

Appendix A
Public Comment/Concerns Summary

Road	Intersection	Category	Comment
Veterans Parkway	--	Bicycling	Fix the bicycle underpass (closed) at Veterans Parkway near Fire Station 12
Rio Wrangler Parkway	--	Bicycling	Add ADA/bike ramps and crosswalks to cross Rio Wrangler (locations unclear)
Veterans Parkway	--	Bicycling	Add crosswalk and/or RRFB to cross Veterans Parkway (approximately 1000 ft south of Long Meadows)
--	--	Bicycling	Ensure all bike paths are re-paved with roadwork
--	--	Bicycling	Extend Tahoe-Pyramid path to provide cycling option to Tri Center
Rio Wrangler Parkway	--	Bicycling	Improve Bicycle Safety on Rio Wrangler
Veterans Parkway	--	Bicycling	Extend SouthEast Connector multi-use path to S. Virginia Street (Entire Length)
--	--	Bicycling	Install barrier separated bike path on high speed roadways
--	--	Bicycling	Install barrier separated bike path from Mt. Rose Highway to Center Street
--	I-580 & S. Virginia Street	Capacity	Create dual right turns onto NB S. Virginia Street
--	I-580 & S. Virginia Street	Capacity	Create a through lane for NB Virginia to NB & SB I-580 (Similar to Mt. Rose interchange)
--	I-580 & S. Virginia Street	Capacity	Install a signal at the NB Off Ramp and coordinate with E Patriot signal
Rio Wrangler Parkway	Rio Wrangler Parkway / Spring Flower Drive / Summer Glen Drive	Capacity	Transition from 2-lanes to 1 lane is awkward. Convert a through lane into a right turn lane into Summer Glen Dr.
--	Double R Boulevard / Damonte Ranch Parkway	Capacity	Install "No right turn on Red" sign for both southbound right turn lanes
--	Double R Boulevard / Double Diamond Parkway	Capacity	Re-stripe westbound approach as left & through-right
--	Veterans Parkway / Long Meadow Drive	Capacity	Install a Signal
--	Veterans Parkway / Steamboat Parkway	Capacity	Delays & Queueing at EB Through-Lane (single)
Veterans Parkway	--	Capacity	Install more flashing yellow left turns
--	South Meadows Parkway / Echo Valley Drive	Capacity	Install a traffic signal
--	Veterans Parkway / Pesaro Way / Cesena Way	Capacity	Difficult to turn left onto Veterans Parkway
--	Damonte Ranch Parkway / Steamboat Parkway	Capacity	Add a third WB Right turn lane
--	Veterans Parkway / Steamboat Parkway	Capacity	Lane alignment & striping issues - The 2 northbound lanes widen out to the right at the intersection and people have been using this extra space as a through lane which causes merging congestion when the 3 lanes reduce to 2 lanes north of Steamboat Pkwy.
Damonte Ranch Parkway	--	Capacity	Not enough eastbound lanes between Damonte Ranch Parkway and Veterans Parkway
--	Veterans Parkway / Geiger Grade Road	Capacity	Make the EB right turn only lane barrier separated
--	South Meadows Parkway / Wilbur May Parkway	Capacity	Suggested dual left turn lane from NB Wilbur May to WB S. Meadows
South Meadows Parkway	--	Capacity	Widen and Stripe a right turn pocket into Sprouts Shopping Center
--	Virginia Street / Holcomb Ranch	Capacity	Free right from Holcomb Ranch to SB Virginia - Comment from Naomi Duerr
--	Virginia Street / Damonte Ranch Pkwy	Capacity	Construct dedicated right turn lane on WB Damonte Ranch to NB Virginia
--	--	Capacity	What is process for determining ROW needed for future capacity when constructing new road? Person felt that it's not possible to add capacity because no room was left in medians.
--	South Meadows Parkway / Wilbur May	Capacity	Northbound left-turn issues
Carat Ave	--	Capacity	Carat Avenue does not have enough capacity between Double Diamond Parkway and Veterans Parkway
--	Veterans Parkway / Carat Avenue	Capacity	Improve signal coordination east-west on Carat Ave
--	Steamboat Parkway / Rio Wrangler Parkway	Capacity	Capacity issues - signal is needed
--	Trail Rider Drive / Gold Mine Drive	Capacity	Install a 4 way stop at Trail Rider Dr / Gold Mine Dr
--	Veterans Parkway / Steamboat Parkway	Capacity	Intersection Delay
--	Double R Boulevard / Damonte Ranch Parkway	Capacity	Construct an eastbound right turn lane
Damonte Ranch Parkway	--	Capacity	Congestion between Double R Blvd & Veterans Pkwy
Damonte Ranch Parkway	--	Capacity	Poor lane alignment between Double R Blvd & Veterans Pkwy
--	Double R Boulevard / Damonte Ranch Parkway	Capacity	Capacity issues
--	Veterans Parkway / Carat Avenue	Capacity	Capacity Concerns
--	Steamboat Parkway / Carat Avenue	Capacity	Traffic Signal Warrants
