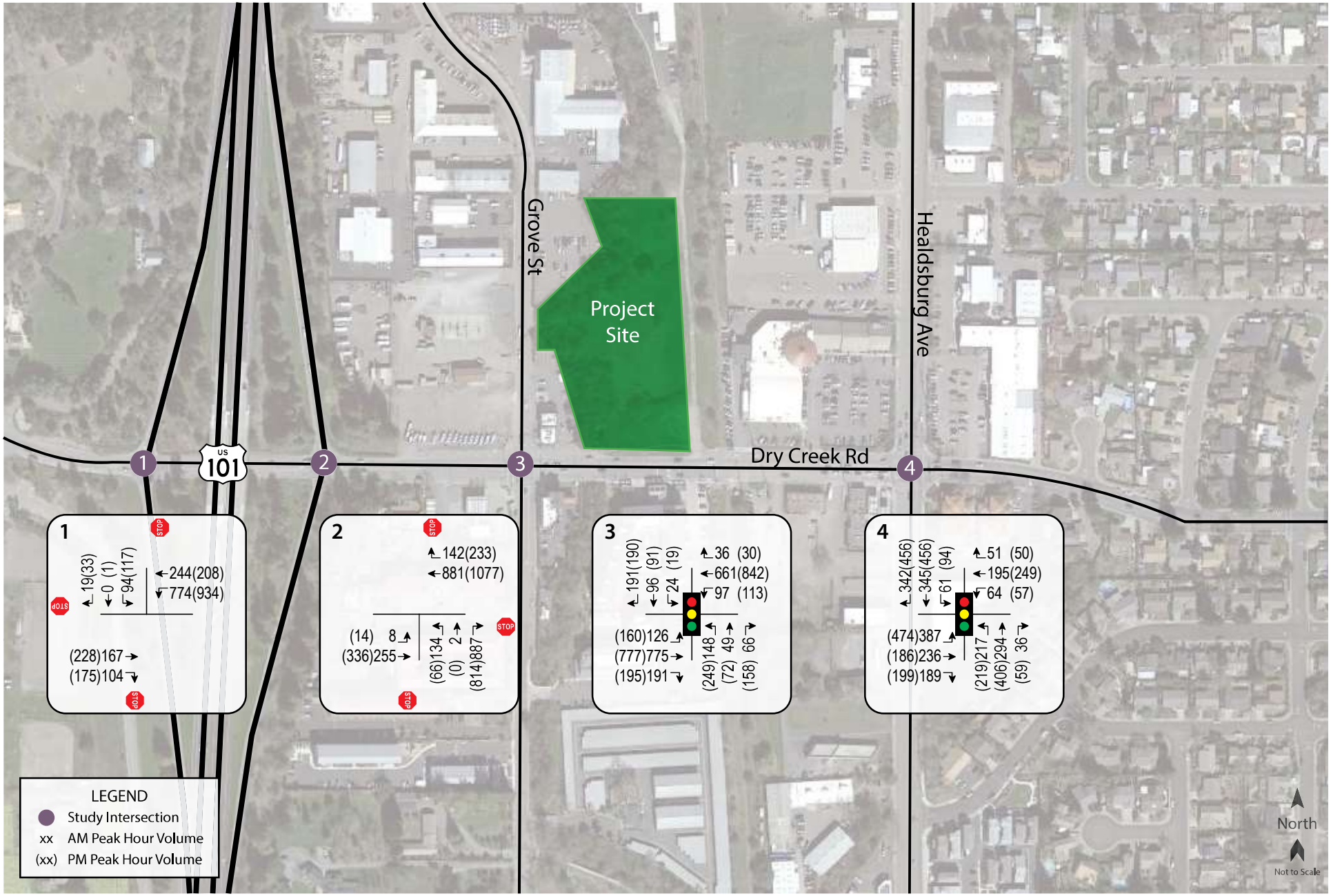
| DESIGNED BY | DRAWN BY | CHECKED BY | PROJECT No. | DATE | SHEET | OF |
|---|---|---|---|---|---|---|
| X | X | X | X | X | | X |

Source: City of Healdsburg Public Works Department

HEA077.ai 1/22

**Traffic Impact Study for the Dry Creek Commons Project**

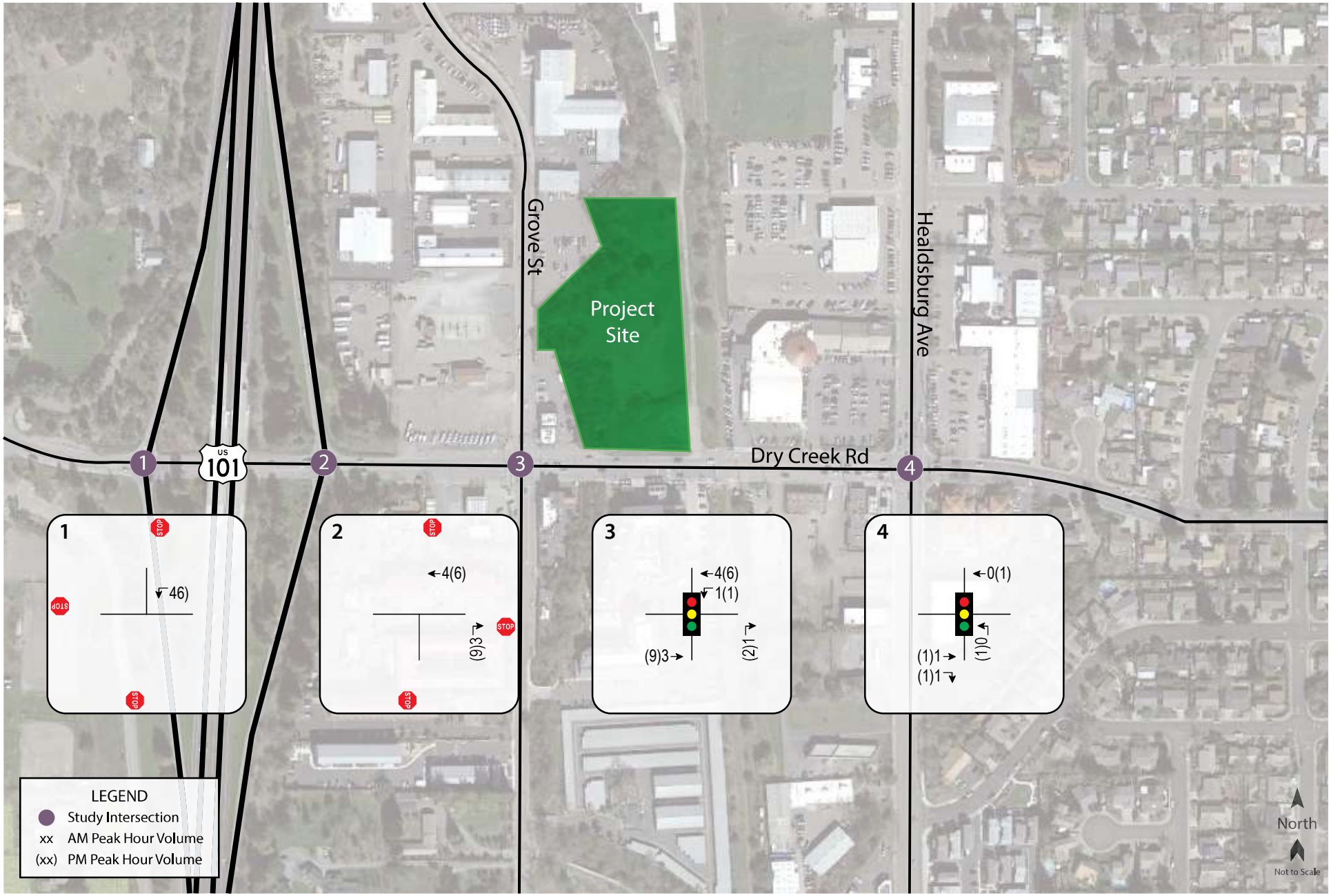
**Figure 4 - Conceptual Plans for Dry Creek Road Interchange**




hea077.ai 11/22

**Traffic Impact Study for the Dry Creek Commons Project**

**Figure 5 – Future Traffic Volumes**




hea077.ai 11/22

Traffic Impact Study for the Dry Creek Commons Project

**Figure 6 – Project Traffic Volumes**

W-Trans

**Finding** – The study intersections are expected to continue operating acceptably at the same Levels of Service upon the addition of project-generated traffic to existing volumes.

### Future plus Project Conditions

Upon the addition of project-generated traffic to the anticipated Future volumes, and with the planned improvements, the study intersections are expected to operate acceptably at LOS D or better. The Future plus Project operating conditions are summarized in Table 10.

**Table 10 – Future and Future plus Project Peak Hour Intersection Levels of Service**

| Study Intersection | Future Conditions | | | | Future plus Project | | | |
|---|---|---|---|---|---|---|---|---|
| | AM Peak | | PM Peak | | AM Peak | | PM Peak | |
| | Delay | LOS | Delay | LOS | Delay | LOS | Delay | LOS |
| 1. US 101S Ramps/Dry Creek Rd | 13.7 | B | 26.2 | C | 14.0 | B | 26.7 | C |
| 2. US 101N Ramps/Dry Creek Rd | 6.8 | A | 10.1 | B | 7.0 | A | 10.2 | B |
| 3. Grove St/Dry Creek Rd | 30.3 | C | 31.2 | C | 30.3 | C | 31.6 | C |
| 4. Healdsburg Ave/Dry Creek Rd-March Ave | 51.1 | D | 30.0 | C | 51.1 | D | 30.0 | C |

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

**Finding** – The study intersections would be expected to continue operating acceptably with project traffic added to Future conditions, at the same Levels of Service as without it.

## Transportation Impact Fee

The project would contribute vehicular trips to the intersections of US 101 South Ramps/Dry Creek Road and US 101 North Ramps/Dry Creek Road, where the roundabouts are planned to be installed. These planned future improvements were incorporated into the City's Traffic Facilities Impact Fees per Resolution 2-2021, so payment of the fee would be expected to offset any cumulative effect on traffic operation associated with the project.

**Finding** – The applicant is subject to the City's traffic facilities impact fee, which includes funding for the Dry Creek Interchange project.

**Recommendation** – It is recommended that the project applicant pay the City's traffic facilities impact fee to offset any cumulative project effects on traffic operation.

# Parking

The project was analyzed to determine whether the proposed parking supply would be sufficient for the anticipated parking demand. The project site as proposed would provide a total of 104 parking spaces on-site.

Based on the City of Healdsburg's Municipal Code 20.16.15., Number of Required Vehicular Parking Spaces, 1.5 parking spaces per unit (one of which is located in a garage or carport) plus one uncovered guest space per three units are required for multi-family housing. It is noted that the covered parking requirements were not evaluated as the requirements may be waived for affordable housing developments per Section B of the Municipal Code 20.16.15. The City's parking rates translate to 106 required parking spaces, so the proposed supply of 104 spaces is two spaces short of meeting the City requirements.

As the proposed parking would not meet the City's parking requirements, the proposed parking was evaluated based on the affordable housing parking requirements established by Density Bonus Law (California Government Code Sections 65915-65918), which states that local governments cannot enforce parking requirements that exceed one space per one-bedroom unit and 1.5 spaces per two- or three-bedroom apartment unit. As the project includes 28 one-bedroom units, 15 two-bedroom units, and 15 three-bedroom units, a total of 73 parking spaces would be required and the proposed supply is, therefore, more than adequate to meet these parking requirements.

Further, the parking supply was also assessed based on the standard rates published by ITE in *Parking Generation*, 5th Edition, 2019. Based on the ITE 85th percentile weekday peak parking generation rate for "Affordable Housing" (ITE LU#223) land use, a total of 77 spaces would be needed at the project site, indicating that the proposed parking supply would be more than sufficient to accommodate the peak parking demand.

Although the proposed parking supply does not meet the City's parking requirements, the parking supply is determined to be adequate to meet the Density Bonus Law parking requirements and would also be enough to accommodate the peak parking demand.

A summary of the parking supply and demand analyses is indicated in Table 11.

| Table 11 – Parking Analysis | | | |
|---|---|---|---|
| **Basis** | **Units** | **Rate** | **Parking Spaces** |
| **City Required Parking** | | | |
| Multi-family Housing | 58 du | | |
| Resident Parking | | 1.5 space/du | 87 |
| Guest Parking | | 1.0 space/3 du | 19 |
| *City Required Parking Total* | | | *106* |
| **ITE Parking Demand Estimate** | | | |
| Affordable Housing | 58 du | 1.33 space/du | 77 |
| **Density Bonus Required Parking** | | | |
| Affordable Housing | | | |
| One-Bedroom Units | 28 du | 1 space /unit | 28 |
| Two- & Three-Bedroom Units | 30 du | 1.5 space/unit | 45 |
| *Density Bonus Parking Total* | | | *73* |
| **Proposed Parking Supply** | | | **104** |

Notes: du = dwelling unit

Although the parking supply is expected to be more than adequate, the following strategies would be implemented as part of the project to manage and monitor parking demand.

- Provide marked visitor parking.
- Provide marked loading spaces.
- Provide one space per one-bedroom unit and two spaces for two- or three-bedroom units.
- Limit the number cars allowed on-site in the lease.
- Issue parking permits to residents and monitor permits.
- Write parking rules into the Community Policies tenants will have to sign and follow.

**Finding** – While the proposed parking supply is two spaces short of meeting the City's parking requirements, the supply would be more than sufficient to meet the anticipated peak demand based on ITE standard rates as well as the Density Bonus Law parking requirements.

# Conclusions and Recommendations

## Conclusions

- The proposed project would be expected to generate an average of 263 trips per day, including 21 a.m. peak hour trips and 23 trips during the p.m. peak hour.
- The pedestrian facilities would be adequate upon completion of frontage improvements to be provided as part of the project, including extending the sidewalk to the Plank parking lot and existing terminus at the SMART tracks. The existing transit facilities are adequate to serve trips from and to the project site.
- The existing bicycle facilities are adequate and would be further improved upon completion of the planned bicycle projects in the vicinity. Outdoor and indoor bicycle parking would be provided at the project site.
- Based on OPR guidelines, the project is screened out as affordable housing and is presumed to have a less-than-significant impact on VMT.
- Adequate sight distances are available at the project driveway.
- No conflicts are anticipated between traffic accessing the project site and Hotel Trio, located across from the project site.
- Due to the presence of a median blocking access to the center turn lane from the project site, egress should be limited to right turns only.
- Signing and striping on Dry Creek Road should be modified as necessary to incorporate the new segment of westbound through lane being constructed as part of the project.
- The project site is expected to function acceptably for emergency response vehicles.
- The study intersections are expected to operate acceptably under Existing Conditions with and without project.
- Assuming completion of planned improvements, all study intersections are expected to operate acceptably under Future volumes and with project traffic added.
- Although the proposed parking supply would not meet the City's requirements, the parking supply is more than adequate to meet Density Bonus Law parking requirements as well as the estimated peak demand.

## Recommendations

- Maintaining adequate sight lines should be considered when designing landscaping and signs to be placed along the frontage.
- A sign prohibiting left turns from the project driveway should be installed adjacent to the outbound lane.
- Striping and signing on Dry Creek Road should be modified as part of the project to eliminate signs and markings that would conflict with the change in operation. Additional changes may be warranted to provide

sufficient width to accommodate u-turns on westbound Dry Creek Road at Grove Street if the City allows such movements.

- The project applicant should pay the City's traffic facilities impact fee to offset any cumulative project effects on traffic operation.

# Study Participants and References

## Study Participants

| | |
|---|---|
| **Principal in Charge** | Dalene J. Whitlock, PE, PTOE |
| **Assistant Planner** | Jade Kim |
| **Graphics** | Cameron Wong |
| **Editing/Formatting** | Hannah Yung-Boxdell, Cameron Wong |
| **Quality Control** | Dalene J. Whitlock, PE, PTOE |

## References


*2018 Collision Data on California State Highways*, California Department of Transportation, 2021
*City of Healdsburg Municipal Code*, Municipal Code Corporation, 2019
*Countywide Bicycle & Pedestrian Master Plan*, Sonoma County Transportation Authority (SCTA), 2019
*Healdsburg 2030 General Plan Update Final Environmental Impact Report*, Christopher A. Joseph & Associates, 2009
*Highway Capacity Manual*, 6th Edition, Transportation Research Board, 2018
*Highway Design Manual,* 6th Edition, California Department of Transportation, 2017
*Parking Generation*, 5th Edition, Institute of Transportation Engineers, 2019
SCTA Countywide Bicycle & Pedestrian Master Plan Updated Project List 2019, https://scta.ca.gov/planning/countywide-bike-and-pedestrain-plan/
Sonoma County Transit, https://sctransit.com/maps-schedules/
*Statewide Integrated Traffic Records System (SWITRS)*, California Highway Patrol, 2016-2021
*Technical Advisory on Evaluating Transportation Impacts in CEQA*, Governor's Office of Planning and Research, 2018
*Trip Generation Manual*, 11th Edition, Institute of Transportation Engineers, 2021
*US 101/Dry Creek Road Interchange Feasibility Study*, AECOM, 2020


HEA077

This page intentionally left blank

# Appendix A

## Collision Rate Calculations

This page intentionally left blank

## Intersection Collision Rate Worksheet

**Traffic Impact Study for the Dry Creek Commons Project**

**Intersection # 1:** Dry Creek Rd & US 101 South Ramps
**Date of Count:** Tuesday, March 27, 2018

**Number of Collisions:** 3
**Number of Injuries:** 1
**Number of Fatalities:** 0
**Average Daily Traffic (ADT):** 12900
**Start Date:** August 1, 2016
**End Date:** July 31, 2021
**Number of Years:** 5

**Intersection Type:** Four-Legged
**Control Type:** 4 Way Stop
**Area:** Urban

$$\text{Collision Rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x Days per Year x Number of Years}}$$

$$\text{Collision Rate} = \frac{3 \times 1{,}000{,}000}{12{,}900 \times 365 \times 5}$$

| | Collision Rate | Fatality Rate | Injury Rate |
|---|---|---|---|
| **Study Intersection** | **0.13 c/mve** | **0.0%** | **33.3%** |
| **Statewide Average*** | **0.17 c/mve** | **0.4%** | **26.8%** |

**Notes**
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2018 Collision Data on California State Highways, Caltrans

**Intersection # 2:** Dry Creek Rd & US 101 North Ramps
**Date of Count:** Tuesday, March 27, 2018

**Number of Collisions:** 6
**Number of Injuries:** 2
**Number of Fatalities:** 0
**Average Daily Traffic (ADT):** 17600
**Start Date:** August 1, 2016
**End Date:** July 31, 2021
**Number of Years:** 5

**Intersection Type:** Four-Legged
**Control Type:** Stop & Yield Controls
**Area:** Urban

$$\text{Collision Rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x Days per Year x Number of Years}}$$

$$\text{Collision Rate} = \frac{6 \times 1{,}000{,}000}{17{,}600 \times 365 \times 5}$$

| | Collision Rate | Fatality Rate | Injury Rate |
|---|---|---|---|
| **Study Intersection** | **0.19 c/mve** | **0.0%** | **33.3%** |
| **Statewide Average*** | **0.14 c/mve** | **1.1%** | **46.2%** |

**Notes**
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2018 Collision Data on California State Highways, Caltrans

## Intersection Collision Rate Worksheet

**Traffic Impact Study for the Dry Creek Commons Project**

**Intersection # 3:** Dry Creek Rd & Grove St
**Date of Count:** Tuesday, March 27, 2018

**Number of Collisions:** 15
**Number of Injuries:** 6
**Number of Fatalities:** 0
**Average Daily Traffic (ADT):** 19800
**Start Date:** August 1, 2016
**End Date:** July 31, 2021
**Number of Years:** 5

**Intersection Type:** Four-Legged
**Control Type:** Signals
**Area:** Urban

$$\text{Collision Rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x Days per Year x Number of Years}}$$

$$\text{Collision Rate} = \frac{15 \times 1{,}000{,}000}{19{,}800 \times 365 \times 5}$$

| | Collision Rate | Fatality Rate | Injury Rate |
|---|---|---|---|
| **Study Intersection** | **0.42 c/mve** | **0.0%** | **40.0%** |
| **Statewide Average*** | **0.24 c/mve** | **0.5%** | **46.9%** |