--	South Meadows Parkway / Lauren Court	Capacity	High delay on side streets
--	Steamboat Parkway / Horse Ranch Road	Capacity	High delay on side streets
Steamboat Parkway	--	Capacity	Change lane alignment between Damonte Ranch Pkwy and Veterans Pkwy
--	South Meadows Parkway / Double Diamond Boulevard	Capacity	There is not enough room to make a southbound U-turn for most vehicles
--	Steamboat Parkway / Rio Wrangler Parkway	Capacity	Do not like the roundabout concept presented at public meeting #1
Curti Ranch Road	--	Circulation	Close Equestrian Road to through traffic
Curti Ranch Road	--	Circulation	Close through traffic on Curti Ranch Road
Carat Avenue	--	Circulation	Traffic Calming on Carat Ave to discourage traffic by-passing Veterans to South Meadows
--	--	Circulation	Update truck route list
Double Diamond Boulevard	Double R Boulevard / Double Diamond Parkway	Circulation	Dual left from SB Double Diamond to SB Double R, but must merge immediately if in left lane to right lane if wanting to turn right onto Damonte Ranch from Double R
--	--	Connectivity	Little connectivity for pedestrians and bicyclists to travel east & west of I-80 & Virginia Street. Would like to see protected bike lanes/passages to connect both sides.
Damonte Ranch Extension	--	Connectivity	Construct a bike path paralleling the new extension
--	--	Connectivity	Better connectivity for sidewalks and bike paths between existing and incoming developments
Rio Wrangler Parkway	--	Connectivity	Crosswalks and walking paths do not align
Curti Ranch Road	--	Connectivity	Congestion from through traffic
Western Skies Dr	--	Connectivity	Install bike facilities on Western Skies Drive
Western Skies Dr	--	Connectivity	Install pedestrian facilities
Western Skies Dr	--	Connectivity	Construct a roadway connection from Western Skies Drive to McCauley Ranch Boulevard (behind Damonte Ranch HS)
--	--	Future Development	Include all future development (approved and unapproved) in South Meadows Study
--	--	Future Development	Include Sunny Hills in South Meadows Study
Rio Wrangler Parkway	--	Future Development	Limited access onto Rio Wrangler for new development north of Damonte Ranch HS (north side of McCauley Ranch Blvd)
--	Double Diamond Parkway / Carat Avenue	General	Exiting conditions is stop controlled not a signal
Geiger Grade	--	Horses	Add fencing from Geiger Grade to Hidden Valley
--	--	Horses	Maintain wildlife watering stations
--	--	Horses	New developments in Virginia Hills should construct permanent fencing around the development area
Kenneth Way	--	Horses	Kenneth Way needs Cattle Guard (east of Virginia Foothills Road)
Veterans Parkway	--	Horses	Add permanent fencing between S. Virginia Street and Geiger Grade
Geiger Grade	--	Horses	Needs fencing and cattle guards
--	I-580 & S. Virginia Street	Park & Ride	Establish a Park & Ride near interchange
--	--	Pedestrian	Construct a pedestrian bridge behind Double Diamond Elementary School (closed due to flooding)
Rio Wrangler Parkway	--	Pedestrian	Add a mid-block crosswalk on Rio Wrangler between Misty Meadows and Copper Springs
Rio Wrangler Parkway	--	Pedestrian	Add a mid-block crosswalk on Rio Wrangler approximately 100 feet west of Brittany Park
--	--	Pedestrian	Provide greenspace between sidewalks/paths and busy streets
--	Veterans Parkway / Pesaro Way / Cesena Way	Pedestrian	Stripe crosswalks across Veterans Parkway
Veterans Parkway	--	Pedestrian	Install a trail crossing approximately 700' south of the Veterans Parkway / Long Meadows Drive intersection
Steamboat Parkway	--	Pedestrian	Install pedestrian crossing in front of Damonte Ranch Park
--	Rio Wrangler Parkway / Western Skies Drive	Pedestrian	Pedestrian crossing on north leg of intersection
Steamboat Parkway	--	Pedestrian	Improve crosswalks
--	--	Presentations	Include City of Reno Ward 3 Neighborhood Advisory Board in public meetings
--	--	Presentations	Choose a new venue for the next South Meadows public meeting
Rio Wrangler Parkway	Rio Wrangler Parkway / Baton Drive	Safety	Install a RRFB at the south crosswalk at the Rio Wrangler Pkwy / Baton Dr intersection
Rio Wrangler	Rio Wrangler Parkway / Baton Drive	Safety	Install better lighting at the south crosswalk at the Rio Wrangler Pkwy / Baton Dr intersection
Rio Wrangler Parkway	Rio Wrangler Parkway / Curti Ranch Road	Safety	Install advance signal warning signs on SB Rio Wrangler at Curti Ranch Rd. Signal is obstructed from trees/shrubs.



Foothill Road	--	Safety	Very Narrow, No sidewalks or shoulder
--	South Meadows Parkway / Echo Valley Drive	Safety	No visibility/sight line issues
--	South Meadows Parkway / Echo Valley Drive	Safety	Unusual dual NB left-turn lanes at stop control
Veterans Parkway	Veterans Parkway / Long Meadow Drive	Safety	Trim vegetation along Veterans Parkway
Cesena Way	--	Safety	Traffic Calming on Cesena Way
Sandhill Road	--	Safety	Speeding
Trademark Drive	--	Safety	Speeding
Double Diamond Boulevard	--	Safety	Speeding
--	Double R Boulevard / Lauren Court	Safety	Very busy with conflicting movements
--	Veterans Parkway / Geiger Grade Road	Safety	Install advance signage for the EB right turn only lane
South Meadows Parkway	--	Safety	Lane departure issues between Wilbur May and Double Diamond especially an issue with trucks coming from industrial area.
--	Steamboat Parkway / Carat Avenue	Safety	Sight issues turning left onto Steamboat due to landscaping
--	Rio Wrangler Parkway / Yee Haw Way	Safety	Sight issues turning onto Rio Wrangler Parkway
--	Rio Wrangler Parkway / Yee Haw Way	Safety	Vehicles turning onto Rio Wrangler not looking for pedestrians/students
--	Veterans Parkway / Wind Walker Drive	Safety	Entrance to Bella Vista should be right-in/right-out at Wind Walker due to proximity to nearby intersections
--	--	Safety	Traffic Calming on Streets
--	--	Safety	Lower Speed Limits / Enforce Posted Limits
--	--	Safety	Trees in medians impact medians on several Roadways (i.e. i.e. Veteran's, Steamboat, Rio Wrangler)
Carat Avenue	--	Safety	Pedestrians jaywalking across Carat Ave between Double Diamond Ranch Walking/Bike Path and Wilbur May Parkway
South Meadows Parkway	--	Safety	Speeding between Double Diamond Pkwy and Wilbur May Pkwy
South Meadows Parkway	--	Safety	Semi trucks do not have enough space for lane crossings/drifts between Double Diamond Pkwy and Wilbur May Pkwy
--	Steamboat Parkway / Rio Wrangler Parkway	Safety	Pedestrian safety concern crossing the south crosswalk on Rio Wrangler Parkway
Mt. Rose Highway	--	Safety	Improve Pedestrian/Bike safety on Mt. Rose Hwy at I-580 interchange
S. Virginia Street	--	Safety	Improve Pedestrian/Bike safety on N. Virginia St at I-580 interchange (south)
--	Veterans Parkway / Geiger Grade Road	Safety	Improve Pedestrian/Bike safety at Geiger Grade Roundabout
--	Arrowcreek Parkway / Zolezzi Ln	Safety	Low Visibility from yielding EB right turn
--	Double R Boulevard / Sandhill Road	Safety	Safety concern with increased traffic from DMV
--	Steamboat Parkway / Brittany Meadows Drive	Safety	Safety concern with left turns from side-street
Carat Ave	--	Safety	Excessive Speeding
--	Carat Avenue / Wilbur May Parkway	Safety	Vehicles running through stop sign
Steamboat Parkway	--	Safety	Increase crosswalk visibility
Veterans Parkway	--	Safety	Evaluate speed limits
Baton Drive	--	School Zone	Install a flashing yellow on Baton Drive when school zone is active
--	--	School Zone	Nick Poulakidas ES at APN 165-251-10, scheduled to open in Aug 2019
--	--	School Zone	Planned new ES on APN 140-731-01 which is anticipated to open in the 2024-2028 timeframe
--	South Meadows Parkway / Mojave Sky Drive	School Zone	Median Reconstructed to allow left-turns
Yee Haw Way	Rio Wrangler Parkway / Yee Haw Way	School Zone	Increase school zone north of Yee Haw Way
Zolezzi Lane	--	School Zone	General safety concerns at Mountain View Montessori School
South Meadows Parkway	--	School Zone	School zone safety on South Meadows Pkwy
Carat Avenue	--	Signage	Install goose crossing signs on Carat Ave (near the pond between Rio Wrangler)
Rio Wrangler Parkway	--	Signage	No traffic control for new apartments on north side of Rio Wrangler (by Misty Meadows?)
--	--	Signage	Signage for lane direction/selection should be located further away from intersection due to queue lengths
--	Veterans Parkway / Geiger Grade Road	Signage	Better lane designation/signage prior to roundabout
--	--	Transit	Provide a nearby service to the Veteran's Administration's Benefits building at 5460 Reno Corporate Drive
South Meadows Parkway	--	Transit	Buses are backing up traffic on South Meadows during peak times - incorporate bus pullouts and/or consolidate stops.
Mt. Rose Highway	--	Transit	Create a transit route on Mt. Rose Highway to TMCC/UNR Redfield