**Notes**
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2018 Collision Data on California State Highways, Caltrans

**Intersection # 4:** Healdsburg Ave & Dry Creek Rd-March Ave
**Date of Count:** Tuesday, March 27, 2018

**Number of Collisions:** 15
**Number of Injuries:** 4
**Number of Fatalities:** 0
**Average Daily Traffic (ADT):** 19500
**Start Date:** August 1, 2016
**End Date:** July 31, 2021
**Number of Years:** 5

**Intersection Type:** Four-Legged
**Control Type:** Signals
**Area:** Urban

$$\text{Collision Rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x Days per Year x Number of Years}}$$

$$\text{Collision Rate} = \frac{15 \times 1{,}000{,}000}{19{,}500 \times 365 \times 5}$$

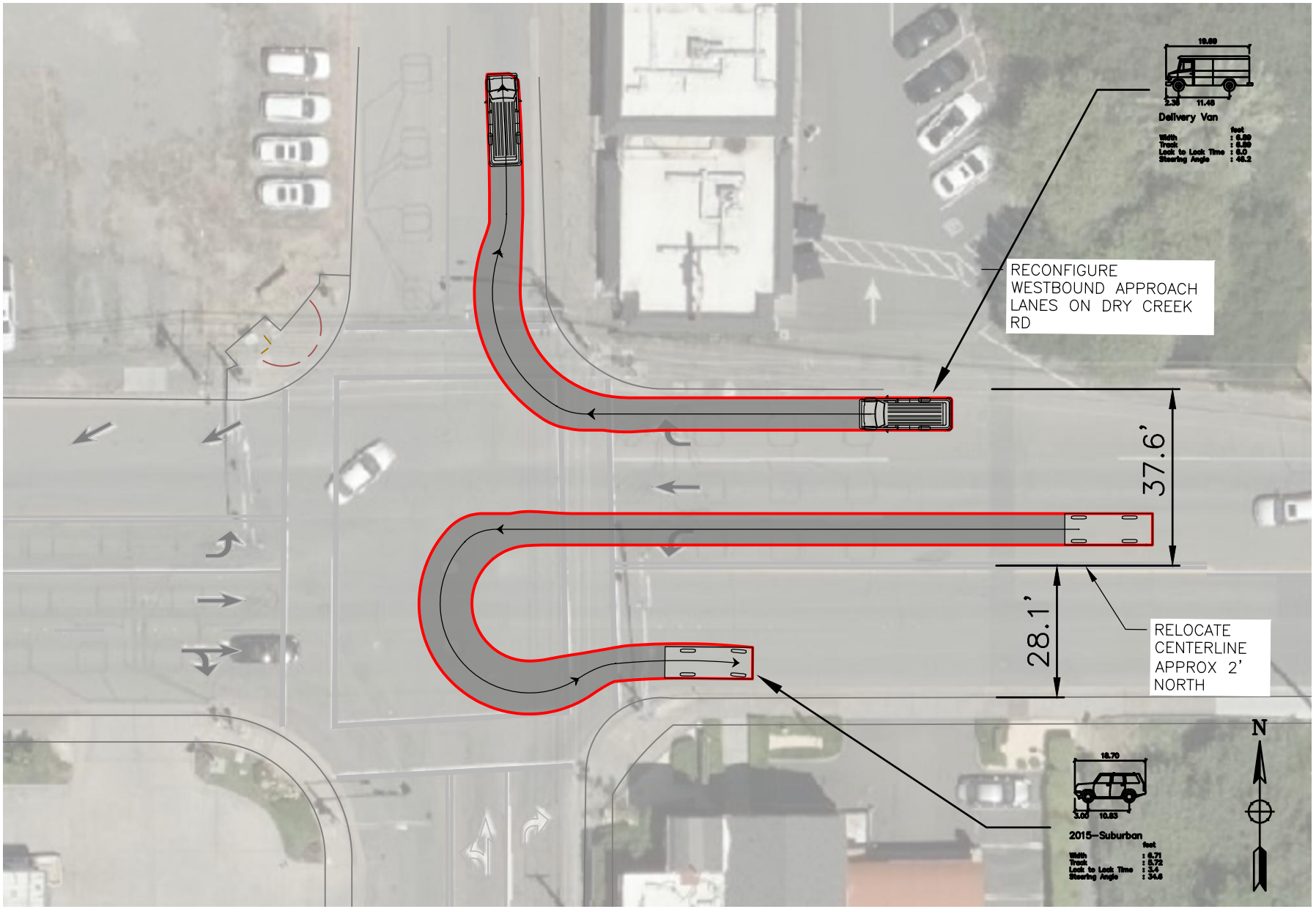
| | Collision Rate | Fatality Rate | Injury Rate |
|---|---|---|---|
| **Study Intersection** | **0.42 c/mve** | **0.0%** | **26.7%** |
| **Statewide Average*** | **0.24 c/mve** | **0.5%** | **46.9%** |

**Notes**
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2018 Collision Data on California State Highways, Caltrans

# Appendix B

## U-Turn Exhibit

This page intentionally left blank




PRELIMINARY
NOT FOR CONSTRUCTION

W-Trans

# DRY CREEK RD WESTBOUND U–TURN AND RIGHT–TURN

HEA077–155 DRY CREEK RD

4/8/2022

This page intentionally left blank

# Appendix C

## Intersection Level of Service Calculations

This page intentionally left blank

**Intersection Level Of Service Report**
**Intersection 1: US 101 S Ramps/Dry Creek Rd**

| | | | |
|---|---|---|---|
| Control Type: | All-way stop | Delay (sec / veh): | 16.6 |
| Analysis Method: | HCM 2010 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.790 |

**Intersection Setup**

| Name | US 101 S On-Ramps | | | US 101 S Off-Ramps | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 25.00 | 100.00 | 100.00 | 50.00 | 200.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 55.00 | | | 45.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | US 101 S On-Ramps | | | US 101 S Off-Ramps | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 94 | 0 | 19 | 0 | 167 | 76 | 494 | 244 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 94 | 0 | 19 | 0 | 167 | 76 | 494 | 244 | 0 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 0.9100 | 0.9100 | 0.9100 | 1.0000 | 0.9100 | 0.9100 | 0.9100 | 0.9100 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 26 | 0 | 5 | 0 | 46 | 21 | 136 | 67 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 103 | 0 | 21 | 0 | 184 | 84 | 543 | 268 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Settings**

**Lanes**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Capacity per Entry Lane [veh/h] | | 496 | 595 | 680 | 785 | 687 | 760 |
| Degree of Utilization, x | | 0.21 | 0.04 | 0.27 | 0.11 | 0.79 | 0.35 |

**Movement, Approach, & Intersection Results**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 95th-Percentile Queue Length [veh] | | 0.77 | 0.11 | 1.09 | 0.36 | 7.87 | 1.59 |
| 95th-Percentile Queue Length [ft] | | 19.33 | 2.74 | 27.31 | 8.96 | 196.69 | 39.85 |
| Approach Delay [s/veh] | 0.00 | 11.35 | | 9.28 | | 19.84 | |
| Approach LOS | A | B | | A | | C | |
| Intersection Delay [s/veh] | 16.62 | | | | | | |
| Intersection LOS | C | | | | | | |

**Intersection Level Of Service Report**
**Intersection 2: US 101 N Ramps/Dry Creek Rd**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 51.5 |
| Analysis Method: | HCM 2010 | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.663 |

**Intersection Setup**

| Name | US 101 N Off-Ramps | | | US 101 N On-Ramps | | | Dry Creek Rd | | | Dry Creek Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 55.00 | 100.00 | 100.00 | 100.00 | 95.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 55.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | US 101 N Off-Ramps | | | US 101 N On-Ramps | | | Dry Creek Rd | | | Dry Creek Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 125 | 2 | 572 | 0 | 0 | 0 | 8 | 254 | 0 | 0 | 605 | 103 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 125 | 2 | 572 | 0 | 0 | 0 | 8 | 254 | 0 | 0 | 605 | 103 |
| Peak Hour Factor | 0.9000 | 0.9000 | 0.9000 | 1.0000 | 1.0000 | 1.0000 | 0.9000 | 0.9000 | 1.0000 | 1.0000 | 0.9000 | 0.9000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 35 | 1 | 159 | 0 | 0 | 0 | 2 | 71 | 0 | 0 | 168 | 29 |
| Total Analysis Volume [veh/h] | 139 | 2 | 636 | 0 | 0 | 0 | 9 | 282 | 0 | 0 | 672 | 114 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Settings**

| Priority Scheme | Stop | | | Stop | | | Free | | | Free | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flared Lane | | | | | | | | | | | | |
| Storage Area [veh] | 2 | | | 0 | | | 0 | | | 0 | | |
| Two-Stage Gap Acceptance | No | | | | | | | | | | | |
| Number of Storage Spaces in Median | 0 | | | 0 | | | 0 | | | 0 | | |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.66 | 0.01 | 0.84 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 51.51 | 51.17 | 29.40 | 0.00 | 0.00 | 0.00 | 9.37 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | F | F | D | | | | A | A | | | A | A |
| 95th-Percentile Queue Length [veh/ln] | 4.15 | 4.15 | 9.64 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 103.71 | 103.71 | 240.91 | 0.00 | 0.00 | 0.00 | 0.82 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 33.41 | | | 0.00 | | | 0.29 | | | 0.00 | | |
| Approach LOS | D | | | A | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 14.05 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Dry Creek Rd/Grove St**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 29.0 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.784 |

**Intersection Setup**

| Name | Grove St | | | Grove St | | | Dry Creek Road | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 200.00 | 100.00 | 100.00 | 100.00 | 90.00 | 100.00 | 265.00 | 140.00 | 100.00 | 140.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Volumes**

| Name | Grove St | | | Grove St | | | Dry Creek Road | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 86 | 36 | 41 | 20 | 71 | 145 | 106 | 555 | 125 | 64 | 448 | 31 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 14 | 0 | 0 | 67 | 0 | 0 | 27 | 0 | 0 | 3 |
| Total Hourly Volume [veh/h] | 86 | 36 | 27 | 20 | 71 | 78 | 106 | 555 | 98 | 64 | 448 | 28 |
| Peak Hour Factor | 0.8700 | 0.8700 | 0.8700 | 0.8700 | 0.8700 | 0.8700 | 0.8700 | 0.8700 | 0.8700 | 0.8700 | 0.8700 | 0.8700 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 25 | 10 | 8 | 6 | 20 | 22 | 30 | 159 | 28 | 18 | 129 | 8 |
| Total Analysis Volume [veh/h] | 99 | 41 | 31 | 23 | 82 | 90 | 122 | 638 | 113 | 74 | 515 | 32 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 2 | | | 0 | | | 0 | | | 2 | | |
| v_di, Inbound Pedestrian Volume crossing major street | 2 | | | 0 | | | 0 | | | 2 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 2 | | | 0 | | | 2 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street | 2 | | | 0 | | | 2 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 4 | | | 1 | | | 3 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | Yes |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 85.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Permis | Permis | Permis | Permis | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 7 | 6 | 0 | 7 | 7 | 0 |
| Maximum Green [s] | 0 | 15 | 0 | 0 | 15 | 0 | 10 | 30 | 0 | 10 | 30 | 0 |
| Amber [s] | 0.0 | 3.7 | 0.0 | 0.0 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 |
| All red [s] | 0.0 | 1.4 | 0.0 | 0.0 | 1.4 | 0.0 | 1.9 | 1.0 | 0.0 | 1.9 | 1.0 | 0.0 |
| Split [s] | 0 | 57 | 0 | 0 | 35 | 0 | 15 | 48 | 0 | 15 | 48 | 0 |
| Vehicle Extension [s] | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 13 | 0 | 0 | 2 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Minimum Recall | | No | | | No | | No | No | | No | No | |
| Maximum Recall | | No | | | No | | No | No | | No | No | |
| Pedestrian Recall | | No | | | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

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



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Lane Group Calculations**

| Lane Group | C | R | C | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| g_i, Effective Green Time [s] | 35 | 35 | 35 | 14 | 74 | 74 | 12 | 71 | 71 |
| g / C, Green / Cycle | 0.29 | 0.29 | 0.29 | 0.11 | 0.61 | 0.61 | 0.10 | 0.59 | 0.59 |
| (v / s)_i Volume / Saturation Flow Rate | 0.33 | 0.02 | 0.32 | 0.08 | 0.23 | 0.23 | 0.05 | 0.31 | 0.02 |
| s, saturation flow rate [veh/h] | 420 | 1403 | 603 | 1603 | 1683 | 1582 | 1603 | 1683 | 1431 |
| c, Capacity [veh/h] | 173 | 408 | 209 | 183 | 1032 | 970 | 154 | 1002 | 851 |
| d1, Uniform Delay [s] | 44.04 | 30.86 | 36.51 | 50.95 | 11.63 | 11.66 | 51.42 | 14.17 | 10.06 |
| k, delay calibration | 0.50 | 0.04 | 0.24 | 0.28 | 0.50 | 0.50 | 0.04 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 31.90 | 0.03 | 29.61 | 10.30 | 1.03 | 1.12 | 0.87 | 1.89 | 0.08 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.81 | 0.08 | 0.93 | 0.67 | 0.37 | 0.38 | 0.48 | 0.51 | 0.04 |
| d, Delay for Lane Group [s/veh] | 75.94 | 30.89 | 66.12 | 61.25 | 12.66 | 12.77 | 52.28 | 16.06 | 10.14 |
| Lane Group LOS | E | C | E | E | B | B | D | B | B |
| Critical Lane Group | No | No | Yes | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 6.00 | 0.66 | 6.35 | 4.04 | 5.30 | 5.06 | 2.15 | 8.41 | 0.37 |
| 50th-Percentile Queue Length [ft/ln] | 149.92 | 16.51 | 158.73 | 101.04 | 132.58 | 126.61 | 53.78 | 210.29 | 9.19 |
| 95th-Percentile Queue Length [veh/ln] | 10.01 | 1.19 | 10.48 | 7.28 | 9.08 | 8.76 | 3.87 | 13.17 | 0.66 |
| 95th-Percentile Queue Length [ft/ln] | 250.32 | 29.73 | 262.03 | 181.88 | 226.99 | 218.88 | 96.81 | 329.20 | 16.53 |

**Movement, Approach, & Intersection Results**

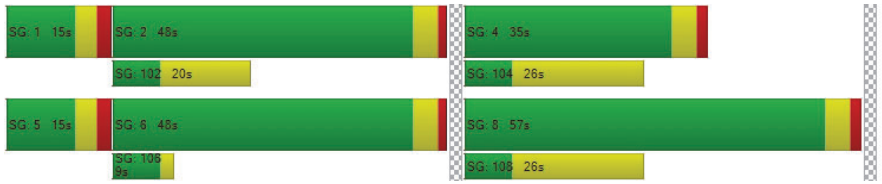
| d_M, Delay for Movement [s/veh] | 75.94 | 75.94 | 30.89 | 66.12 | 66.12 | 66.12 | 61.25 | 12.71 | 12.77 | 52.28 | 16.06 | 10.14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | E | E | C | E | E | E | E | B | B | D | B | B |
| d_A, Approach Delay [s/veh] | 67.77 | | | 66.12 | | | 19.50 | | | 20.07 | | |
| Approach LOS | E | | | E | | | B | | | C | | |
| d_I, Intersection Delay [s/veh] | 29.01 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.784 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 1793.81 | 0.00 | 0.00 | 1670.71 |
| d_p, Pedestrian Delay [s] | 49.50 | 49.50 | 49.50 | 49.50 |
| l_p,int, Pedestrian LOS Score for Intersection | 2.130 | 2.048 | 2.731 | 2.610 |
| Crosswalk LOS | B | B | B | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 865 | 498 | 722 | 722 |
| d_b, Bicycle Delay [s] | 19.36 | 33.84 | 24.55 | 24.51 |
| l_b,int, Bicycle LOS Score for Intersection | 1.865 | 1.992 | 2.302 | 2.589 |
| Bicycle LOS | A | A | B | B |

**Sequence**

| Ring 1 | 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |








**Intersection Level Of Service Report**
**Intersection 4: Dry Creek Rd-March Ave/Healdsburg Ave**

| Control Type: | Signalized | Delay (sec / veh): | 38.6 |
|---|---|---|---|
| Analysis Method: | HCM 6th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.515 |

**Intersection Setup**

| Name | Healdsburg Ave | | | Healdsburg Ave | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 165.00 | 100.00 | 100.00 | 140.00 | 100.00 | 100.00 | 115.00 | 100.00 | 100.00 | 115.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 35.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Healdsburg Ave | | | Healdsburg Ave | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 201 | 197 | 36 | 56 | 253 | 117 | 131 | 236 | 189 | 64 | 189 | 36 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 16 | 0 | 0 | 46 | 0 | 0 | 91 | 0 | 0 | 12 |
| Total Hourly Volume [veh/h] | 201 | 197 | 20 | 56 | 253 | 71 | 131 | 236 | 98 | 64 | 189 | 24 |
| Peak Hour Factor | 0.8600 | 0.8600 | 0.8600 | 0.8600 | 0.8600 | 0.8600 | 0.8600 | 0.8600 | 0.8600 | 0.8600 | 0.8600 | 0.8600 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 58 | 57 | 6 | 16 | 74 | 21 | 38 | 69 | 28 | 19 | 55 | 7 |
| Total Analysis Volume [veh/h] | 234 | 229 | 23 | 65 | 294 | 83 | 152 | 274 | 114 | 74 | 220 | 28 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 2 | | | 1 | | | 2 | | | 1 | | |
| v_di, Inbound Pedestrian Volume crossing major street [ | 2 | | | 1 | | | 2 | | | 1 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 1 | | | 3 | | | 4 | | | 1 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ | 1 | | | 4 | | | 3 | | | 1 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 1 | | | 2 | | | 1 | | | 0 | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Protect | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 7 | 4 | 0 | 3 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lag | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 7 | 0 | 8 | 8 | 0 | 7 | 8 | 0 | 8 | 8 | 0 |
| Maximum Green [s] | 16 | 30 | 0 | 16 | 30 | 0 | 16 | 30 | 0 | 16 | 30 | 0 |
| Amber [s] | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 |
| All red [s] | 2.0 | 1.3 | 0.0 | 2.0 | 1.3 | 0.0 | 2.0 | 1.4 | 0.0 | 2.0 | 1.4 | 0.0 |
| Split [s] | 25 | 43 | 0 | 17 | 35 | 0 | 25 | 45 | 0 | 15 | 35 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 19 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | R | L | C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| g_i, Effective Green Time [s] | 65 | 72 | 72 | 12 | 19 | 19 | 15 | 23 | 23 | 13 | 21 |
| g / C, Green / Cycle | 0.54 | 0.60 | 0.60 | 0.10 | 0.16 | 0.16 | 0.12 | 0.19 | 0.19 | 0.10 | 0.17 |
| (v / s)_i Volume / Saturation Flow Rate | 0.13 | 0.07 | 0.07 | 0.04 | 0.10 | 0.11 | 0.09 | 0.15 | 0.07 | 0.04 | 0.14 |
| s, saturation flow rate [veh/h] | 1741 | 1870 | 1802 | 1781 | 1870 | 1691 | 1781 | 1870 | 1559 | 1781 | 1833 |
| c, Capacity [veh/h] | 947 | 1118 | 1078 | 183 | 294 | 266 | 222 | 363 | 303 | 187 | 320 |
| d1, Uniform Delay [s] | 14.43 | 10.41 | 10.42 | 50.09 | 47.51 | 47.77 | 50.25 | 45.62 | 41.94 | 50.13 | 47.25 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.62 | 0.21 | 0.22 | 0.43 | 0.94 | 1.19 | 1.40 | 1.20 | 0.29 | 0.50 | 1.53 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| X, volume / capacity | 0.25 | 0.11 | 0.12 | 0.35 | 0.66 | 0.69 | 0.69 | 0.75 | 0.38 | 0.40 | 0.77 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d, Delay for Lane Group [s/veh] | 15.06 | 10.61 | 10.64 | 50.52 | 48.45 | 48.96 | 51.65 | 46.82 | 42.23 | 50.63 | 48.77 |
| Lane Group LOS | B | B | B | D | D | D | D | D | D | D | D |
| Critical Lane Group | Yes | No | No | No | No | Yes | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 3.49 | 1.50 | 1.47 | 1.83 | 5.47 | 5.23 | 4.46 | 7.81 | 2.97 | 2.11 | 7.20 |
| 50th-Percentile Queue Length [ft/ln] | 87.34 | 37.54 | 36.74 | 45.74 | 136.81 | 130.63 | 111.39 | 195.35 | 74.17 | 52.68 | 179.95 |
| 95th-Percentile Queue Length [veh/ln] | 6.29 | 2.70 | 2.65 | 3.29 | 9.31 | 8.97 | 7.92 | 12.40 | 5.34 | 3.79 | 11.60 |
| 95th-Percentile Queue Length [ft/ln] | 157.21 | 67.58 | 66.14 | 82.33 | 232.73 | 224.35 | 197.93 | 309.95 | 133.50 | 94.83 | 289.95 |