Appendix B

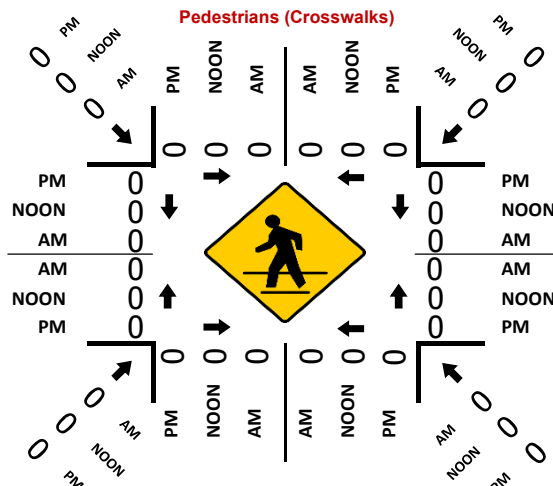
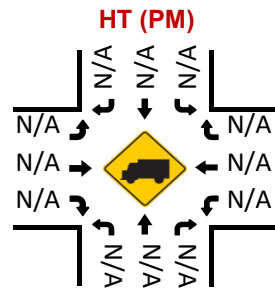
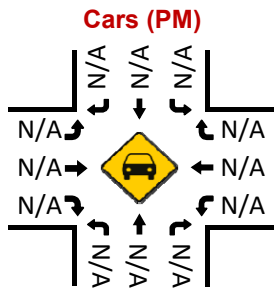
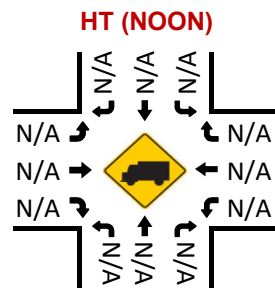