**Movement, Approach, & Intersection Results**

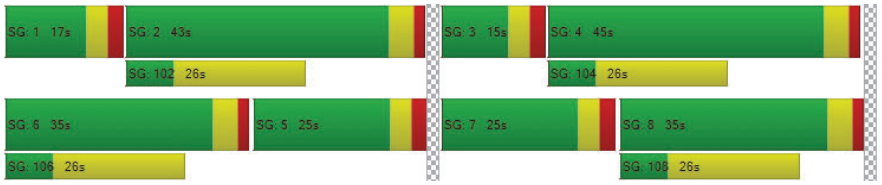
| d_M, Delay for Movement [s/veh] | 15.06 | 10.62 | 10.64 | 50.52 | 48.63 | 48.96 | 51.65 | 46.82 | 42.23 | 50.63 | 48.77 | 48.77 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | B | B | B | D | D | D | D | D | D | D | D | D |
| d_A, Approach Delay [s/veh] | 12.76 | | | 48.97 | | | 47.21 | | | 49.20 | | |
| Approach LOS | B | | | D | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 38.65 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.515 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 49.49 | 49.49 | 49.49 | 49.49 |
| I_p,int, Pedestrian LOS Score for Intersection | 2.546 | 2.586 | 2.570 | 2.202 |
| Crosswalk LOS | B | B | B | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 633 | 500 | 665 | 498 |
| d_b, Bicycle Delay [s] | 28.02 | 33.77 | 26.73 | 33.81 |
| I_b,int, Bicycle LOS Score for Intersection | 1.974 | 1.962 | 2.601 | 2.111 |
| Bicycle LOS | A | A | B | B |

**Sequence**

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 1: US 101 S Ramps/Dry Creek Rd**

| | | | |
|---|---|---|---|
| Control Type: | All-way stop | Delay (sec / veh): | 23.2 |
| Analysis Method: | HCM 2010 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.914 |

**Intersection Setup**

| Name | US 101 S On-Ramps | | | US 101 S Off-Ramps | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 25.00 | 100.00 | 100.00 | 50.00 | 200.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 55.00 | | | 45.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | US 101 S On-Ramps | | | US 101 S Off-Ramps | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 80 | 1 | 33 | 0 | 227 | 173 | 568 | 208 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 80 | 1 | 33 | 0 | 227 | 173 | 568 | 208 | 0 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 0.9300 | 0.9300 | 0.9300 | 1.0000 | 0.9300 | 0.9300 | 0.9300 | 0.9300 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 22 | 0 | 9 | 0 | 61 | 47 | 153 | 56 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 86 | 1 | 35 | 0 | 244 | 186 | 611 | 224 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Settings**

**Lanes**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Capacity per Entry Lane [veh/h] | 474 | 563 | 676 | 778 | 668 | 736 |
| Degree of Utilization, x | 0.18 | 0.06 | 0.36 | 0.24 | 0.91 | 0.30 |

**Movement, Approach, & Intersection Results**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 95th-Percentile Queue Length [veh] | 0.67 | 0.20 | 1.64 | 0.93 | 11.98 | 1.29 |
| 95th-Percentile Queue Length [ft] | 16.63 | 4.96 | 41.10 | 23.25 | 299.49 | 32.13 |
| Approach Delay [s/veh] | 0.00 | 11.28 | | 10.04 | | 31.66 | |
| Approach LOS | A | B | | B | | D | |
| Intersection Delay [s/veh] | 23.16 | | | | | | |
| Intersection LOS | C | | | | | | |

**Intersection Level Of Service Report**
**Intersection 2: US 101 N Ramps/Dry Creek Rd**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 42.4 |
| Analysis Method: | HCM 2010 | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.408 |

**Intersection Setup**

| Name | US 101 N Off-Ramps | | | US 101 N On-Ramps | | | Dry Creek Rd | | | Dry Creek Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 55.00 | 100.00 | 100.00 | 100.00 | 95.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 55.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | US 101 N Off-Ramps | | | US 101 N On-Ramps | | | Dry Creek Rd | | | Dry Creek Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 62 | 0 | 456 | 0 | 0 | 0 | 14 | 296 | 0 | 0 | 714 | 221 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 62 | 0 | 456 | 0 | 0 | 0 | 14 | 296 | 0 | 0 | 714 | 221 |
| Peak Hour Factor | 0.9600 | 0.9600 | 0.9600 | 1.0000 | 1.0000 | 1.0000 | 0.9600 | 0.9600 | 1.0000 | 1.0000 | 0.9600 | 0.9600 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 16 | 0 | 119 | 0 | 0 | 0 | 4 | 77 | 0 | 0 | 186 | 58 |
| Total Analysis Volume [veh/h] | 65 | 0 | 475 | 0 | 0 | 0 | 15 | 308 | 0 | 0 | 744 | 230 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Settings**

| Priority Scheme | Stop | | | Stop | | | Free | | | Free | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flared Lane | | | | | | | | | | | | |
| Storage Area [veh] | 2 | | | 0 | | | 0 | | | 0 | | |
| Two-Stage Gap Acceptance | No | | | | | | | | | | | |
| Number of Storage Spaces in Median | 0 | | | 0 | | | 0 | | | 0 | | |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.41 | 0.00 | 0.65 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 42.38 | 42.97 | 18.54 | 0.00 | 0.00 | 0.00 | 10.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | E | E | C | | | | B | A | | | A | A |
| 95th-Percentile Queue Length [veh/ln] | 1.80 | 1.80 | 4.82 | 0.00 | 0.00 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 44.88 | 44.88 | 120.54 | 0.00 | 0.00 | 0.00 | 1.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 21.41 | | | 0.00 | | | 0.47 | | | 0.00 | | |
| Approach LOS | C | | | A | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 6.38 | | | | | | | | | | | |
| Intersection LOS | E | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Dry Creek Rd/Grove St**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 16.1 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.135 |

**Intersection Setup**

| Name | Grove St | | | Grove St | | | Dry Creek Road | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 200.00 | 100.00 | 100.00 | 100.00 | 90.00 | 100.00 | 265.00 | 140.00 | 100.00 | 140.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Volumes**

| Name | Grove St | | | Grove St | | | Dry Creek Road | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 172 | 54 | 108 | 16 | 71 | 158 | 113 | 500 | 119 | 72 | 572 | 22 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 59 | 0 | 0 | 57 | 0 | 0 | 28 | 0 | 0 | 10 |
| Total Hourly Volume [veh/h] | 172 | 54 | 49 | 16 | 71 | 101 | 113 | 500 | 91 | 72 | 572 | 12 |
| Peak Hour Factor | 0.9800 | 0.9800 | 0.9800 | 0.9800 | 0.9800 | 0.9800 | 0.9800 | 0.9800 | 0.9800 | 0.9800 | 0.9800 | 0.9800 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 44 | 14 | 13 | 4 | 18 | 26 | 29 | 128 | 23 | 18 | 146 | 3 |
| Total Analysis Volume [veh/h] | 176 | 55 | 50 | 16 | 72 | 103 | 115 | 510 | 93 | 73 | 584 | 12 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 2 | | | 0 | | | 0 | | | 2 | | |
| v_di, Inbound Pedestrian Volume crossing major street | 2 | | | 0 | | | 0 | | | 2 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 2 | | | 0 | | | 2 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street | 2 | | | 0 | | | 2 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 4 | | | 1 | | | 3 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | Yes |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 85.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Permis | Permis | Permis | Permis | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 7 | 6 | 0 | 7 | 7 | 0 |
| Maximum Green [s] | 0 | 15 | 0 | 0 | 15 | 0 | 10 | 30 | 0 | 10 | 30 | 0 |
| Amber [s] | 0.0 | 3.7 | 0.0 | 0.0 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 |
| All red [s] | 0.0 | 1.4 | 0.0 | 0.0 | 1.4 | 0.0 | 1.9 | 1.0 | 0.0 | 1.9 | 1.0 | 0.0 |
| Split [s] | 0 | 13 | 0 | 0 | 13 | 0 | 12 | 11 | 0 | 12 | 12 | 0 |
| Vehicle Extension [s] | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 13 | 0 | 0 | 2 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Minimum Recall | | No | | | No | | No | No | | No | No | |
| Maximum Recall | | No | | | No | | No | No | | No | No | |
| Pedestrian Recall | | No | | | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

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



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Lane Group Calculations**

| Lane Group | C | R | C | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 |
| L, Total Lost Time per Cycle [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| g_i, Effective Green Time [s] | 20 | 20 | 20 | 11 | 22 | 22 | 10 | 21 | 21 |
| g / C, Green / Cycle | 0.39 | 0.39 | 0.39 | 0.21 | 0.43 | 0.43 | 0.19 | 0.41 | 0.41 |
| (v / s)_i Volume / Saturation Flow Rate | 0.46 | 0.04 | 0.20 | 0.07 | 0.18 | 0.19 | 0.05 | 0.35 | 0.01 |
| s, saturation flow rate [veh/h] | 507 | 1406 | 974 | 1603 | 1683 | 1578 | 1603 | 1683 | 1431 |
| c, Capacity [veh/h] | 316 | 540 | 449 | 332 | 723 | 678 | 298 | 687 | 584 |
| d1, Uniform Delay [s] | 17.16 | 10.26 | 11.84 | 17.70 | 10.42 | 10.46 | 18.14 | 14.01 | 9.23 |
| k, delay calibration | 0.50 | 0.04 | 0.13 | 0.04 | 0.04 | 0.04 | 0.04 | 0.10 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 13.82 | 0.03 | 0.80 | 0.23 | 0.15 | 0.16 | 0.16 | 2.88 | 0.01 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.73 | 0.09 | 0.43 | 0.35 | 0.43 | 0.43 | 0.24 | 0.85 | 0.02 |
| d, Delay for Lane Group [s/veh] | 30.98 | 10.29 | 12.63 | 17.93 | 10.57 | 10.62 | 18.29 | 16.90 | 9.23 |
| Lane Group LOS | C | B | B | B | B | B | B | B | A |
| Critical Lane Group | Yes | No | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 3.79 | 0.32 | 1.42 | 1.09 | 2.07 | 1.98 | 0.69 | 5.65 | 0.07 |
| 50th-Percentile Queue Length [ft/ln] | 94.69 | 7.91 | 35.41 | 27.20 | 51.81 | 49.45 | 17.37 | 141.22 | 1.75 |
| 95th-Percentile Queue Length [veh/ln] | 6.82 | 0.57 | 2.55 | 1.96 | 3.73 | 3.56 | 1.25 | 9.55 | 0.13 |
| 95th-Percentile Queue Length [ft/ln] | 170.44 | 14.24 | 63.75 | 48.95 | 93.27 | 89.02 | 31.27 | 238.67 | 3.14 |

**Movement, Approach, & Intersection Results**

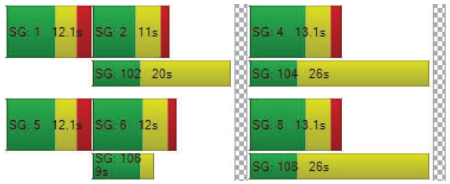
| d_M, Delay for Movement [s/veh] | 30.98 | 30.98 | 10.29 | 12.63 | 12.63 | 12.63 | 17.93 | 10.59 | 10.62 | 18.29 | 16.90 | 9.23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | C | C | B | B | B | B | B | B | B | B | B | A |
| d_A, Approach Delay [s/veh] | 27.30 | | | 12.63 | | | 11.77 | | | 16.91 | | |
| Approach LOS | C | | | B | | | B | | | B | | |
| d_I, Intersection Delay [s/veh] | 16.06 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 1.135 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 4771.27 | 0.00 | 0.00 | 4196.95 |
| d_p, Pedestrian Delay [s] | 16.25 | 16.25 | 16.25 | 16.25 |
| l_p,int, Pedestrian LOS Score for Intersection | 2.190 | 1.980 | 2.796 | 2.562 |
| Crosswalk LOS | B | A | C | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 307 | 307 | 241 | 280 |
| d_b, Bicycle Delay [s] | 18.74 | 18.72 | 20.20 | 19.30 |
| l_b,int, Bicycle LOS Score for Intersection | 2.121 | 1.969 | 2.175 | 2.680 |
| Bicycle LOS | B | A | B | B |

**Sequence**

| Ring 1 | 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |






Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Level Of Service Report**
**Intersection 4: Dry Creek Rd-March Ave/Healdsburg Ave**

| Control Type: | Signalized | Delay (sec / veh): | 16.6 |
|---|---|---|---|
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.739 |

**Intersection Setup**

| Name | Healdsburg Ave | | | Healdsburg Ave | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 165.00 | 100.00 | 100.00 | 140.00 | 100.00 | 100.00 | 115.00 | 100.00 | 100.00 | 115.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 35.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Healdsburg Ave | | | Healdsburg Ave | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 193 | 274 | 59 | 76 | 311 | 163 | 167 | 186 | 175 | 57 | 249 | 39 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 12 | 0 | 0 | 53 | 0 | 0 | 82 | 0 | 0 | 15 |
| Total Hourly Volume [veh/h] | 193 | 274 | 47 | 76 | 311 | 110 | 167 | 186 | 93 | 57 | 249 | 24 |
| Peak Hour Factor | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 58 | 83 | 14 | 23 | 94 | 33 | 50 | 56 | 28 | 17 | 75 | 7 |
| Total Analysis Volume [veh/h] | 233 | 330 | 57 | 92 | 375 | 133 | 201 | 224 | 112 | 69 | 300 | 29 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 2 | | | 1 | | | 2 | | | 1 | | |
| v_di, Inbound Pedestrian Volume crossing major street [ | 2 | | | 1 | | | 2 | | | 1 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 1 | | | 3 | | | 4 | | | 1 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ | 1 | | | 4 | | | 3 | | | 1 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 1 | | | 2 | | | 1 | | | 0 | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Protect | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 7 | 4 | 0 | 3 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lag | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 7 | 0 | 8 | 8 | 0 | 7 | 8 | 0 | 8 | 8 | 0 |
| Maximum Green [s] | 16 | 30 | 0 | 16 | 30 | 0 | 16 | 30 | 0 | 16 | 30 | 0 |
| Amber [s] | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 |
| All red [s] | 2.0 | 1.3 | 0.0 | 2.0 | 1.3 | 0.0 | 2.0 | 1.4 | 0.0 | 2.0 | 1.4 | 0.0 |
| Split [s] | 13 | 12 | 0 | 13 | 13 | 0 | 12 | 13 | 0 | 13 | 13 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 19 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | R | L | C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 |
| L, Total Lost Time per Cycle [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| g_i, Effective Green Time [s] | 13 | 16 | 16 | 11 | 14 | 14 | 12 | 15 | 15 | 10 | 14 |
| g / C, Green / Cycle | 0.25 | 0.30 | 0.30 | 0.21 | 0.27 | 0.27 | 0.23 | 0.29 | 0.29 | 0.20 | 0.26 |
| (v / s)_i Volume / Saturation Flow Rate | 0.13 | 0.11 | 0.11 | 0.05 | 0.14 | 0.15 | 0.11 | 0.12 | 0.07 | 0.04 | 0.18 |
| s, saturation flow rate [veh/h] | 1757 | 1870 | 1761 | 1781 | 1870 | 1670 | 1781 | 1870 | 1563 | 1781 | 1841 |
| c, Capacity [veh/h] | 433 | 559 | 527 | 378 | 496 | 443 | 401 | 546 | 457 | 350 | 485 |
| d1, Uniform Delay [s] | 17.24 | 14.46 | 14.49 | 17.22 | 16.55 | 16.65 | 17.80 | 14.98 | 14.18 | 17.68 | 17.39 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.39 | 0.14 | 0.15 | 0.12 | 0.33 | 0.40 | 0.36 | 0.18 | 0.10 | 0.10 | 0.62 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| X, volume / capacity | 0.54 | 0.35 | 0.36 | 0.24 | 0.53 | 0.55 | 0.50 | 0.41 | 0.25 | 0.20 | 0.68 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d, Delay for Lane Group [s/veh] | 17.62 | 14.60 | 14.64 | 17.35 | 16.88 | 17.05 | 18.16 | 15.16 | 14.29 | 17.78 | 18.01 |
| Lane Group LOS | B | B | B | B | B | B | B | B | B | B | B |
| Critical Lane Group | Yes | No | No | No | No | Yes | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 2.22 | 1.64 | 1.58 | 0.83 | 2.38 | 2.22 | 1.95 | 1.92 | 0.91 | 0.64 | 3.24 |
| 50th-Percentile Queue Length [ft/ln] | 55.61 | 41.12 | 39.41 | 20.65 | 59.61 | 55.58 | 48.67 | 48.07 | 22.76 | 16.11 | 80.95 |
| 95th-Percentile Queue Length [veh/ln] | 4.00 | 2.96 | 2.84 | 1.49 | 4.29 | 4.00 | 3.50 | 3.46 | 1.64 | 1.16 | 5.83 |
| 95th-Percentile Queue Length [ft/ln] | 100.10 | 74.01 | 70.94 | 37.18 | 107.31 | 100.04 | 87.60 | 86.53 | 40.96 | 29.00 | 145.70 |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Movement, Approach, & Intersection Results**

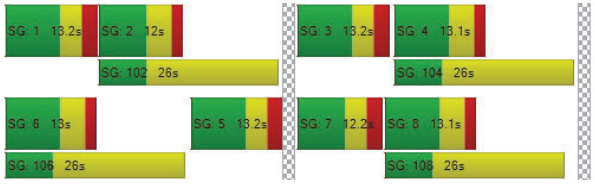
| d_M, Delay for Movement [s/veh] | 17.62 | 14.62 | 14.64 | 17.35 | 16.93 | 17.05 | 18.16 | 15.16 | 14.29 | 17.78 | 18.01 | 18.01 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | B | B | B | B | B | B | B | B | B | B | B | B |
| d_A, Approach Delay [s/veh] | 15.75 | | | 17.02 | | | 16.10 | | | 17.97 | | |
| Approach LOS | B | | | B | | | B | | | B | | |
| d_I, Intersection Delay [s/veh] | 16.60 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.739 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 16.41 | 16.41 | 16.41 | 16.41 |
| l_p,int, Pedestrian LOS Score for Intersection | 2.534 | 2.624 | 2.543 | 2.190 |
| Crosswalk LOS | B | B | B | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 267 | 305 | 305 | 305 |
| d_b, Bicycle Delay [s] | 19.74 | 18.89 | 18.88 | 18.87 |
| l_b,int, Bicycle LOS Score for Intersection | 2.081 | 2.098 | 2.581 | 2.241 |
| Bicycle LOS | B | B | B | B |

**Sequence**

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 1: US 101 S Ramps/Dry Creek Rd**

| | | | |
|---|---|---|---|
| Control Type: | All-way stop | Delay (sec / veh): | 17.4 |
| Analysis Method: | HCM 2010 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.808 |

**Intersection Setup**

| Name | US 101 S On-Ramps | | | US 101 S Off-Ramps | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 25.00 | 100.00 | 100.00 | 50.00 | 200.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 55.00 | | | 45.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | US 101 S On-Ramps | | | US 101 S Off-Ramps | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 94 | 0 | 19 | 0 | 167 | 76 | 494 | 244 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 94 | 0 | 19 | 0 | 167 | 76 | 505 | 244 | 0 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 0.9100 | 0.9100 | 0.9100 | 1.0000 | 0.9100 | 0.9100 | 0.9100 | 0.9100 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 26 | 0 | 5 | 0 | 46 | 21 | 139 | 67 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 103 | 0 | 21 | 0 | 184 | 84 | 555 | 268 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Settings**

**Lanes**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Capacity per Entry Lane [veh/h] | | 495 | 593 | 678 | 782 | 687 | 760 |
| Degree of Utilization, x | | 0.21 | 0.04 | 0.27 | 0.11 | 0.81 | 0.35 |

**Movement, Approach, & Intersection Results**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 95th-Percentile Queue Length [veh] | | 0.78 | 0.11 | 1.10 | 0.36 | 8.37 | 1.59 |
| 95th-Percentile Queue Length [ft] | | 19.40 | 2.75 | 27.40 | 8.99 | 209.19 | 39.86 |
| Approach Delay [s/veh] | 0.00 | 11.39 | | 9.30 | | 20.88 | |
| Approach LOS | A | B | | A | | C | |
| Intersection Delay [s/veh] | 17.36 | | | | | | |
| Intersection LOS | C | | | | | | |

**Intersection Level Of Service Report**
**Intersection 2: US 101 N Ramps/Dry Creek Rd**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 53.7 |
| Analysis Method: | HCM 2010 | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.675 |

**Intersection Setup**

| Name | US 101 N Off-Ramps | | | US 101 N On-Ramps | | | Dry Creek Rd | | | Dry Creek Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 55.00 | 100.00 | 100.00 | 100.00 | 95.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 55.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | US 101 N Off-Ramps | | | US 101 N On-Ramps | | | Dry Creek Rd | | | Dry Creek Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 125 | 2 | 572 | 0 | 0 | 0 | 8 | 254 | 0 | 0 | 605 | 103 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 125 | 2 | 575 | 0 | 0 | 0 | 8 | 254 | 0 | 0 | 616 | 103 |
| Peak Hour Factor | 0.9000 | 0.9000 | 0.9000 | 1.0000 | 1.0000 | 1.0000 | 0.9000 | 0.9000 | 1.0000 | 1.0000 | 0.9000 | 0.9000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 35 | 1 | 160 | 0 | 0 | 0 | 2 | 71 | 0 | 0 | 171 | 29 |
| Total Analysis Volume [veh/h] | 139 | 2 | 639 | 0 | 0 | 0 | 9 | 282 | 0 | 0 | 684 | 114 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Settings**

| Priority Scheme | Stop | | | Stop | | | Free | | | Free | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flared Lane | | | | | | | | | | | | |
| Storage Area [veh] | 2 | | | 0 | | | 0 | | | 0 | | |
| Two-Stage Gap Acceptance | No | | | | | | | | | | | |
| Number of Storage Spaces in Median | 0 | | | 0 | | | 0 | | | 0 | | |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.68 | 0.01 | 0.84 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 53.66 | 53.28 | 29.80 | 0.00 | 0.00 | 0.00 | 9.42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | F | F | D | | | | A | A | | | A | A |
| 95th-Percentile Queue Length [veh/ln] | 4.27 | 4.27 | 9.78 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 106.79 | 106.79 | 244.38 | 0.00 | 0.00 | 0.00 | 0.83 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 34.11 | | | 0.00 | | | 0.29 | | | 0.00 | | |
| Approach LOS | D | | | A | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 14.28 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Dry Creek Rd/Grove St**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 29.0 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.793 |

**Intersection Setup**

| Name | Grove St | | | Grove St | | | Dry Creek Road | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 200.00 | 100.00 | 100.00 | 100.00 | 90.00 | 100.00 | 265.00 | 140.00 | 100.00 | 140.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Volumes**

| Name | Grove St | | | Grove St | | | Dry Creek Road | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 86 | 36 | 41 | 20 | 71 | 145 | 106 | 555 | 125 | 64 | 448 | 31 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 11 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 14 | 0 | 0 | 67 | 0 | 0 | 27 | 0 | 0 | 3 |
| Total Hourly Volume [veh/h] | 86 | 36 | 28 | 20 | 71 | 78 | 106 | 558 | 98 | 67 | 459 | 28 |
| Peak Hour Factor | 0.8700 | 0.8700 | 0.8700 | 0.8700 | 0.8700 | 0.8700 | 0.8700 | 0.8700 | 0.8700 | 0.8700 | 0.8700 | 0.8700 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 25 | 10 | 8 | 6 | 20 | 22 | 30 | 160 | 28 | 19 | 132 | 8 |
| Total Analysis Volume [veh/h] | 99 | 41 | 32 | 23 | 82 | 90 | 122 | 641 | 113 | 77 | 528 | 32 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 2 | | | 0 | | | 0 | | | 2 | | |
| v_di, Inbound Pedestrian Volume crossing major street [ | 2 | | | 0 | | | 0 | | | 2 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 2 | | | 0 | | | 2 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ | 2 | | | 0 | | | 2 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 4 | | | 1 | | | 3 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | Yes |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 85.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Permis | Permis | Permis | Permis | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 7 | 6 | 0 | 7 | 7 | 0 |
| Maximum Green [s] | 0 | 15 | 0 | 0 | 15 | 0 | 10 | 30 | 0 | 10 | 30 | 0 |
| Amber [s] | 0.0 | 3.7 | 0.0 | 0.0 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 |
| All red [s] | 0.0 | 1.4 | 0.0 | 0.0 | 1.4 | 0.0 | 1.9 | 1.0 | 0.0 | 1.9 | 1.0 | 0.0 |
| Split [s] | 0 | 57 | 0 | 0 | 35 | 0 | 15 | 48 | 0 | 15 | 48 | 0 |
| Vehicle Extension [s] | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 13 | 0 | 0 | 2 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Minimum Recall | | No | | | No | | No | No | | No | No | |
| Maximum Recall | | No | | | No | | No | No | | No | No | |
| Pedestrian Recall | | No | | | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

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



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Lane Group Calculations**

| Lane Group | C | R | C | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| g_i, Effective Green Time [s] | 35 | 35 | 35 | 14 | 73 | 73 | 12 | 71 | 71 |
| g / C, Green / Cycle | 0.29 | 0.29 | 0.29 | 0.11 | 0.61 | 0.61 | 0.10 | 0.59 | 0.59 |
| (v / s)_i Volume / Saturation Flow Rate | 0.33 | 0.02 | 0.32 | 0.08 | 0.23 | 0.23 | 0.05 | 0.31 | 0.02 |
| s, saturation flow rate [veh/h] | 420 | 1403 | 603 | 1603 | 1683 | 1582 | 1603 | 1683 | 1431 |
| c, Capacity [veh/h] | 173 | 408 | 209 | 183 | 1032 | 970 | 154 | 1002 | 851 |
| d1, Uniform Delay [s] | 44.04 | 30.88 | 36.51 | 50.95 | 11.67 | 11.70 | 51.46 | 14.33 | 10.06 |
| k, delay calibration | 0.50 | 0.04 | 0.24 | 0.28 | 0.50 | 0.50 | 0.04 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 31.90 | 0.03 | 29.61 | 10.30 | 1.04 | 1.13 | 0.92 | 1.98 | 0.08 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.81 | 0.08 | 0.93 | 0.67 | 0.37 | 0.38 | 0.50 | 0.53 | 0.04 |
| d, Delay for Lane Group [s/veh] | 75.94 | 30.91 | 66.12 | 61.25 | 12.71 | 12.83 | 52.39 | 16.31 | 10.14 |
| Lane Group LOS | E | C | E | E | B | B | D | B | B |
| Critical Lane Group | No | No | Yes | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 6.00 | 0.68 | 6.35 | 4.04 | 5.34 | 5.10 | 2.24 | 8.73 | 0.37 |
| 50th-Percentile Queue Length [ft/ln] | 149.92 | 17.06 | 158.73 | 101.04 | 133.47 | 127.48 | 56.07 | 218.24 | 9.19 |
| 95th-Percentile Queue Length [veh/ln] | 10.01 | 1.23 | 10.48 | 7.28 | 9.13 | 8.80 | 4.04 | 13.57 | 0.66 |
| 95th-Percentile Queue Length [ft/ln] | 250.32 | 30.71 | 262.03 | 181.88 | 228.20 | 220.06 | 100.92 | 339.37 | 16.53 |

**Movement, Approach, & Intersection Results**

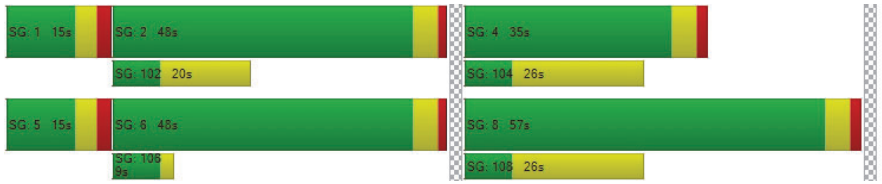
| d_M, Delay for Movement [s/veh] | 75.94 | 75.94 | 30.91 | 66.12 | 66.12 | 66.12 | 61.25 | 12.76 | 12.83 | 52.39 | 16.31 | 10.14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | E | E | C | E | E | E | E | B | B | D | B | B |
| d_A, Approach Delay [s/veh] | 67.56 | | | 66.12 | | | 19.52 | | | 20.37 | | |
| Approach LOS | E | | | E | | | B | | | C | | |
| d_I, Intersection Delay [s/veh] | 29.03 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.793 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 1793.81 | 0.00 | 0.00 | 1664.66 |
| d_p, Pedestrian Delay [s] | 49.50 | 49.50 | 49.50 | 49.50 |
| l_p,int, Pedestrian LOS Score for Intersection | 2.132 | 2.048 | 2.735 | 2.614 |
| Crosswalk LOS | B | B | B | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 865 | 498 | 722 | 722 |
| d_b, Bicycle Delay [s] | 19.36 | 33.84 | 24.55 | 24.51 |
| l_b,int, Bicycle LOS Score for Intersection | 1.867 | 1.992 | 2.305 | 2.616 |
| Bicycle LOS | A | A | B | B |

## Sequence

| Ring 1 | 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |








**Intersection Level Of Service Report**
**Intersection 4: Dry Creek Rd-March Ave/Healdsburg Ave**

| Control Type: | Signalized | Delay (sec / veh): | 38.7 |
|---|---|---|---|
| Analysis Method: | HCM 6th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.515 |

**Intersection Setup**

| Name | Healdsburg Ave | | | Healdsburg Ave | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 165.00 | 100.00 | 100.00 | 140.00 | 100.00 | 100.00 | 115.00 | 100.00 | 100.00 | 115.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 35.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Healdsburg Ave | | | Healdsburg Ave | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 201 | 197 | 36 | 56 | 253 | 117 | 131 | 236 | 189 | 64 | 189 | 36 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 16 | 0 | 0 | 46 | 0 | 0 | 91 | 0 | 0 | 12 |
| Total Hourly Volume [veh/h] | 201 | 197 | 20 | 56 | 253 | 71 | 131 | 237 | 100 | 64 | 189 | 24 |
| Peak Hour Factor | 0.8600 | 0.8600 | 0.8600 | 0.8600 | 0.8600 | 0.8600 | 0.8600 | 0.8600 | 0.8600 | 0.8600 | 0.8600 | 0.8600 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 58 | 57 | 6 | 16 | 74 | 21 | 38 | 69 | 29 | 19 | 55 | 7 |
| Total Analysis Volume [veh/h] | 234 | 229 | 23 | 65 | 294 | 83 | 152 | 276 | 116 | 74 | 220 | 28 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 2 | | | 1 | | | 2 | | | 1 | | |
| v_di, Inbound Pedestrian Volume crossing major street [ | 2 | | | 1 | | | 2 | | | 1 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 1 | | | 3 | | | 4 | | | 1 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ | 1 | | | 4 | | | 3 | | | 1 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 1 | | | 2 | | | 1 | | | 0 | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Protect | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 7 | 4 | 0 | 3 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lag | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 7 | 0 | 8 | 8 | 0 | 7 | 8 | 0 | 8 | 8 | 0 |
| Maximum Green [s] | 16 | 30 | 0 | 16 | 30 | 0 | 16 | 30 | 0 | 16 | 30 | 0 |
| Amber [s] | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 |
| All red [s] | 2.0 | 1.3 | 0.0 | 2.0 | 1.3 | 0.0 | 2.0 | 1.4 | 0.0 | 2.0 | 1.4 | 0.0 |
| Split [s] | 25 | 43 | 0 | 17 | 35 | 0 | 25 | 45 | 0 | 15 | 35 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 19 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | R | L | C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| g_i, Effective Green Time [s] | 65 | 72 | 72 | 12 | 19 | 19 | 15 | 23 | 23 | 13 | 21 |
| g / C, Green / Cycle | 0.54 | 0.60 | 0.60 | 0.10 | 0.16 | 0.16 | 0.12 | 0.19 | 0.19 | 0.10 | 0.17 |
| (v / s)_i Volume / Saturation Flow Rate | 0.13 | 0.07 | 0.07 | 0.04 | 0.10 | 0.11 | 0.09 | 0.15 | 0.07 | 0.04 | 0.14 |
| s, saturation flow rate [veh/h] | 1741 | 1870 | 1802 | 1781 | 1870 | 1691 | 1781 | 1870 | 1559 | 1781 | 1833 |
| c, Capacity [veh/h] | 947 | 1118 | 1078 | 183 | 294 | 266 | 222 | 363 | 303 | 187 | 320 |
| d1, Uniform Delay [s] | 14.43 | 10.41 | 10.42 | 50.09 | 47.51 | 47.77 | 50.25 | 45.67 | 42.00 | 50.13 | 47.25 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.62 | 0.21 | 0.22 | 0.43 | 0.94 | 1.19 | 1.40 | 1.24 | 0.29 | 0.50 | 1.53 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| X, volume / capacity | 0.25 | 0.11 | 0.12 | 0.35 | 0.66 | 0.69 | 0.69 | 0.76 | 0.38 | 0.40 | 0.77 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d, Delay for Lane Group [s/veh] | 15.06 | 10.61 | 10.64 | 50.52 | 48.45 | 48.96 | 51.65 | 46.91 | 42.29 | 50.63 | 48.77 |
| Lane Group LOS | B | B | B | D | D | D | D | D | D | D | D |
| Critical Lane Group | Yes | No | No | No | No | Yes | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 3.49 | 1.50 | 1.47 | 1.83 | 5.47 | 5.23 | 4.46 | 7.88 | 3.02 | 2.11 | 7.20 |
| 50th-Percentile Queue Length [ft/ln] | 87.34 | 37.54 | 36.74 | 45.74 | 136.81 | 130.63 | 111.39 | 197.08 | 75.58 | 52.68 | 179.95 |
| 95th-Percentile Queue Length [veh/ln] | 6.29 | 2.70 | 2.65 | 3.29 | 9.31 | 8.97 | 7.92 | 12.49 | 5.44 | 3.79 | 11.60 |
| 95th-Percentile Queue Length [ft/ln] | 157.21 | 67.58 | 66.14 | 82.33 | 232.73 | 224.35 | 197.93 | 312.20 | 136.04 | 94.83 | 289.95 |





**Movement, Approach, & Intersection Results**

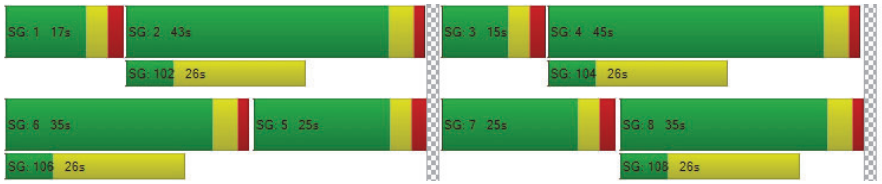
| d_M, Delay for Movement [s/veh] | 15.06 | 10.62 | 10.64 | 50.52 | 48.63 | 48.96 | 51.65 | 46.91 | 42.29 | 50.63 | 48.77 | 48.77 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | B | B | B | D | D | D | D | D | D | D | D | D |
| d_A, Approach Delay [s/veh] | 12.76 | | | 48.97 | | | 47.25 | | | 49.20 | | |
| Approach LOS | B | | | D | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 38.68 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.515 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 49.49 | 49.49 | 49.49 | 49.49 |
| I_p,int, Pedestrian LOS Score for Intersection | 2.546 | 2.586 | 2.571 | 2.203 |
| Crosswalk LOS | B | B | B | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 633 | 500 | 665 | 498 |
| d_b, Bicycle Delay [s] | 28.02 | 33.77 | 26.73 | 33.81 |
| I_b,int, Bicycle LOS Score for Intersection | 1.974 | 1.962 | 2.607 | 2.111 |
| Bicycle LOS | A | A | B | B |

**Sequence**

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 1: US 101 S Ramps/Dry Creek Rd**

| | | | |
|---|---|---|---|
| Control Type: | All-way stop | Delay (sec / veh): | 23.9 |
| Analysis Method: | HCM 2010 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.924 |

**Intersection Setup**

| Name | US 101 S On-Ramps | | | US 101 S Off-Ramps | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 25.00 | 100.00 | 100.00 | 50.00 | 200.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 55.00 | | | 45.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | US 101 S On-Ramps | | | US 101 S Off-Ramps | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 80 | 1 | 33 | 0 | 227 | 173 | 568 | 208 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 80 | 1 | 33 | 0 | 227 | 173 | 574 | 208 | 0 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 0.9300 | 0.9300 | 0.9300 | 1.0000 | 0.9300 | 0.9300 | 0.9300 | 0.9300 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 22 | 0 | 9 | 0 | 61 | 47 | 154 | 56 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 86 | 1 | 35 | 0 | 244 | 186 | 617 | 224 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Settings**

**Lanes**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Capacity per Entry Lane [veh/h] | | 473 | 562 | 676 | 778 | 668 | 736 |
| Degree of Utilization, x | | 0.18 | 0.06 | 0.36 | 0.24 | 0.92 | 0.30 |

**Movement, Approach, & Intersection Results**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 95th-Percentile Queue Length [veh] | | 0.67 | 0.20 | 1.65 | 0.93 | 12.35 | 1.29 |
| 95th-Percentile Queue Length [ft] | | 16.66 | 4.97 | 41.17 | 23.29 | 308.71 | 32.14 |
| Approach Delay [s/veh] | 0.00 | 11.30 | | 10.05 | | 32.84 | |
| Approach LOS | A | B | | B | | D | |
| Intersection Delay [s/veh] | 23.92 | | | | | | |
| Intersection LOS | C | | | | | | |

**Intersection Level Of Service Report**
**Intersection 2: US 101 N Ramps/Dry Creek Rd**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 43.0 |
| Analysis Method: | HCM 2010 | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.412 |

**Intersection Setup**

| Name | US 101 N Off-Ramps | | | US 101 N On-Ramps | | | Dry Creek Rd | | | Dry Creek Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 55.00 | 100.00 | 100.00 | 100.00 | 95.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 55.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | US 101 N Off-Ramps | | | US 101 N On-Ramps | | | Dry Creek Rd | | | Dry Creek Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 62 | 0 | 456 | 0 | 0 | 0 | 14 | 296 | 0 | 0 | 714 | 221 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 62 | 0 | 465 | 0 | 0 | 0 | 14 | 296 | 0 | 0 | 720 | 221 |
| Peak Hour Factor | 0.9600 | 0.9600 | 0.9600 | 1.0000 | 1.0000 | 1.0000 | 0.9600 | 0.9600 | 1.0000 | 1.0000 | 0.9600 | 0.9600 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 16 | 0 | 121 | 0 | 0 | 0 | 4 | 77 | 0 | 0 | 188 | 58 |
| Total Analysis Volume [veh/h] | 65 | 0 | 484 | 0 | 0 | 0 | 15 | 308 | 0 | 0 | 750 | 230 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Settings**

| Priority Scheme | Stop | | | Stop | | | Free | | | Free | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flared Lane | | | | | | | | | | | | |
| Storage Area [veh] | 2 | | | 0 | | | 0 | | | 0 | | |
| Two-Stage Gap Acceptance | No | | | | | | | | | | | |
| Number of Storage Spaces in Median | 0 | | | 0 | | | 0 | | | 0 | | |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.41 | 0.00 | 0.66 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 42.96 | 43.53 | 18.98 | 0.00 | 0.00 | 0.00 | 10.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | E | E | C | | | | B | A | | | A | A |
| 95th-Percentile Queue Length [veh/ln] | 1.82 | 1.82 | 5.04 | 0.00 | 0.00 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 45.45 | 45.45 | 125.92 | 0.00 | 0.00 | 0.00 | 1.63 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 21.82 | | | 0.00 | | | 0.47 | | | 0.00 | | |
| Approach LOS | C | | | A | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 6.55 | | | | | | | | | | | |
| Intersection LOS | E | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Dry Creek Rd/Grove St**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 16.2 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.138 |