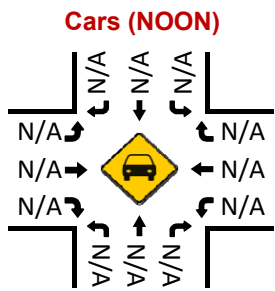
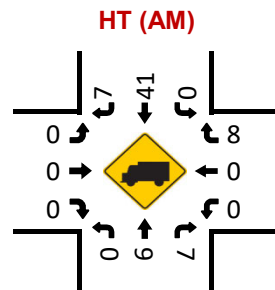
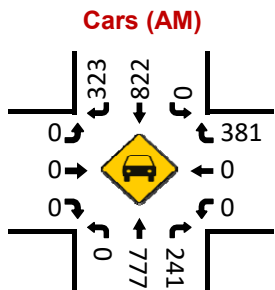
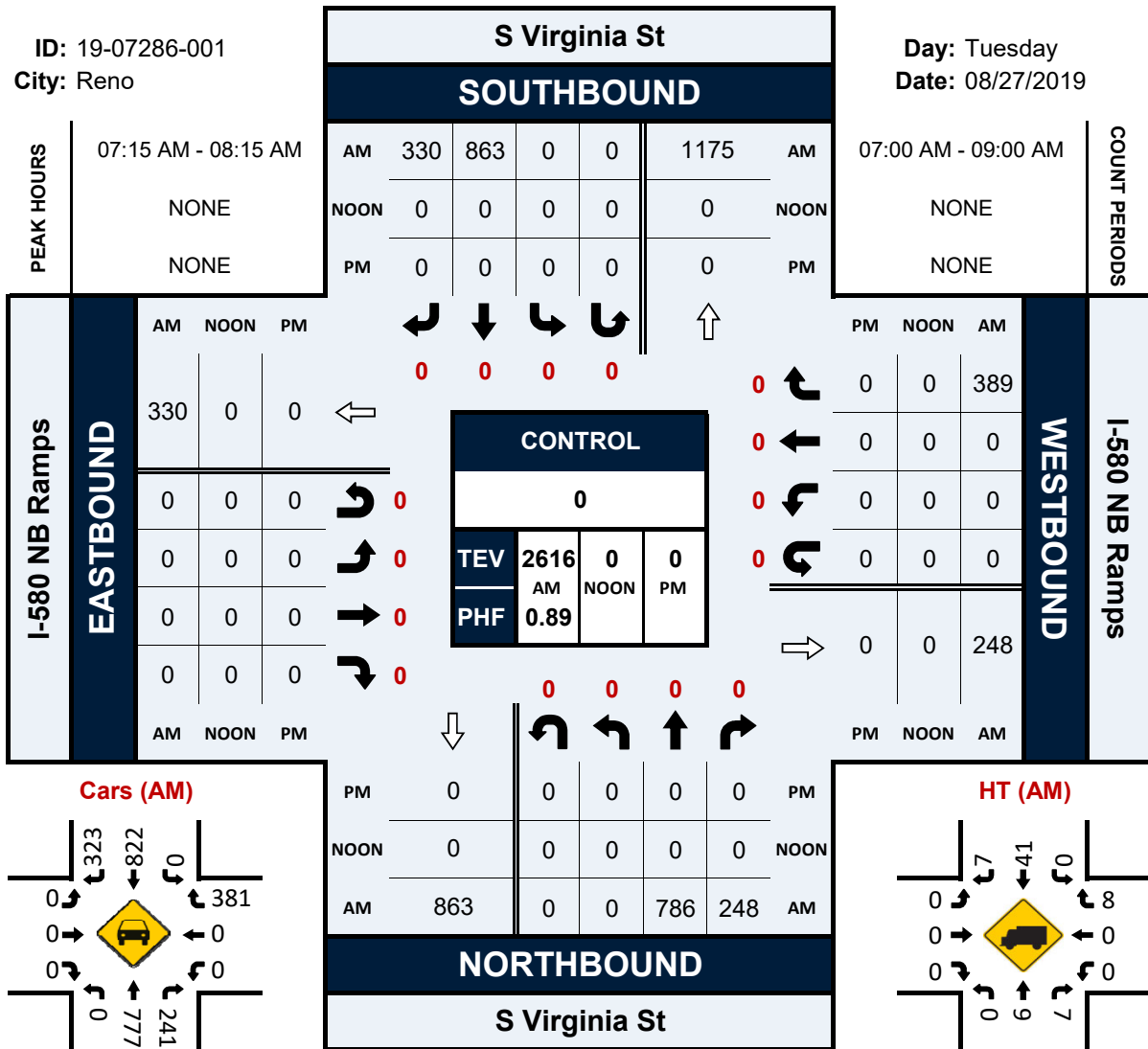
Existing Turning Movement Counts

S Virginia St & I-580 NB Ramps

Peak Hour Turning Movement Count

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City: Reno

Day: Tuesday
Date: 08/27/2019

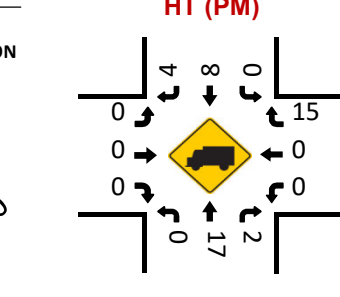
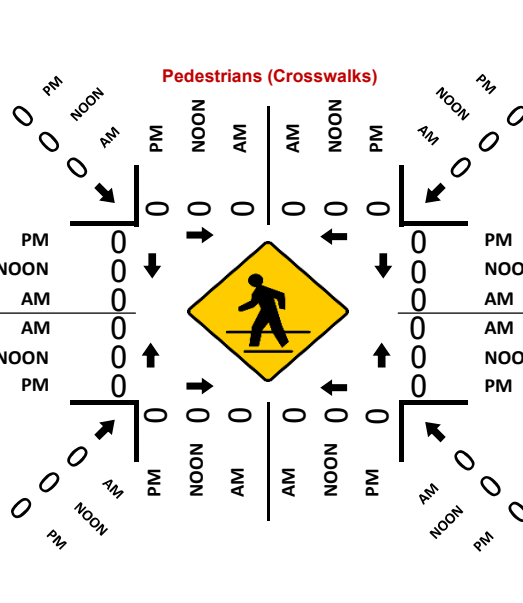