**Intersection Setup**

| Name | Grove St | | | Grove St | | | Dry Creek Road | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 200.00 | 100.00 | 100.00 | 100.00 | 90.00 | 100.00 | 265.00 | 140.00 | 100.00 | 140.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Volumes**

| Name | Grove St | | | Grove St | | | Dry Creek Road | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 172 | 54 | 108 | 16 | 71 | 158 | 113 | 500 | 119 | 72 | 572 | 22 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 9 | 0 | 1 | 6 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 59 | 0 | 0 | 57 | 0 | 0 | 28 | 0 | 0 | 10 |
| Total Hourly Volume [veh/h] | 172 | 54 | 51 | 16 | 71 | 101 | 113 | 509 | 91 | 73 | 578 | 12 |
| Peak Hour Factor | 0.9800 | 0.9800 | 0.9800 | 0.9800 | 0.9800 | 0.9800 | 0.9800 | 0.9800 | 0.9800 | 0.9800 | 0.9800 | 0.9800 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 44 | 14 | 13 | 4 | 18 | 26 | 29 | 130 | 23 | 19 | 147 | 3 |
| Total Analysis Volume [veh/h] | 176 | 55 | 52 | 16 | 72 | 103 | 115 | 519 | 93 | 74 | 590 | 12 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 2 | | | 0 | | | 0 | | | 2 | | |
| v_di, Inbound Pedestrian Volume crossing major street | 2 | | | 0 | | | 0 | | | 2 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 2 | | | 0 | | | 2 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street | 2 | | | 0 | | | 2 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 4 | | | 1 | | | 3 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | Yes |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 85.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Permis | Permis | Permis | Permis | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 7 | 6 | 0 | 7 | 7 | 0 |
| Maximum Green [s] | 0 | 15 | 0 | 0 | 15 | 0 | 10 | 30 | 0 | 10 | 30 | 0 |
| Amber [s] | 0.0 | 3.7 | 0.0 | 0.0 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 |
| All red [s] | 0.0 | 1.4 | 0.0 | 0.0 | 1.4 | 0.0 | 1.9 | 1.0 | 0.0 | 1.9 | 1.0 | 0.0 |
| Split [s] | 0 | 13 | 0 | 0 | 13 | 0 | 12 | 11 | 0 | 12 | 12 | 0 |
| Vehicle Extension [s] | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 13 | 0 | 0 | 2 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Minimum Recall | | No | | | No | | No | No | | No | No | |
| Maximum Recall | | No | | | No | | No | No | | No | No | |
| Pedestrian Recall | | No | | | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

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



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Lane Group Calculations**

| Lane Group | C | R | C | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 |
| L, Total Lost Time per Cycle [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| g_i, Effective Green Time [s] | 20 | 20 | 20 | 11 | 23 | 23 | 10 | 22 | 22 |
| g / C, Green / Cycle | 0.38 | 0.38 | 0.38 | 0.21 | 0.43 | 0.43 | 0.19 | 0.41 | 0.41 |
| (v / s)_i Volume / Saturation Flow Rate | 0.46 | 0.04 | 0.20 | 0.07 | 0.19 | 0.19 | 0.05 | 0.35 | 0.01 |
| s, saturation flow rate [veh/h] | 507 | 1406 | 974 | 1603 | 1683 | 1580 | 1603 | 1683 | 1431 |
| c, Capacity [veh/h] | 315 | 538 | 447 | 331 | 726 | 682 | 298 | 692 | 588 |
| d1, Uniform Delay [s] | 17.34 | 10.40 | 11.97 | 17.83 | 10.44 | 10.47 | 18.25 | 14.02 | 9.18 |
| k, delay calibration | 0.50 | 0.04 | 0.14 | 0.04 | 0.04 | 0.04 | 0.04 | 0.11 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 14.13 | 0.03 | 0.83 | 0.23 | 0.15 | 0.16 | 0.16 | 3.15 | 0.01 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.73 | 0.10 | 0.43 | 0.35 | 0.43 | 0.44 | 0.25 | 0.85 | 0.02 |
| d, Delay for Lane Group [s/veh] | 31.47 | 10.43 | 12.80 | 18.06 | 10.59 | 10.63 | 18.41 | 17.17 | 9.19 |
| Lane Group LOS | C | B | B | B | B | B | B | B | A |
| Critical Lane Group | Yes | No | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 3.84 | 0.33 | 1.44 | 1.10 | 2.12 | 2.02 | 0.71 | 5.79 | 0.07 |
| 50th-Percentile Queue Length [ft/ln] | 96.09 | 8.34 | 35.92 | 27.43 | 52.88 | 50.49 | 17.75 | 144.66 | 1.75 |
| 95th-Percentile Queue Length [veh/ln] | 6.92 | 0.60 | 2.59 | 1.97 | 3.81 | 3.64 | 1.28 | 9.73 | 0.13 |
| 95th-Percentile Queue Length [ft/ln] | 172.96 | 15.02 | 64.65 | 49.37 | 95.18 | 90.88 | 31.95 | 243.29 | 3.14 |

**Movement, Approach, & Intersection Results**

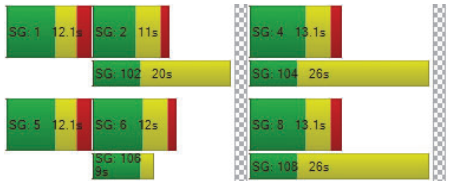
| d_M, Delay for Movement [s/veh] | 31.47 | 31.47 | 10.43 | 12.80 | 12.80 | 12.80 | 18.06 | 10.61 | 10.63 | 18.41 | 17.17 | 9.19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | C | C | B | B | B | B | B | B | B | B | B | A |
| d_A, Approach Delay [s/veh] | 27.61 | | | 12.80 | | | 11.79 | | | 17.16 | | |
| Approach LOS | C | | | B | | | B | | | B | | |
| d_I, Intersection Delay [s/veh] | 16.21 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 1.138 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 4744.16 | 0.00 | 0.00 | 4160.53 |
| d_p, Pedestrian Delay [s] | 16.38 | 16.38 | 16.38 | 16.38 |
| l_p,int, Pedestrian LOS Score for Intersection | 2.191 | 1.980 | 2.800 | 2.566 |
| Crosswalk LOS | B | A | C | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 305 | 305 | 240 | 278 |
| d_b, Bicycle Delay [s] | 18.88 | 18.85 | 20.34 | 19.44 |
| l_b,int, Bicycle LOS Score for Intersection | 2.124 | 1.969 | 2.182 | 2.692 |
| Bicycle LOS | B | A | B | B |

**Sequence**

| Ring 1 | 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |






Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Level Of Service Report**
**Intersection 4: Dry Creek Rd-March Ave/Healdsburg Ave**

| Control Type: | Signalized | Delay (sec / veh): | 16.6 |
|---|---|---|---|
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.740 |

**Intersection Setup**

| Name | Healdsburg Ave | | | Healdsburg Ave | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 165.00 | 100.00 | 100.00 | 140.00 | 100.00 | 100.00 | 115.00 | 100.00 | 100.00 | 115.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 35.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Healdsburg Ave | | | Healdsburg Ave | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 193 | 274 | 59 | 76 | 311 | 163 | 167 | 186 | 175 | 57 | 249 | 39 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 12 | 0 | 0 | 53 | 0 | 0 | 82 | 0 | 0 | 15 |
| Total Hourly Volume [veh/h] | 194 | 274 | 47 | 76 | 311 | 110 | 167 | 187 | 94 | 57 | 250 | 24 |
| Peak Hour Factor | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 | 0.8300 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 58 | 83 | 14 | 23 | 94 | 33 | 50 | 56 | 28 | 17 | 75 | 7 |
| Total Analysis Volume [veh/h] | 234 | 330 | 57 | 92 | 375 | 133 | 201 | 225 | 113 | 69 | 301 | 29 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 2 | | | 1 | | | 2 | | | 1 | | |
| v_di, Inbound Pedestrian Volume crossing major street [ | 2 | | | 1 | | | 2 | | | 1 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 1 | | | 3 | | | 4 | | | 1 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ | 1 | | | 4 | | | 3 | | | 1 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 1 | | | 2 | | | 1 | | | 0 | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Protect | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 7 | 4 | 0 | 3 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lag | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 7 | 0 | 8 | 8 | 0 | 7 | 8 | 0 | 8 | 8 | 0 |
| Maximum Green [s] | 16 | 30 | 0 | 16 | 30 | 0 | 16 | 30 | 0 | 16 | 30 | 0 |
| Amber [s] | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 |
| All red [s] | 2.0 | 1.3 | 0.0 | 2.0 | 1.3 | 0.0 | 2.0 | 1.4 | 0.0 | 2.0 | 1.4 | 0.0 |
| Split [s] | 13 | 12 | 0 | 13 | 13 | 0 | 12 | 13 | 0 | 13 | 13 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 19 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | R | L | C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 |
| L, Total Lost Time per Cycle [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| g_i, Effective Green Time [s] | 13 | 16 | 16 | 11 | 14 | 14 | 12 | 15 | 15 | 10 | 14 |
| g / C, Green / Cycle | 0.25 | 0.30 | 0.30 | 0.21 | 0.27 | 0.27 | 0.23 | 0.29 | 0.29 | 0.20 | 0.26 |
| (v / s)_i Volume / Saturation Flow Rate | 0.13 | 0.11 | 0.11 | 0.05 | 0.14 | 0.15 | 0.11 | 0.12 | 0.07 | 0.04 | 0.18 |
| s, saturation flow rate [veh/h] | 1757 | 1870 | 1761 | 1781 | 1870 | 1670 | 1781 | 1870 | 1563 | 1781 | 1841 |
| c, Capacity [veh/h] | 433 | 559 | 526 | 378 | 495 | 442 | 401 | 547 | 457 | 350 | 486 |
| d1, Uniform Delay [s] | 17.27 | 14.48 | 14.50 | 17.24 | 16.57 | 16.67 | 17.83 | 14.98 | 14.19 | 17.70 | 17.39 |
| k, delay calibration | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.39 | 0.14 | 0.15 | 0.12 | 0.33 | 0.40 | 0.36 | 0.18 | 0.10 | 0.10 | 0.63 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| X, volume / capacity | 0.54 | 0.35 | 0.36 | 0.24 | 0.53 | 0.55 | 0.50 | 0.41 | 0.25 | 0.20 | 0.68 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d, Delay for Lane Group [s/veh] | 17.66 | 14.62 | 14.66 | 17.36 | 16.91 | 17.07 | 18.19 | 15.17 | 14.29 | 17.80 | 18.02 |
| Lane Group LOS | B | B | B | B | B | B | B | B | B | B | B |
| Critical Lane Group | Yes | No | No | No | No | Yes | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 2.24 | 1.65 | 1.58 | 0.83 | 2.39 | 2.23 | 1.95 | 1.93 | 0.92 | 0.65 | 3.25 |
| 50th-Percentile Queue Length [ft/ln] | 55.96 | 41.18 | 39.46 | 20.68 | 59.70 | 55.66 | 48.73 | 48.33 | 22.98 | 16.13 | 81.26 |
| 95th-Percentile Queue Length [veh/ln] | 4.03 | 2.96 | 2.84 | 1.49 | 4.30 | 4.01 | 3.51 | 3.48 | 1.65 | 1.16 | 5.85 |
| 95th-Percentile Queue Length [ft/ln] | 100.73 | 74.12 | 71.03 | 37.22 | 107.46 | 100.19 | 87.71 | 87.00 | 41.37 | 29.03 | 146.27 |





**Movement, Approach, & Intersection Results**

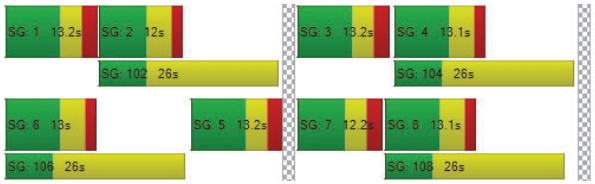
| d_M, Delay for Movement [s/veh] | 17.66 | 14.63 | 14.66 | 17.36 | 16.95 | 17.07 | 18.19 | 15.17 | 14.29 | 17.80 | 18.02 | 18.02 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | B | B | B | B | B | B | B | B | B | B | B | B |
| d_A, Approach Delay [s/veh] | 15.78 | | | 17.04 | | | 16.11 | | | 17.98 | | |
| Approach LOS | B | | | B | | | B | | | B | | |
| d_I, Intersection Delay [s/veh] | 16.62 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.740 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 16.43 | 16.43 | 16.43 | 16.43 |
| l_p,int, Pedestrian LOS Score for Intersection | 2.535 | 2.624 | 2.544 | 2.191 |
| Crosswalk LOS | B | B | B | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 266 | 304 | 304 | 304 |
| d_b, Bicycle Delay [s] | 19.76 | 18.91 | 18.90 | 18.89 |
| l_b,int, Bicycle LOS Score for Intersection | 2.082 | 2.098 | 2.584 | 2.243 |
| Bicycle LOS | B | B | B | B |

**Sequence**

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



# MOVEMENT SUMMARY

## Site: 1 [SB Ramp AM Future]

New Site
Site Category: (None)
Roundabout

**Movement Performance - Vehicles**

| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East: WB Dry Creek Rd | | | | | | | | | | | | |
| 1 | L2 | 774 | 5.0 | 0.742 | 13.5 | LOS B | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 32.9 |
| 6 | T1 | 244 | 5.0 | 0.742 | 13.5 | LOS B | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 33.0 |
| Approach | | 1018 | 5.0 | 0.742 | 13.5 | LOS B | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 32.9 |
| North: US 101 South Off-Ramp | | | | | | | | | | | | |
| 7 | L2 | 94 | 5.0 | 0.247 | 11.6 | LOS B | 0.9 | 24.3 | 0.72 | 0.72 | 0.72 | 22.0 |
| 4 | T1 | 1 | 5.0 | 0.247 | 11.6 | LOS B | 0.9 | 24.3 | 0.72 | 0.72 | 0.72 | 29.8 |
| 14 | R2 | 19 | 5.0 | 0.247 | 11.6 | LOS B | 0.9 | 24.3 | 0.72 | 0.72 | 0.72 | 29.1 |
| Approach | | 114 | 5.0 | 0.247 | 11.6 | LOS B | 0.9 | 24.3 | 0.72 | 0.72 | 0.72 | 23.5 |
| West: EB Dry Creek Rd | | | | | | | | | | | | |
| 2 | T1 | 167 | 5.0 | 0.501 | 15.7 | LOS B | 2.8 | 73.7 | 0.78 | 0.91 | 1.19 | 22.1 |
| 12 | R2 | 104 | 5.0 | 0.501 | 15.7 | LOS B | 2.8 | 73.7 | 0.78 | 0.91 | 1.19 | 29.0 |
| Approach | | 271 | 5.0 | 0.501 | 15.7 | LOS B | 2.8 | 73.7 | 0.78 | 0.91 | 1.19 | 25.2 |
| All Vehicles | | 1403 | 5.0 | 0.742 | 13.7 | LOS B | 2.8 | 73.7 | 0.21 | 0.23 | 0.29 | 29.9 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.



# MOVEMENT SUMMARY

## Site: 2 [NB Ramp AM Future]

New Site
Site Category: (None)
Roundabout

**Movement Performance - Vehicles**

| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: US 101 NB Off-Ramp | | | | | | | | | | | | |
| 3 | L2 | 134 | 5.0 | 0.131 | 4.6 | LOS A | 0.6 | 14.7 | 0.42 | 0.29 | 0.42 | 24.4 |
| 8 | T1 | 2 | 5.0 | 0.131 | 4.6 | LOS A | 0.6 | 14.7 | 0.42 | 0.29 | 0.42 | 32.4 |
| 18 | R2 | 887 | 5.0 | 0.556 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 35.0 |
| Approach | | 1023 | 5.0 | 0.556 | 0.7 | LOS A | 0.6 | 14.7 | 0.06 | 0.04 | 0.06 | 33.1 |
| East: WB Dry Creek Rd | | | | | | | | | | | | |
| 6 | T1 | 881 | 5.0 | 0.747 | 15.2 | LOS B | 10.0 | 261.2 | 0.71 | 0.53 | 0.80 | 16.0 |
| 16 | R2 | 142 | 5.0 | 0.105 | 3.5 | LOS A | 0.5 | 12.3 | 0.06 | 0.01 | 0.06 | 31.9 |
| Approach | | 1023 | 5.0 | 0.747 | 13.6 | LOS B | 10.0 | 261.2 | 0.62 | 0.46 | 0.70 | 18.7 |
| West: EB Dry Creek Rd | | | | | | | | | | | | |
| 5 | L2 | 8 | 5.0 | 0.192 | 4.2 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 36.1 |
| 2 | T1 | 255 | 5.0 | 0.192 | 4.2 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 28.8 |
| Approach | | 263 | 5.0 | 0.192 | 4.2 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 29.2 |
| All Vehicles | | 2309 | 5.0 | 0.747 | 6.8 | LOS A | 10.0 | 261.2 | 0.30 | 0.22 | 0.33 | 26.6 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**Intersection Level Of Service Report**
**Intersection 3: Dry Creek Rd/Grove St**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 30.3 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.647 |

**Intersection Setup**

| Name | Grove St | | | Grove St | | | Dry Creek Road | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 200.00 | 100.00 | 100.00 | 100.00 | 90.00 | 100.00 | 265.00 | 140.00 | 100.00 | 140.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Volumes**

| Name | Grove St | | | Grove St | | | Dry Creek Road | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 148 | 49 | 66 | 24 | 96 | 191 | 126 | 775 | 191 | 97 | 661 | 36 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 14 | 0 | 0 | 67 | 0 | 0 | 27 | 0 | 0 | 3 |
| Total Hourly Volume [veh/h] | 148 | 49 | 52 | 24 | 96 | 124 | 126 | 775 | 164 | 97 | 661 | 33 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 37 | 12 | 13 | 6 | 24 | 31 | 32 | 194 | 41 | 24 | 165 | 8 |
| Total Analysis Volume [veh/h] | 148 | 49 | 52 | 24 | 96 | 124 | 126 | 775 | 164 | 97 | 661 | 33 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 2 | | | 0 | | | 0 | | | 2 | | |
| v_di, Inbound Pedestrian Volume crossing major street | 2 | | | 0 | | | 0 | | | 2 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 2 | | | 0 | | | 2 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street | 2 | | | 0 | | | 2 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 4 | | | 1 | | | 3 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | Yes |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 85.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | ProtPer | Permis | Permis | ProtPer | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 7 | 6 | 0 | 7 | 7 | 0 |
| Maximum Green [s] | 0 | 15 | 0 | 0 | 15 | 0 | 10 | 30 | 0 | 10 | 30 | 0 |
| Amber [s] | 0.0 | 3.7 | 0.0 | 0.0 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 |
| All red [s] | 0.0 | 1.4 | 0.0 | 0.0 | 1.4 | 0.0 | 1.9 | 1.0 | 0.0 | 1.9 | 1.0 | 0.0 |
| Split [s] | 0 | 57 | 0 | 0 | 35 | 0 | 15 | 48 | 0 | 15 | 48 | 0 |
| Vehicle Extension [s] | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 13 | 0 | 0 | 2 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Minimum Recall | | No | | | No | | No | No | | No | No | |
| Maximum Recall | | No | | | No | | No | No | | No | No | |
| Pedestrian Recall | | No | | | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

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



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| g_i, Effective Green Time [s] | 24 | 24 | 24 | 96 | 84 | 84 | 96 | 84 | 84 |
| g / C, Green / Cycle | 0.20 | 0.20 | 0.20 | 0.80 | 0.70 | 0.70 | 0.80 | 0.70 | 0.70 |
| (v / s)_i Volume / Saturation Flow Rate | 0.14 | 0.07 | 0.16 | 0.16 | 0.29 | 0.29 | 0.15 | 0.39 | 0.02 |
| s, saturation flow rate [veh/h] | 1045 | 1523 | 1493 | 809 | 1683 | 1567 | 668 | 1683 | 1431 |
| c, Capacity [veh/h] | 102 | 301 | 328 | 573 | 1184 | 1103 | 529 | 1182 | 1005 |
| d1, Uniform Delay [s] | 53.53 | 41.32 | 45.98 | 6.44 | 7.38 | 7.41 | 4.71 | 8.74 | 5.43 |
| k, delay calibration | 0.07 | 0.04 | 0.04 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 208.44 | 0.24 | 1.26 | 0.88 | 1.05 | 1.14 | 0.76 | 1.91 | 0.06 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.45 | 0.34 | 0.74 | 0.22 | 0.41 | 0.41 | 0.18 | 0.56 | 0.03 |
| d, Delay for Lane Group [s/veh] | 261.97 | 41.56 | 47.25 | 7.32 | 8.42 | 8.55 | 5.47 | 10.66 | 5.49 |
| Lane Group LOS | F | D | D | A | A | A | A | B | A |
| Critical Lane Group | No | No | Yes | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 9.18 | 2.60 | 7.05 | 0.83 | 5.09 | 4.84 | 0.63 | 8.29 | 0.25 |
| 50th-Percentile Queue Length [ft/ln] | 229.58 | 64.94 | 176.36 | 20.66 | 127.35 | 120.93 | 15.75 | 207.37 | 6.37 |
| 95th-Percentile Queue Length [veh/ln] | 16.30 | 4.68 | 11.41 | 1.49 | 8.80 | 8.44 | 1.13 | 13.02 | 0.46 |
| 95th-Percentile Queue Length [ft/ln] | 407.49 | 116.89 | 285.26 | 37.19 | 219.88 | 211.11 | 28.34 | 325.46 | 11.47 |

**Movement, Approach, & Intersection Results**

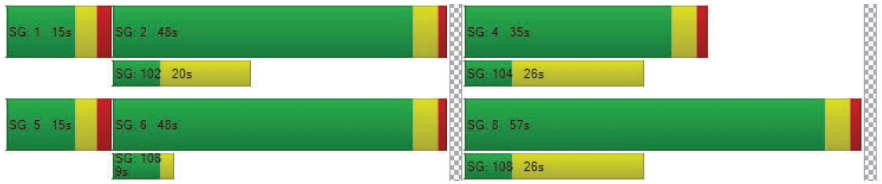
| d_M, Delay for Movement [s/veh] | 261.97 | 41.56 | 41.56 | 47.25 | 47.25 | 47.25 | 7.32 | 8.47 | 8.55 | 5.47 | 10.66 | 5.49 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | F | D | D | D | D | D | A | A | A | A | B | A |
| d_A, Approach Delay [s/veh] | 172.56 | | | 47.25 | | | 8.35 | | | 9.80 | | |
| Approach LOS | F | | | D | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 30.29 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.647 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 1335.15 | 0.00 | 0.00 | 1539.12 |
| d_p, Pedestrian Delay [s] | 49.46 | 49.46 | 49.46 | 49.46 |
| l_p,int, Pedestrian LOS Score for Intersection | 2.281 | 2.204 | 2.904 | 2.676 |
| Crosswalk LOS | B | B | C | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 866 | 499 | 722 | 722 |
| d_b, Bicycle Delay [s] | 19.32 | 33.80 | 24.51 | 24.47 |
| l_b,int, Bicycle LOS Score for Intersection | 1.994 | 2.073 | 2.461 | 2.870 |
| Bicycle LOS | A | B | B | C |

## Sequence

| Ring 1 | 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |






Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Level Of Service Report**
**Intersection 4: Dry Creek Rd-March Ave/Healdsburg Ave**

| Control Type: | Signalized | Delay (sec / veh): | 51.1 |
|---|---|---|---|
| Analysis Method: | HCM 6th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.735 |

**Intersection Setup**

| Name | Healdsburg Ave | | | Healdsburg Ave | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 165.00 | 100.00 | 100.00 | 140.00 | 100.00 | 100.00 | 115.00 | 100.00 | 100.00 | 115.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 35.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Healdsburg Ave | | | Healdsburg Ave | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 217 | 294 | 36 | 61 | 345 | 342 | 387 | 236 | 189 | 64 | 195 | 51 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 16 | 0 | 0 | 46 | 0 | 0 | 91 | 0 | 0 | 12 |
| Total Hourly Volume [veh/h] | 217 | 294 | 20 | 61 | 345 | 296 | 387 | 236 | 98 | 64 | 195 | 39 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 54 | 74 | 5 | 15 | 86 | 74 | 97 | 59 | 25 | 16 | 49 | 10 |
| Total Analysis Volume [veh/h] | 217 | 294 | 20 | 61 | 345 | 296 | 387 | 236 | 98 | 64 | 195 | 39 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 2 | | | 1 | | | 2 | | | 1 | | |
| v_di, Inbound Pedestrian Volume crossing major street [ | 2 | | | 1 | | | 2 | | | 1 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 1 | | | 3 | | | 4 | | | 1 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ | 1 | | | 4 | | | 3 | | | 1 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 1 | | | 2 | | | 1 | | | 0 | | |





**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Protect | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 7 | 4 | 0 | 3 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lag | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 7 | 0 | 8 | 8 | 0 | 7 | 8 | 0 | 8 | 8 | 0 |
| Maximum Green [s] | 16 | 30 | 0 | 16 | 30 | 0 | 16 | 30 | 0 | 16 | 30 | 0 |
| Amber [s] | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 |
| All red [s] | 2.0 | 1.3 | 0.0 | 2.0 | 1.3 | 0.0 | 2.0 | 1.4 | 0.0 | 2.0 | 1.4 | 0.0 |
| Split [s] | 25 | 43 | 0 | 17 | 35 | 0 | 25 | 45 | 0 | 15 | 35 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 19 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | R | L | C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| g_i, Effective Green Time [s] | 47 | 63 | 63 | 12 | 28 | 28 | 25 | 33 | 33 | 12 | 20 |
| g / C, Green / Cycle | 0.39 | 0.52 | 0.52 | 0.10 | 0.23 | 0.23 | 0.21 | 0.27 | 0.27 | 0.10 | 0.17 |
| (v / s)_i Volume / Saturation Flow Rate | 0.12 | 0.08 | 0.09 | 0.03 | 0.18 | 0.19 | 0.22 | 0.13 | 0.06 | 0.04 | 0.13 |
| s, saturation flow rate [veh/h] | 1781 | 1870 | 1822 | 1781 | 1870 | 1529 | 1781 | 1870 | 1562 | 1781 | 1815 |
| c, Capacity [veh/h] | 700 | 975 | 950 | 181 | 430 | 352 | 371 | 513 | 428 | 183 | 306 |
| d1, Uniform Delay [s] | 25.16 | 15.02 | 15.03 | 50.09 | 43.58 | 44.10 | 47.49 | 36.15 | 33.67 | 50.09 | 47.57 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.04 | 0.22 | 0.25 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 1.15 | 0.36 | 0.37 | 0.40 | 6.74 | 11.66 | 58.61 | 0.24 | 0.10 | 0.42 | 1.50 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| X, volume / capacity | 0.31 | 0.16 | 0.16 | 0.34 | 0.80 | 0.84 | 1.04 | 0.46 | 0.23 | 0.35 | 0.76 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d, Delay for Lane Group [s/veh] | 26.31 | 15.38 | 15.40 | 50.49 | 50.32 | 55.76 | 106.09 | 36.39 | 33.77 | 50.51 | 49.08 |
| Lane Group LOS | C | B | B | D | D | E | F | D | C | D | D |
| Critical Lane Group | Yes | No | No | No | No | Yes | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 4.51 | 2.36 | 2.32 | 1.71 | 10.33 | 9.43 | 17.04 | 5.79 | 2.24 | 1.82 | 6.80 |
| 50th-Percentile Queue Length [ft/ln] | 112.75 | 58.93 | 57.99 | 42.87 | 258.24 | 235.72 | 426.01 | 144.63 | 55.89 | 45.40 | 169.89 |
| 95th-Percentile Queue Length [veh/ln] | 7.99 | 4.24 | 4.18 | 3.09 | 15.60 | 14.46 | 24.39 | 9.73 | 4.02 | 3.27 | 11.07 |
| 95th-Percentile Queue Length [ft/ln] | 199.82 | 106.07 | 104.39 | 77.17 | 390.02 | 361.61 | 609.63 | 243.24 | 100.61 | 81.71 | 276.76 |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Movement, Approach, & Intersection Results**

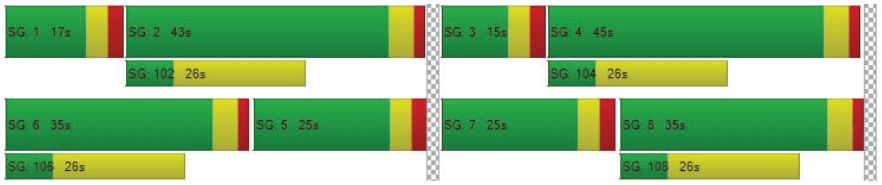
| d_M, Delay for Movement [s/veh] | 26.31 | 15.39 | 15.40 | 50.49 | 50.33 | 55.76 | 106.09 | 36.39 | 33.77 | 50.51 | 49.08 | 49.08 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | C | B | B | D | D | E | F | D | C | D | D | D |
| d_A, Approach Delay [s/veh] | 19.85 | | | 52.63 | | | 73.45 | | | 49.38 | | |
| Approach LOS | B | | | D | | | E | | | D | | |
| d_I, Intersection Delay [s/veh] | 51.14 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.735 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 49.49 | 49.49 | 49.49 | 49.49 |
| I_p,int, Pedestrian LOS Score for Intersection | 2.560 | 2.716 | 2.656 | 2.180 |
| Crosswalk LOS | B | B | B | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 633 | 500 | 665 | 498 |
| d_b, Bicycle Delay [s] | 28.02 | 33.77 | 26.73 | 33.81 |
| I_b,int, Bicycle LOS Score for Intersection | 2.011 | 2.177 | 2.899 | 2.071 |
| Bicycle LOS | B | B | C | B |

**Sequence**

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



# MOVEMENT SUMMARY

## Site: 1 [SB Ramp PM Future]

New Site
Site Category: (None)
Roundabout

**Movement Performance - Vehicles**

| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East: WB Dry Creek Rd | | | | | | | | | | | | |
| 1 | L2 | 934 | 5.0 | 0.833 | 18.1 | LOS B | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 32.7 |
| 6 | T1 | 208 | 5.0 | 0.833 | 18.1 | LOS B | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 32.8 |
| Approach | | 1142 | 5.0 | 0.833 | 18.1 | LOS B | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 32.7 |
| North: US 101 SB Off-Ramp | | | | | | | | | | | | |
| 7 | L2 | 117 | 5.0 | 0.374 | 16.0 | LOS B | 1.6 | 41.5 | 0.79 | 0.86 | 1.03 | 20.6 |
| 4 | T1 | 1 | 5.0 | 0.374 | 16.0 | LOS B | 1.6 | 41.5 | 0.79 | 0.86 | 1.03 | 28.2 |
| 14 | R2 | 33 | 5.0 | 0.374 | 16.0 | LOS B | 1.6 | 41.5 | 0.79 | 0.86 | 1.03 | 27.6 |
| Approach | | 151 | 5.0 | 0.374 | 16.0 | LOS B | 1.6 | 41.5 | 0.79 | 0.86 | 1.03 | 22.4 |
| West: EB Dry Creek Rd | | | | | | | | | | | | |
| 2 | T1 | 228 | 5.0 | 0.907 | 52.8 | LOS D | 10.7 | 278.8 | 0.94 | 1.57 | 3.08 | 13.8 |
| 12 | R2 | 175 | 5.0 | 0.907 | 52.8 | LOS D | 10.7 | 278.8 | 0.94 | 1.57 | 3.08 | 19.6 |
| Approach | | 403 | 5.0 | 0.907 | 52.8 | LOS D | 10.7 | 278.8 | 0.94 | 1.57 | 3.08 | 16.5 |
| All Vehicles | | 1696 | 5.0 | 0.907 | 26.2 | LOS C | 10.7 | 278.8 | 0.29 | 0.45 | 0.82 | 25.0 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.



# MOVEMENT SUMMARY

## Site: 2 [NB Ramp PM Future]

New Site
Site Category: (None)
Roundabout

**Movement Performance - Vehicles**

| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: US 101 NB Off-Ramp | | | | | | | | | | | | |
| 3 | L2 | 66 | 5.0 | 0.071 | 4.4 | LOS A | 0.3 | 7.4 | 0.46 | 0.33 | 0.46 | 24.5 |
| 8 | T1 | 1 | 5.0 | 0.071 | 4.4 | LOS A | 0.3 | 7.4 | 0.46 | 0.33 | 0.46 | 32.5 |
| 18 | R2 | 814 | 5.0 | 0.510 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 35.0 |
| Approach | | 881 | 5.0 | 0.510 | 0.4 | LOS A | 0.3 | 7.4 | 0.03 | 0.03 | 0.03 | 33.9 |
| East: WB Dry Creek Rd | | | | | | | | | | | | |
| 6 | T1 | 1077 | 5.0 | 0.855 | 21.0 | LOS C | 13.7 | 356.0 | 0.79 | 0.43 | 0.79 | 13.7 |
| 16 | R2 | 233 | 5.0 | 0.173 | 4.1 | LOS A | 0.8 | 21.8 | 0.09 | 0.02 | 0.09 | 31.5 |
| Approach | | 1310 | 5.0 | 0.855 | 18.0 | LOS B | 13.7 | 356.0 | 0.67 | 0.35 | 0.67 | 17.1 |
| West: EB Dry Creek Rd | | | | | | | | | | | | |
| 5 | L2 | 14 | 5.0 | 0.255 | 4.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 36.0 |
| 2 | T1 | 336 | 5.0 | 0.255 | 4.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 28.7 |
| Approach | | 350 | 5.0 | 0.255 | 4.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 29.3 |
| All Vehicles | | 2541 | 5.0 | 0.855 | 10.1 | LOS B | 13.7 | 356.0 | 0.36 | 0.19 | 0.36 | 24.2 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**Intersection Level Of Service Report**
**Intersection 3: Dry Creek Rd/Grove St**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 31.2 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.969 |

**Intersection Setup**

| Name | Grove St | | | Grove St | | | Dry Creek Road | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 200.00 | 100.00 | 100.00 | 100.00 | 90.00 | 100.00 | 265.00 | 140.00 | 100.00 | 140.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Volumes**

| Name | Grove St | | | Grove St | | | Dry Creek Road | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 249 | 72 | 158 | 19 | 91 | 190 | 160 | 777 | 195 | 113 | 842 | 30 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 59 | 0 | 0 | 57 | 0 | 0 | 28 | 0 | 0 | 10 |
| Total Hourly Volume [veh/h] | 249 | 72 | 99 | 19 | 91 | 133 | 160 | 777 | 167 | 113 | 842 | 20 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 62 | 18 | 25 | 5 | 23 | 33 | 40 | 194 | 42 | 28 | 211 | 5 |
| Total Analysis Volume [veh/h] | 249 | 72 | 99 | 19 | 91 | 133 | 160 | 777 | 167 | 113 | 842 | 20 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 2 | | | 0 | | | 0 | | | 2 | | |
| v_di, Inbound Pedestrian Volume crossing major street | 2 | | | 0 | | | 0 | | | 2 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 2 | | | 0 | | | 2 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street | 2 | | | 0 | | | 2 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 4 | | | 1 | | | 3 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | Yes |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 85.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | ProtPer | Permis | Permis | ProtPer | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 7 | 6 | 0 | 7 | 7 | 0 |
| Maximum Green [s] | 0 | 15 | 0 | 0 | 15 | 0 | 10 | 30 | 0 | 10 | 30 | 0 |
| Amber [s] | 0.0 | 3.7 | 0.0 | 0.0 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 |
| All red [s] | 0.0 | 1.4 | 0.0 | 0.0 | 1.4 | 0.0 | 1.9 | 1.0 | 0.0 | 1.9 | 1.0 | 0.0 |
| Split [s] | 0 | 13 | 0 | 0 | 13 | 0 | 12 | 11 | 0 | 12 | 12 | 0 |
| Vehicle Extension [s] | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 13 | 0 | 0 | 2 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Minimum Recall | | No | | | No | | No | No | | No | No | |
| Maximum Recall | | No | | | No | | No | No | | No | No | |
| Pedestrian Recall | | No | | | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

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



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 |
| L, Total Lost Time per Cycle [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| g_i, Effective Green Time [s] | 20 | 20 | 20 | 46 | 35 | 35 | 46 | 35 | 35 |
| g / C, Green / Cycle | 0.30 | 0.30 | 0.30 | 0.70 | 0.53 | 0.53 | 0.70 | 0.52 | 0.52 |
| (v / s)_i Volume / Saturation Flow Rate | 0.24 | 0.11 | 0.16 | 0.19 | 0.29 | 0.29 | 0.18 | 0.50 | 0.01 |
| s, saturation flow rate [veh/h] | 1041 | 1509 | 1492 | 845 | 1683 | 1564 | 633 | 1683 | 1431 |
| c, Capacity [veh/h] | 218 | 457 | 510 | 414 | 889 | 826 | 592 | 876 | 745 |
| d1, Uniform Delay [s] | 27.57 | 18.22 | 19.24 | 13.97 | 10.39 | 10.44 | 6.70 | 15.28 | 7.74 |
| k, delay calibration | 0.44 | 0.04 | 0.17 | 0.04 | 0.13 | 0.14 | 0.49 | 0.50 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 101.40 | 0.19 | 1.06 | 0.22 | 0.64 | 0.75 | 0.70 | 22.33 | 0.01 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.14 | 0.37 | 0.48 | 0.39 | 0.55 | 0.55 | 0.19 | 0.96 | 0.03 |
| d, Delay for Lane Group [s/veh] | 128.97 | 18.41 | 20.30 | 14.18 | 11.04 | 11.19 | 7.39 | 37.61 | 7.75 |
| Lane Group LOS | F | B | C | B | B | B | A | D | A |
| Critical Lane Group | Yes | No | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 9.53 | 1.95 | 3.04 | 0.74 | 4.14 | 3.93 | 0.60 | 15.48 | 0.12 |
| 50th-Percentile Queue Length [ft/ln] | 238.19 | 48.80 | 76.09 | 18.42 | 103.50 | 98.34 | 15.05 | 386.94 | 3.05 |
| 95th-Percentile Queue Length [veh/ln] | 15.67 | 3.51 | 5.48 | 1.33 | 7.45 | 7.08 | 1.08 | 21.93 | 0.22 |
| 95th-Percentile Queue Length [ft/ln] | 391.77 | 87.85 | 136.96 | 33.16 | 186.31 | 177.01 | 27.09 | 548.24 | 5.49 |

**Movement, Approach, & Intersection Results**

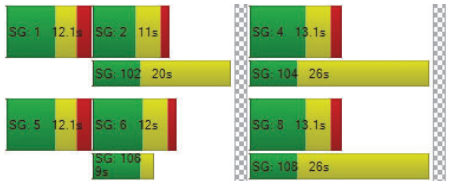
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 128.97 | 18.41 | 18.41 | 20.30 | 20.30 | 20.30 | 14.18 | 11.09 | 11.19 | 7.39 | 37.61 | 7.75 |
| Movement LOS | F | B | B | C | C | C | B | B | B | A | D | A |
| d_A, Approach Delay [s/veh] | 83.95 | | | 20.30 | | | 11.56 | | | 33.50 | | |
| Approach LOS | F | | | C | | | B | | | C | | |
| d_I, Intersection Delay [s/veh] | 31.22 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.969 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 3151.33 | 0.00 | 0.00 | 2893.35 |
| d_p, Pedestrian Delay [s] | 23.15 | 23.15 | 23.15 | 23.15 |
| l_p,int, Pedestrian LOS Score for Intersection | 2.378 | 2.172 | 3.097 | 2.703 |
| Crosswalk LOS | B | B | C | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 241 | 241 | 190 | 220 |
| d_b, Bicycle Delay [s] | 25.77 | 25.73 | 27.28 | 26.34 |
| l_b,int, Bicycle LOS Score for Intersection | 2.350 | 2.055 | 2.494 | 3.185 |
| Bicycle LOS | B | B | B | C |