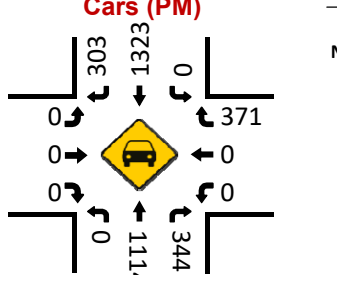
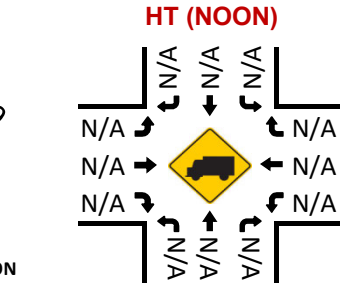
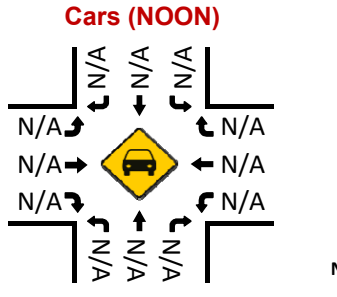
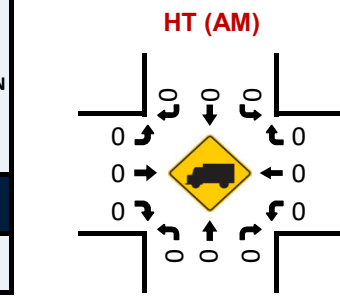
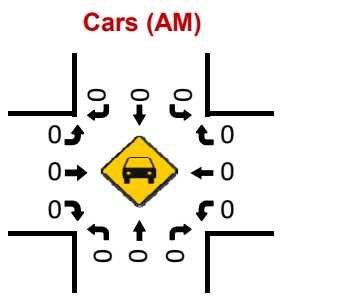
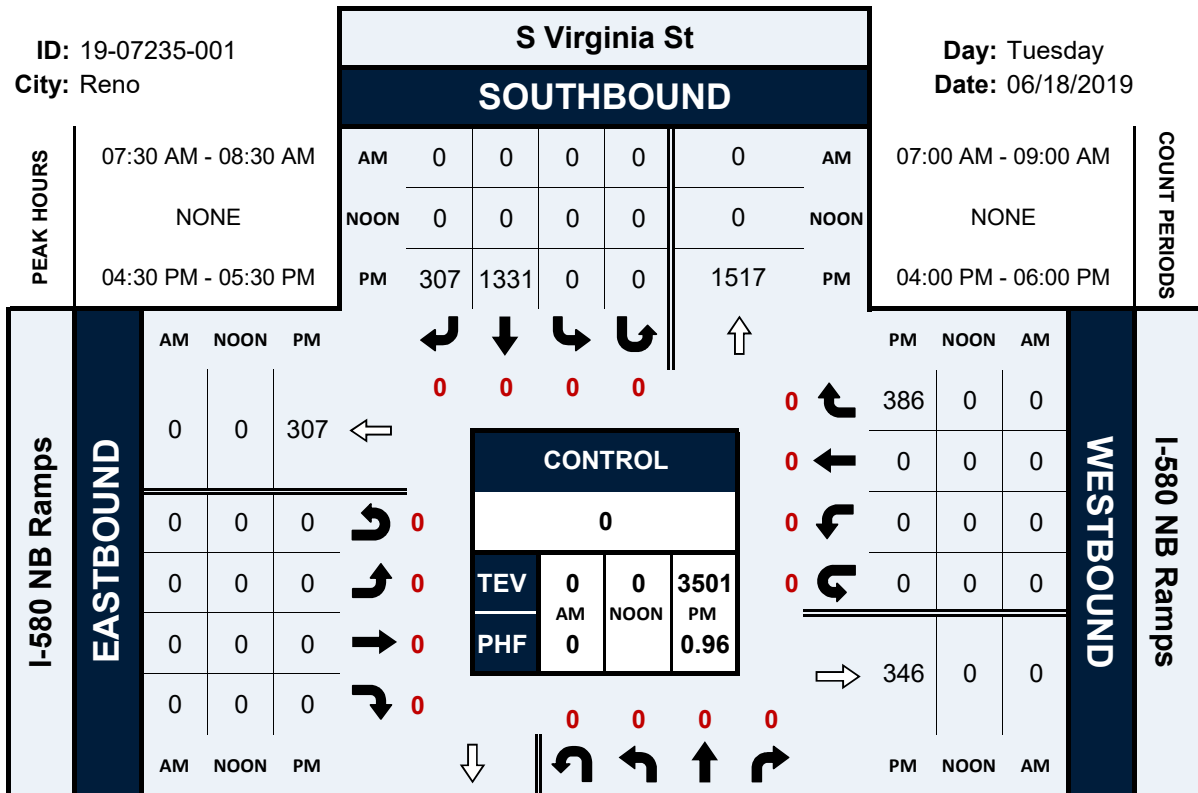