**Sequence**

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |






Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Level Of Service Report**
**Intersection 4: Dry Creek Rd-March Ave/Healdsburg Ave**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 29.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.961 |

**Intersection Setup**

| Name | Healdsburg Ave | | | Healdsburg Ave | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 165.00 | 100.00 | 100.00 | 140.00 | 100.00 | 100.00 | 115.00 | 100.00 | 100.00 | 115.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 35.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Healdsburg Ave | | | Healdsburg Ave | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 219 | 406 | 59 | 94 | 456 | 456 | 474 | 186 | 199 | 57 | 249 | 50 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 12 | 0 | 0 | 53 | 0 | 0 | 82 | 0 | 0 | 15 |
| Total Hourly Volume [veh/h] | 219 | 406 | 47 | 94 | 456 | 403 | 474 | 186 | 117 | 57 | 249 | 35 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 55 | 102 | 12 | 24 | 114 | 101 | 119 | 47 | 29 | 14 | 62 | 9 |
| Total Analysis Volume [veh/h] | 219 | 406 | 47 | 94 | 456 | 403 | 474 | 186 | 117 | 57 | 249 | 35 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 2 | | | 1 | | | 2 | | | 1 | | |
| v_di, Inbound Pedestrian Volume crossing major street [ | 2 | | | 1 | | | 2 | | | 1 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 1 | | | 3 | | | 4 | | | 1 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ | 1 | | | 4 | | | 3 | | | 1 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 1 | | | 2 | | | 1 | | | 0 | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Protect | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 7 | 4 | 0 | 3 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lag | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 7 | 0 | 8 | 8 | 0 | 7 | 8 | 0 | 8 | 8 | 0 |
| Maximum Green [s] | 16 | 30 | 0 | 16 | 30 | 0 | 16 | 30 | 0 | 16 | 30 | 0 |
| Amber [s] | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 |
| All red [s] | 2.0 | 1.3 | 0.0 | 2.0 | 1.3 | 0.0 | 2.0 | 1.4 | 0.0 | 2.0 | 1.4 | 0.0 |
| Split [s] | 13 | 12 | 0 | 13 | 13 | 0 | 12 | 13 | 0 | 13 | 13 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 19 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | R | L | C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| L, Total Lost Time per Cycle [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| g_i, Effective Green Time [s] | 14 | 26 | 26 | 12 | 24 | 24 | 21 | 27 | 27 | 11 | 16 |
| g / C, Green / Cycle | 0.18 | 0.34 | 0.34 | 0.16 | 0.32 | 0.32 | 0.28 | 0.35 | 0.35 | 0.14 | 0.22 |
| (v / s)_i Volume / Saturation Flow Rate | 0.12 | 0.12 | 0.12 | 0.05 | 0.24 | 0.26 | 0.27 | 0.10 | 0.07 | 0.03 | 0.16 |
| s, saturation flow rate [veh/h] | 1761 | 1870 | 1792 | 1781 | 1870 | 1537 | 1781 | 1870 | 1564 | 1781 | 1829 |
| c, Capacity [veh/h] | 325 | 639 | 612 | 286 | 594 | 488 | 501 | 663 | 555 | 255 | 396 |
| d1, Uniform Delay [s] | 28.62 | 18.63 | 18.65 | 28.03 | 23.20 | 23.78 | 26.53 | 17.43 | 16.95 | 28.57 | 27.38 |
| k, delay calibration | 0.06 | 0.04 | 0.04 | 0.04 | 0.11 | 0.15 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 1.34 | 0.13 | 0.13 | 0.25 | 2.13 | 4.86 | 28.84 | 0.08 | 0.07 | 0.16 | 0.91 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| X, volume / capacity | 0.67 | 0.36 | 0.36 | 0.33 | 0.77 | 0.83 | 0.95 | 0.28 | 0.21 | 0.22 | 0.72 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d, Delay for Lane Group [s/veh] | 29.96 | 18.76 | 18.79 | 28.28 | 25.33 | 28.64 | 55.37 | 17.52 | 17.02 | 28.73 | 28.29 |
| Lane Group LOS | C | B | B | C | C | C | E | B | B | C | C |
| Critical Lane Group | Yes | No | No | No | No | Yes | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 3.66 | 2.88 | 2.79 | 1.45 | 7.08 | 6.75 | 11.85 | 2.21 | 1.35 | 0.90 | 4.64 |
| 50th-Percentile Queue Length [ft/ln] | 91.57 | 72.02 | 69.80 | 36.29 | 176.93 | 168.80 | 296.16 | 55.13 | 33.74 | 22.40 | 115.92 |
| 95th-Percentile Queue Length [veh/ln] | 6.59 | 5.19 | 5.03 | 2.61 | 11.44 | 11.01 | 17.49 | 3.97 | 2.43 | 1.61 | 8.17 |
| 95th-Percentile Queue Length [ft/ln] | 164.83 | 129.64 | 125.63 | 65.32 | 286.00 | 275.34 | 437.28 | 99.23 | 60.73 | 40.32 | 204.21 |





**Movement, Approach, & Intersection Results**

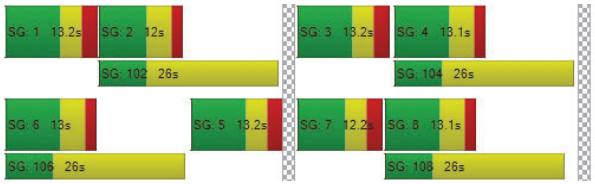
| d_M, Delay for Movement [s/veh] | 29.96 | 18.77 | 18.79 | 28.28 | 25.33 | 28.64 | 55.37 | 17.52 | 17.02 | 28.73 | 28.29 | 28.29 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | C | B | B | C | C | C | E | B | B | C | C | C |
| d_A, Approach Delay [s/veh] | 22.42 | | | 27.02 | | | 40.53 | | | 28.37 | | |
| Approach LOS | C | | | C | | | D | | | C | | |
| d_I, Intersection Delay [s/veh] | 29.89 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.961 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 27.42 | 27.42 | 27.42 | 27.42 |
| l_p,int, Pedestrian LOS Score for Intersection | 2.579 | 2.806 | 2.672 | 2.178 |
| Crosswalk LOS | B | C | B | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 186 | 213 | 213 | 213 |
| d_b, Bicycle Delay [s] | 30.96 | 30.08 | 30.06 | 30.05 |
| l_b,int, Bicycle LOS Score for Intersection | 2.124 | 2.390 | 2.977 | 2.147 |
| Bicycle LOS | B | B | C | B |

**Sequence**

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



# MOVEMENT SUMMARY

## Site: 1 [SB Ramp AM Future - w/ Project]

New Site
Site Category: (None)
Roundabout

**Movement Performance - Vehicles**

| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East: WB Dry Creek Rd | | | | | | | | | | | | |
| 1 | L2 | 785 | 5.0 | 0.750 | 13.8 | LOS B | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 32.9 |
| 6 | T1 | 244 | 5.0 | 0.750 | 13.8 | LOS B | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 33.0 |
| Approach | | 1029 | 5.0 | 0.750 | 13.8 | LOS B | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 32.9 |
| North: US 101 South Off-Ramp | | | | | | | | | | | | |
| 7 | L2 | 94 | 5.0 | 0.250 | 11.8 | LOS B | 0.9 | 24.6 | 0.73 | 0.73 | 0.73 | 21.9 |
| 4 | T1 | 1 | 5.0 | 0.250 | 11.8 | LOS B | 0.9 | 24.6 | 0.73 | 0.73 | 0.73 | 29.7 |
| 14 | R2 | 19 | 5.0 | 0.250 | 11.8 | LOS B | 0.9 | 24.6 | 0.73 | 0.73 | 0.73 | 29.1 |
| Approach | | 114 | 5.0 | 0.250 | 11.8 | LOS B | 0.9 | 24.6 | 0.73 | 0.73 | 0.73 | 23.4 |
| West: EB Dry Creek Rd | | | | | | | | | | | | |
| 2 | T1 | 167 | 5.0 | 0.507 | 16.0 | LOS B | 2.9 | 74.8 | 0.78 | 0.91 | 1.21 | 22.0 |
| 12 | R2 | 104 | 5.0 | 0.507 | 16.0 | LOS B | 2.9 | 74.8 | 0.78 | 0.91 | 1.21 | 28.9 |
| Approach | | 271 | 5.0 | 0.507 | 16.0 | LOS B | 2.9 | 74.8 | 0.78 | 0.91 | 1.21 | 25.0 |
| All Vehicles | | 1414 | 5.0 | 0.750 | 14.0 | LOS B | 2.9 | 74.8 | 0.21 | 0.23 | 0.29 | 29.8 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.



# MOVEMENT SUMMARY

## Site: 2 [NB Ramp AM Future - w/ Project]

New Site
Site Category: (None)
Roundabout

**Movement Performance - Vehicles**

| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: US 101 NB Off-Ramp | | | | | | | | | | | | |
| 3 | L2 | 134 | 5.0 | 0.131 | 4.6 | LOS A | 0.6 | 14.7 | 0.42 | 0.29 | 0.42 | 24.4 |
| 8 | T1 | 2 | 5.0 | 0.131 | 4.6 | LOS A | 0.6 | 14.7 | 0.42 | 0.29 | 0.42 | 32.4 |
| 18 | R2 | 890 | 5.0 | 0.558 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 35.0 |
| Approach | | 1026 | 5.0 | 0.558 | 0.7 | LOS A | 0.6 | 14.7 | 0.06 | 0.04 | 0.06 | 33.1 |
| East: WB Dry Creek Rd | | | | | | | | | | | | |
| 6 | T1 | 892 | 5.0 | 0.757 | 15.6 | LOS B | 11.1 | 289.6 | 0.72 | 0.56 | 0.85 | 15.8 |
| 16 | R2 | 142 | 5.0 | 0.105 | 3.5 | LOS A | 0.5 | 12.3 | 0.06 | 0.01 | 0.06 | 31.9 |
| Approach | | 1034 | 5.0 | 0.757 | 14.0 | LOS B | 11.1 | 289.6 | 0.63 | 0.48 | 0.74 | 18.5 |
| West: EB Dry Creek Rd | | | | | | | | | | | | |
| 5 | L2 | 8 | 5.0 | 0.192 | 4.2 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 36.1 |
| 2 | T1 | 255 | 5.0 | 0.192 | 4.2 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 28.8 |
| Approach | | 263 | 5.0 | 0.192 | 4.2 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 29.2 |
| All Vehicles | | 2323 | 5.0 | 0.757 | 7.0 | LOS A | 11.1 | 289.6 | 0.31 | 0.23 | 0.35 | 26.5 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**Intersection Level Of Service Report**
**Intersection 3: Dry Creek Rd/Grove St**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 30.3 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.650 |

**Intersection Setup**

| Name | Grove St | | | Grove St | | | Dry Creek Road | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 200.00 | 100.00 | 100.00 | 100.00 | 90.00 | 100.00 | 265.00 | 140.00 | 100.00 | 140.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Volumes**

| Name | Grove St | | | Grove St | | | Dry Creek Road | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 148 | 49 | 66 | 24 | 96 | 191 | 126 | 775 | 191 | 97 | 661 | 36 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 4 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 14 | 0 | 0 | 67 | 0 | 0 | 27 | 0 | 0 | 3 |
| Total Hourly Volume [veh/h] | 148 | 49 | 53 | 24 | 96 | 124 | 126 | 778 | 164 | 98 | 665 | 33 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 37 | 12 | 13 | 6 | 24 | 31 | 32 | 195 | 41 | 25 | 166 | 8 |
| Total Analysis Volume [veh/h] | 148 | 49 | 53 | 24 | 96 | 124 | 126 | 778 | 164 | 98 | 665 | 33 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 2 | | | 0 | | | 0 | | | 2 | | |
| v_di, Inbound Pedestrian Volume crossing major street | 2 | | | 0 | | | 0 | | | 2 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 2 | | | 0 | | | 2 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street | 2 | | | 0 | | | 2 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 4 | | | 1 | | | 3 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | Yes |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 85.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | ProtPer | Permis | Permis | ProtPer | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 7 | 6 | 0 | 7 | 7 | 0 |
| Maximum Green [s] | 0 | 15 | 0 | 0 | 15 | 0 | 10 | 30 | 0 | 10 | 30 | 0 |
| Amber [s] | 0.0 | 3.7 | 0.0 | 0.0 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 |
| All red [s] | 0.0 | 1.4 | 0.0 | 0.0 | 1.4 | 0.0 | 1.9 | 1.0 | 0.0 | 1.9 | 1.0 | 0.0 |
| Split [s] | 0 | 57 | 0 | 0 | 35 | 0 | 15 | 48 | 0 | 15 | 48 | 0 |
| Vehicle Extension [s] | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 13 | 0 | 0 | 2 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Minimum Recall | | No | | | No | | No | No | | No | No | |
| Maximum Recall | | No | | | No | | No | No | | No | No | |
| Pedestrian Recall | | No | | | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

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



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| g_i, Effective Green Time [s] | 24 | 24 | 24 | 96 | 84 | 84 | 96 | 84 | 84 |
| g / C, Green / Cycle | 0.20 | 0.20 | 0.20 | 0.80 | 0.70 | 0.70 | 0.80 | 0.70 | 0.70 |
| (v / s)_i Volume / Saturation Flow Rate | 0.14 | 0.07 | 0.16 | 0.16 | 0.29 | 0.29 | 0.15 | 0.40 | 0.02 |
| s, saturation flow rate [veh/h] | 1045 | 1522 | 1493 | 807 | 1683 | 1567 | 667 | 1683 | 1431 |
| c, Capacity [veh/h] | 102 | 301 | 328 | 571 | 1184 | 1103 | 528 | 1182 | 1005 |
| d1, Uniform Delay [s] | 53.53 | 41.35 | 45.98 | 6.50 | 7.39 | 7.42 | 4.72 | 8.78 | 5.43 |
| k, delay calibration | 0.07 | 0.04 | 0.04 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 208.44 | 0.25 | 1.26 | 0.89 | 1.05 | 1.15 | 0.77 | 1.94 | 0.06 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.45 | 0.34 | 0.74 | 0.22 | 0.41 | 0.41 | 0.19 | 0.56 | 0.03 |
| d, Delay for Lane Group [s/veh] | 261.97 | 41.59 | 47.24 | 7.39 | 8.44 | 8.57 | 5.50 | 10.72 | 5.49 |
| Lane Group LOS | F | D | D | A | A | A | A | B | A |
| Critical Lane Group | No | No | Yes | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 9.18 | 2.63 | 7.05 | 0.83 | 5.12 | 4.86 | 0.64 | 8.38 | 0.25 |
| 50th-Percentile Queue Length [ft/ln] | 229.58 | 65.64 | 176.36 | 20.68 | 127.96 | 121.54 | 15.93 | 209.51 | 6.37 |
| 95th-Percentile Queue Length [veh/ln] | 16.30 | 4.73 | 11.41 | 1.49 | 8.83 | 8.48 | 1.15 | 13.13 | 0.46 |
| 95th-Percentile Queue Length [ft/ln] | 407.49 | 118.15 | 285.26 | 37.23 | 220.71 | 211.94 | 28.68 | 328.20 | 11.47 |

**Movement, Approach, & Intersection Results**

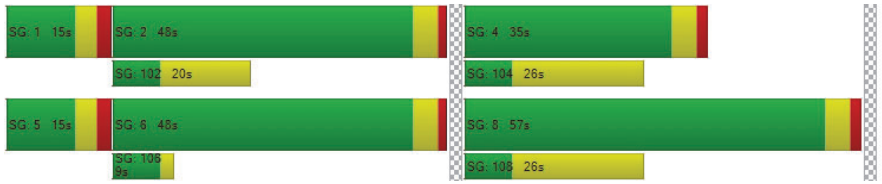
| d_M, Delay for Movement [s/veh] | 261.97 | 41.59 | 41.59 | 47.24 | 47.24 | 47.24 | 7.39 | 8.49 | 8.57 | 5.50 | 10.72 | 5.49 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | F | D | D | D | D | D | A | A | A | A | B | A |
| d_A, Approach Delay [s/veh] | 172.05 | | | 47.24 | | | 8.37 | | | 9.86 | | |
| Approach LOS | F | | | D | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 30.25 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.650 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 1332.47 | 0.00 | 0.00 | 1533.07 |
| d_p, Pedestrian Delay [s] | 49.46 | 49.46 | 49.46 | 49.46 |
| l_p,int, Pedestrian LOS Score for Intersection | 2.283 | 2.204 | 2.905 | 2.677 |
| Crosswalk LOS | B | B | C | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 866 | 499 | 722 | 722 |
| d_b, Bicycle Delay [s] | 19.32 | 33.80 | 24.51 | 24.47 |
| l_b,int, Bicycle LOS Score for Intersection | 1.995 | 2.073 | 2.463 | 2.878 |
| Bicycle LOS | A | B | B | C |

## Sequence

| Ring 1 | 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |






Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Level Of Service Report**
**Intersection 4: Dry Creek Rd-March Ave/Healdsburg Ave**

| Control Type: | Signalized | Delay (sec / veh): | 51.1 |
|---|---|---|---|
| Analysis Method: | HCM 6th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.735 |

**Intersection Setup**

| Name | Healdsburg Ave | | | Healdsburg Ave | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 165.00 | 100.00 | 100.00 | 140.00 | 100.00 | 100.00 | 115.00 | 100.00 | 100.00 | 115.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 35.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Healdsburg Ave | | | Healdsburg Ave | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 217 | 294 | 36 | 61 | 345 | 342 | 387 | 236 | 189 | 64 | 195 | 51 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 16 | 0 | 0 | 46 | 0 | 0 | 91 | 0 | 0 | 12 |
| Total Hourly Volume [veh/h] | 217 | 294 | 20 | 61 | 345 | 296 | 387 | 237 | 99 | 64 | 195 | 39 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 54 | 74 | 5 | 15 | 86 | 74 | 97 | 59 | 25 | 16 | 49 | 10 |
| Total Analysis Volume [veh/h] | 217 | 294 | 20 | 61 | 345 | 296 | 387 | 237 | 99 | 64 | 195 | 39 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 2 | | | 1 | | | 2 | | | 1 | | |
| v_di, Inbound Pedestrian Volume crossing major street [ | 2 | | | 1 | | | 2 | | | 1 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 1 | | | 3 | | | 4 | | | 1 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ | 1 | | | 4 | | | 3 | | | 1 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 1 | | | 2 | | | 1 | | | 0 | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Protect | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 7 | 4 | 0 | 3 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lag | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 7 | 0 | 8 | 8 | 0 | 7 | 8 | 0 | 8 | 8 | 0 |
| Maximum Green [s] | 16 | 30 | 0 | 16 | 30 | 0 | 16 | 30 | 0 | 16 | 30 | 0 |
| Amber [s] | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 |
| All red [s] | 2.0 | 1.3 | 0.0 | 2.0 | 1.3 | 0.0 | 2.0 | 1.4 | 0.0 | 2.0 | 1.4 | 0.0 |
| Split [s] | 25 | 43 | 0 | 17 | 35 | 0 | 25 | 45 | 0 | 15 | 35 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 19 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | R | L | C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| g_i, Effective Green Time [s] | 47 | 63 | 63 | 12 | 28 | 28 | 25 | 33 | 33 | 12 | 20 |
| g / C, Green / Cycle | 0.39 | 0.52 | 0.52 | 0.10 | 0.23 | 0.23 | 0.21 | 0.27 | 0.27 | 0.10 | 0.17 |
| (v / s)_i Volume / Saturation Flow Rate | 0.12 | 0.08 | 0.09 | 0.03 | 0.18 | 0.19 | 0.22 | 0.13 | 0.06 | 0.04 | 0.13 |
| s, saturation flow rate [veh/h] | 1781 | 1870 | 1822 | 1781 | 1870 | 1529 | 1781 | 1870 | 1562 | 1781 | 1815 |
| c, Capacity [veh/h] | 700 | 975 | 950 | 181 | 430 | 352 | 371 | 513 | 428 | 183 | 306 |
| d1, Uniform Delay [s] | 25.16 | 15.02 | 15.03 | 50.09 | 43.58 | 44.10 | 47.49 | 36.17 | 33.69 | 50.09 | 47.57 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.04 | 0.22 | 0.25 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 1.15 | 0.36 | 0.37 | 0.40 | 6.74 | 11.66 | 58.61 | 0.24 | 0.10 | 0.42 | 1.50 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| X, volume / capacity | 0.31 | 0.16 | 0.16 | 0.34 | 0.80 | 0.84 | 1.04 | 0.46 | 0.23 | 0.35 | 0.76 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d, Delay for Lane Group [s/veh] | 26.31 | 15.38 | 15.40 | 50.49 | 50.32 | 55.76 | 106.09 | 36.42 | 33.79 | 50.51 | 49.08 |
| Lane Group LOS | C | B | B | D | D | E | F | D | C | D | D |
| Critical Lane Group | Yes | No | No | No | No | Yes | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 4.51 | 2.36 | 2.32 | 1.71 | 10.33 | 9.43 | 17.04 | 5.81 | 2.26 | 1.82 | 6.80 |
| 50th-Percentile Queue Length [ft/ln] | 112.75 | 58.93 | 57.99 | 42.87 | 258.24 | 235.72 | 426.01 | 145.33 | 56.50 | 45.40 | 169.89 |
| 95th-Percentile Queue Length [veh/ln] | 7.99 | 4.24 | 4.18 | 3.09 | 15.60 | 14.46 | 24.39 | 9.77 | 4.07 | 3.27 | 11.07 |
| 95th-Percentile Queue Length [ft/ln] | 199.82 | 106.07 | 104.39 | 77.17 | 390.02 | 361.61 | 609.63 | 244.19 | 101.70 | 81.71 | 276.76 |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Movement, Approach, & Intersection Results**