S Virginia St & I-580 NB Ramps

Peak Hour Turning Movement Count

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City: Reno

Day: Tuesday
Date: 06/18/2019

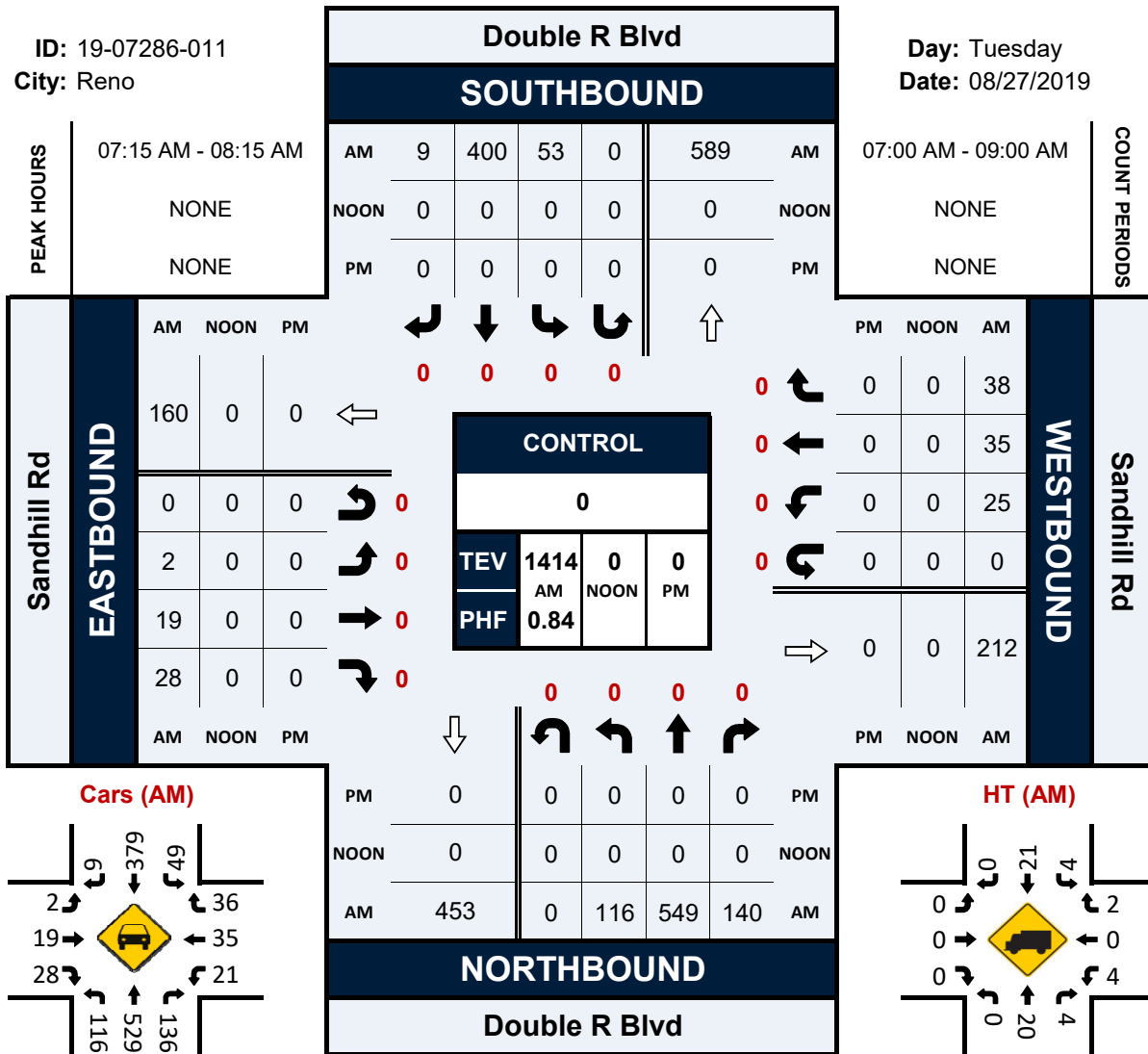


Double R Blvd & Sandhill Rd

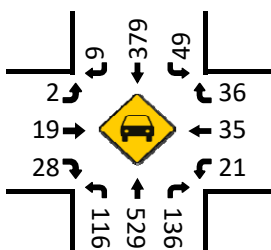
Peak Hour Turning Movement Count

ID: 19-07286-011
City: Reno

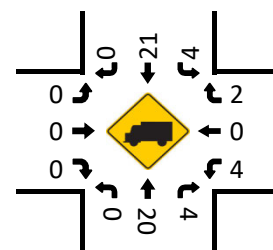
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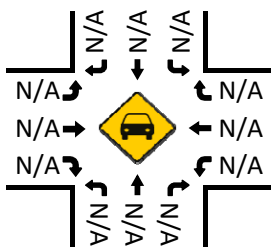
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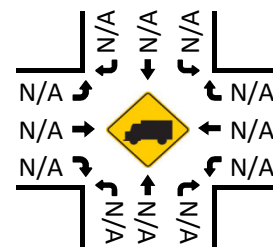
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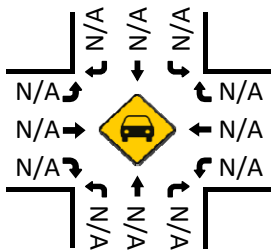
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