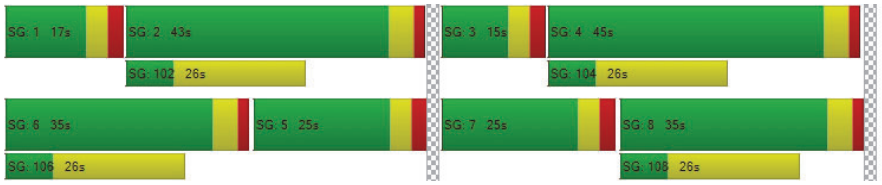
| d_M, Delay for Movement [s/veh] | 26.31 | 15.39 | 15.40 | 50.49 | 50.33 | 55.76 | 106.09 | 36.42 | 33.79 | 50.51 | 49.08 | 49.08 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | C | B | B | D | D | E | F | D | C | D | D | D |
| d_A, Approach Delay [s/veh] | 19.85 | | | 52.63 | | | 73.35 | | | 49.38 | | |
| Approach LOS | B | | | D | | | E | | | D | | |
| d_I, Intersection Delay [s/veh] | 51.13 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.735 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 49.49 | 49.49 | 49.49 | 49.49 |
| l_p,int, Pedestrian LOS Score for Intersection | 2.560 | 2.716 | 2.657 | 2.180 |
| Crosswalk LOS | B | B | B | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 633 | 500 | 665 | 498 |
| d_b, Bicycle Delay [s] | 28.02 | 33.77 | 26.73 | 33.81 |
| l_b,int, Bicycle LOS Score for Intersection | 2.011 | 2.177 | 2.903 | 2.071 |
| Bicycle LOS | B | B | C | B |

**Sequence**

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



# MOVEMENT SUMMARY

## Site: 1 [SB Ramp PM Future - w/ Project]

New Site
Site Category: (None)
Roundabout

**Movement Performance - Vehicles**

| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East: WB Dry Creek Rd | | | | | | | | | | | | |
| 1 | L2 | 940 | 5.0 | 0.837 | 18.4 | LOS B | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 32.7 |
| 6 | T1 | 208 | 5.0 | 0.837 | 18.4 | LOS B | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 32.8 |
| Approach | | 1148 | 5.0 | 0.837 | 18.4 | LOS B | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 32.7 |
| North: US 101 SB Off-Ramp | | | | | | | | | | | | |
| 7 | L2 | 117 | 5.0 | 0.377 | 16.2 | LOS B | 1.6 | 41.8 | 0.79 | 0.86 | 1.04 | 20.6 |
| 4 | T1 | 1 | 5.0 | 0.377 | 16.2 | LOS B | 1.6 | 41.8 | 0.79 | 0.86 | 1.04 | 28.2 |
| 14 | R2 | 33 | 5.0 | 0.377 | 16.2 | LOS B | 1.6 | 41.8 | 0.79 | 0.86 | 1.04 | 27.6 |
| Approach | | 151 | 5.0 | 0.377 | 16.2 | LOS B | 1.6 | 41.8 | 0.79 | 0.86 | 1.04 | 22.4 |
| West: EB Dry Creek Rd | | | | | | | | | | | | |
| 2 | T1 | 228 | 5.0 | 0.913 | 54.1 | LOS D | 11.0 | 285.0 | 0.94 | 1.59 | 3.14 | 13.6 |
| 12 | R2 | 175 | 5.0 | 0.913 | 54.1 | LOS D | 11.0 | 285.0 | 0.94 | 1.59 | 3.14 | 19.4 |
| Approach | | 403 | 5.0 | 0.913 | 54.1 | LOS D | 11.0 | 285.0 | 0.94 | 1.59 | 3.14 | 16.3 |
| All Vehicles | | 1702 | 5.0 | 0.913 | 26.7 | LOS C | 11.0 | 285.0 | 0.29 | 0.45 | 0.84 | 24.8 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.



# MOVEMENT SUMMARY

## Site: 2 [NB Ramp PM Future - w/ Project]

New Site
Site Category: (None)
Roundabout

**Movement Performance - Vehicles**

| Mov ID | Turn | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: US 101 NB Off-Ramp | | | | | | | | | | | | |
| 3 | L2 | 66 | 5.0 | 0.071 | 4.4 | LOS A | 0.3 | 7.4 | 0.46 | 0.33 | 0.46 | 24.5 |
| 8 | T1 | 1 | 5.0 | 0.071 | 4.4 | LOS A | 0.3 | 7.4 | 0.46 | 0.33 | 0.46 | 32.5 |
| 18 | R2 | 823 | 5.0 | 0.516 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 35.0 |
| Approach | | 890 | 5.0 | 0.516 | 0.4 | LOS A | 0.3 | 7.4 | 0.03 | 0.02 | 0.03 | 33.9 |
| East: WB Dry Creek Rd | | | | | | | | | | | | |
| 6 | T1 | 1083 | 5.0 | 0.860 | 21.4 | LOS C | 14.0 | 364.0 | 0.80 | 0.43 | 0.80 | 13.6 |
| 16 | R2 | 233 | 5.0 | 0.173 | 4.1 | LOS A | 0.8 | 21.8 | 0.09 | 0.02 | 0.09 | 31.5 |
| Approach | | 1316 | 5.0 | 0.860 | 18.4 | LOS B | 14.0 | 364.0 | 0.68 | 0.36 | 0.68 | 16.9 |
| West: EB Dry Creek Rd | | | | | | | | | | | | |
| 5 | L2 | 14 | 5.0 | 0.255 | 4.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 36.0 |
| 2 | T1 | 336 | 5.0 | 0.255 | 4.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 28.7 |
| Approach | | 350 | 5.0 | 0.255 | 4.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 29.3 |
| All Vehicles | | 2556 | 5.0 | 0.860 | 10.2 | LOS B | 14.0 | 364.0 | 0.36 | 0.19 | 0.36 | 24.1 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

**Intersection Level Of Service Report**
**Intersection 3: Dry Creek Rd/Grove St**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 31.6 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.974 |

**Intersection Setup**

| Name | Grove St | | | Grove St | | | Dry Creek Road | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 200.00 | 100.00 | 100.00 | 100.00 | 90.00 | 100.00 | 265.00 | 140.00 | 100.00 | 140.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Volumes**

| Name | Grove St | | | Grove St | | | Dry Creek Road | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 249 | 72 | 158 | 19 | 91 | 190 | 160 | 777 | 195 | 113 | 842 | 30 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 9 | 0 | 1 | 6 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 59 | 0 | 0 | 57 | 0 | 0 | 28 | 0 | 0 | 10 |
| Total Hourly Volume [veh/h] | 249 | 72 | 101 | 19 | 91 | 133 | 160 | 786 | 167 | 114 | 848 | 20 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 62 | 18 | 25 | 5 | 23 | 33 | 40 | 197 | 42 | 29 | 212 | 5 |
| Total Analysis Volume [veh/h] | 249 | 72 | 101 | 19 | 91 | 133 | 160 | 786 | 167 | 114 | 848 | 20 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 2 | | | 0 | | | 0 | | | 2 | | |
| v_di, Inbound Pedestrian Volume crossing major street | 2 | | | 0 | | | 0 | | | 2 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 2 | | | 0 | | | 2 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street | 2 | | | 0 | | | 2 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 4 | | | 1 | | | 3 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | Yes |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 85.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | ProtPer | Permis | Permis | ProtPer | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 7 | 6 | 0 | 7 | 7 | 0 |
| Maximum Green [s] | 0 | 15 | 0 | 0 | 15 | 0 | 10 | 30 | 0 | 10 | 30 | 0 |
| Amber [s] | 0.0 | 3.7 | 0.0 | 0.0 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 |
| All red [s] | 0.0 | 1.4 | 0.0 | 0.0 | 1.4 | 0.0 | 1.9 | 1.0 | 0.0 | 1.9 | 1.0 | 0.0 |
| Split [s] | 0 | 13 | 0 | 0 | 13 | 0 | 12 | 11 | 0 | 12 | 12 | 0 |
| Vehicle Extension [s] | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 13 | 0 | 0 | 2 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Minimum Recall | | No | | | No | | No | No | | No | No | |
| Maximum Recall | | No | | | No | | No | No | | No | No | |
| Pedestrian Recall | | No | | | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

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



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 |
| L, Total Lost Time per Cycle [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| I2, Clearance Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| g_i, Effective Green Time [s] | 20 | 20 | 20 | 46 | 35 | 35 | 46 | 35 | 35 |
| g / C, Green / Cycle | 0.30 | 0.30 | 0.30 | 0.70 | 0.53 | 0.53 | 0.70 | 0.52 | 0.52 |
| (v / s)_i Volume / Saturation Flow Rate | 0.24 | 0.11 | 0.16 | 0.19 | 0.29 | 0.30 | 0.18 | 0.50 | 0.01 |
| s, saturation flow rate [veh/h] | 1041 | 1508 | 1492 | 843 | 1683 | 1566 | 629 | 1683 | 1431 |
| c, Capacity [veh/h] | 218 | 456 | 510 | 410 | 889 | 827 | 590 | 876 | 745 |
| d1, Uniform Delay [s] | 27.57 | 18.25 | 19.24 | 14.02 | 10.44 | 10.49 | 6.75 | 15.39 | 7.74 |
| k, delay calibration | 0.44 | 0.04 | 0.17 | 0.04 | 0.14 | 0.14 | 0.50 | 0.50 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 101.46 | 0.19 | 1.06 | 0.22 | 0.68 | 0.79 | 0.73 | 23.58 | 0.01 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.14 | 0.38 | 0.48 | 0.39 | 0.55 | 0.56 | 0.19 | 0.97 | 0.03 |
| d, Delay for Lane Group [s/veh] | 129.03 | 18.44 | 20.30 | 14.25 | 11.13 | 11.28 | 7.48 | 38.97 | 7.75 |
| Lane Group LOS | F | B | C | B | B | B | A | D | A |
| Critical Lane Group | Yes | No | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 9.53 | 1.98 | 3.04 | 0.74 | 4.20 | 4.00 | 0.61 | 15.93 | 0.12 |
| 50th-Percentile Queue Length [ft/ln] | 238.25 | 49.46 | 76.09 | 18.43 | 105.11 | 99.96 | 15.27 | 398.13 | 3.05 |
| 95th-Percentile Queue Length [veh/ln] | 15.68 | 3.56 | 5.48 | 1.33 | 7.57 | 7.20 | 1.10 | 22.47 | 0.22 |
| 95th-Percentile Queue Length [ft/ln] | 391.88 | 89.03 | 136.96 | 33.18 | 189.18 | 179.93 | 27.49 | 561.74 | 5.49 |

**Movement, Approach, & Intersection Results**

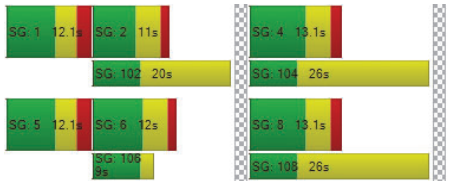
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 129.03 | 18.44 | 18.44 | 20.30 | 20.30 | 20.30 | 14.25 | 11.18 | 11.28 | 7.48 | 38.97 | 7.75 |
| Movement LOS | F | B | B | C | C | C | B | B | B | A | D | A |
| d_A, Approach Delay [s/veh] | 83.69 | | | 20.30 | | | 11.64 | | | 34.68 | | |
| Approach LOS | F | | | C | | | B | | | C | | |
| d_I, Intersection Delay [s/veh] | 31.62 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.974 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 3149.40 | 0.00 | 0.00 | 2881.23 |
| d_p, Pedestrian Delay [s] | 23.15 | 23.15 | 23.15 | 23.15 |
| l_p,int, Pedestrian LOS Score for Intersection | 2.379 | 2.172 | 3.100 | 2.706 |
| Crosswalk LOS | B | B | C | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 241 | 241 | 190 | 220 |
| d_b, Bicycle Delay [s] | 25.77 | 25.73 | 27.28 | 26.34 |
| l_b,int, Bicycle LOS Score for Intersection | 2.353 | 2.055 | 2.501 | 3.196 |
| Bicycle LOS | B | B | B | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |






Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Level Of Service Report**
**Intersection 4: Dry Creek Rd-March Ave/Healdsburg Ave**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 30.0 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.962 |

**Intersection Setup**

| Name | Healdsburg Ave | | | Healdsburg Ave | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 165.00 | 100.00 | 100.00 | 140.00 | 100.00 | 100.00 | 115.00 | 100.00 | 100.00 | 115.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 35.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Healdsburg Ave | | | Healdsburg Ave | | | Dry Creek Rd | | | Dry Creek Rd | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 219 | 406 | 59 | 94 | 456 | 456 | 474 | 186 | 199 | 57 | 249 | 50 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 12 | 0 | 0 | 53 | 0 | 0 | 82 | 0 | 0 | 15 |
| Total Hourly Volume [veh/h] | 220 | 406 | 47 | 94 | 456 | 403 | 474 | 187 | 118 | 57 | 250 | 35 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 55 | 102 | 12 | 24 | 114 | 101 | 119 | 47 | 30 | 14 | 63 | 9 |
| Total Analysis Volume [veh/h] | 220 | 406 | 47 | 94 | 456 | 403 | 474 | 187 | 118 | 57 | 250 | 35 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 2 | | | 1 | | | 2 | | | 1 | | |
| v_di, Inbound Pedestrian Volume crossing major street [ | 2 | | | 1 | | | 2 | | | 1 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 1 | | | 3 | | | 4 | | | 1 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ | 1 | | | 4 | | | 3 | | | 1 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 1 | | | 2 | | | 1 | | | 0 | | |



Generated with PTV VISTRO
Version 2021 (SP 0-6)

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Coordination Type | Time of Day Pattern Isolated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Protect | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis | Protect | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 7 | 4 | 0 | 3 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lag | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 8 | 7 | 0 | 8 | 8 | 0 | 7 | 8 | 0 | 8 | 8 | 0 |
| Maximum Green [s] | 16 | 30 | 0 | 16 | 30 | 0 | 16 | 30 | 0 | 16 | 30 | 0 |
| Amber [s] | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 | 3.2 | 3.7 | 0.0 |
| All red [s] | 2.0 | 1.3 | 0.0 | 2.0 | 1.3 | 0.0 | 2.0 | 1.4 | 0.0 | 2.0 | 1.4 | 0.0 |
| Split [s] | 13 | 12 | 0 | 13 | 13 | 0 | 12 | 13 | 0 | 13 | 13 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 19 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | R | L | C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| L, Total Lost Time per Cycle [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| g_i, Effective Green Time [s] | 14 | 26 | 26 | 12 | 24 | 24 | 21 | 27 | 27 | 11 | 16 |
| g / C, Green / Cycle | 0.18 | 0.34 | 0.34 | 0.16 | 0.32 | 0.32 | 0.28 | 0.35 | 0.35 | 0.14 | 0.22 |
| (v / s)_i Volume / Saturation Flow Rate | 0.12 | 0.12 | 0.12 | 0.05 | 0.24 | 0.26 | 0.27 | 0.10 | 0.08 | 0.03 | 0.16 |
| s, saturation flow rate [veh/h] | 1761 | 1870 | 1792 | 1781 | 1870 | 1537 | 1781 | 1870 | 1564 | 1781 | 1830 |
| c, Capacity [veh/h] | 326 | 640 | 613 | 285 | 594 | 488 | 500 | 663 | 555 | 255 | 397 |
| d1, Uniform Delay [s] | 28.67 | 18.64 | 18.66 | 28.12 | 23.26 | 23.84 | 26.63 | 17.48 | 17.00 | 28.65 | 27.43 |
| k, delay calibration | 0.06 | 0.04 | 0.04 | 0.04 | 0.11 | 0.15 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 1.42 | 0.13 | 0.13 | 0.25 | 2.15 | 4.92 | 29.26 | 0.09 | 0.07 | 0.16 | 0.92 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| X, volume / capacity | 0.68 | 0.36 | 0.36 | 0.33 | 0.77 | 0.83 | 0.95 | 0.28 | 0.21 | 0.22 | 0.72 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d, Delay for Lane Group [s/veh] | 30.09 | 18.76 | 18.80 | 28.36 | 25.41 | 28.76 | 55.90 | 17.57 | 17.07 | 28.82 | 28.35 |
| Lane Group LOS | C | B | B | C | C | C | E | B | B | C | C |
| Critical Lane Group | Yes | No | No | No | No | Yes | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 3.70 | 2.89 | 2.80 | 1.46 | 7.10 | 6.78 | 11.93 | 2.22 | 1.37 | 0.90 | 4.67 |
| 50th-Percentile Queue Length [ft/ln] | 92.41 | 72.15 | 69.91 | 36.41 | 177.56 | 169.45 | 298.16 | 55.62 | 34.15 | 22.47 | 116.65 |
| 95th-Percentile Queue Length [veh/ln] | 6.65 | 5.19 | 5.03 | 2.62 | 11.47 | 11.05 | 17.59 | 4.00 | 2.46 | 1.62 | 8.21 |
| 95th-Percentile Queue Length [ft/ln] | 166.33 | 129.87 | 125.85 | 65.53 | 286.83 | 276.20 | 439.75 | 100.11 | 61.47 | 40.44 | 205.22 |





**Movement, Approach, & Intersection Results**

| d_M, Delay for Movement [s/veh] | 30.09 | 18.78 | 18.80 | 28.36 | 25.41 | 28.76 | 55.90 | 17.57 | 17.07 | 28.82 | 28.35 | 28.35 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | C | B | B | C | C | C | E | B | B | C | C | C |
| d_A, Approach Delay [s/veh] | 22.48 | | | 27.12 | | | 40.81 | | | 28.43 | | |
| Approach LOS | C | | | C | | | D | | | C | | |
| d_I, Intersection Delay [s/veh] | 30.03 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.962 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 27.51 | 27.51 | 27.51 | 27.51 |
| l_p,int, Pedestrian LOS Score for Intersection | 2.580 | 2.806 | 2.674 | 2.178 |
| Crosswalk LOS | B | C | B | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 186 | 212 | 212 | 212 |
| d_b, Bicycle Delay [s] | 31.04 | 30.16 | 30.14 | 30.13 |
| l_b,int, Bicycle LOS Score for Intersection | 2.125 | 2.390 | 2.980 | 2.149 |
| Bicycle LOS | B | B | C | B |

**Sequence**

| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |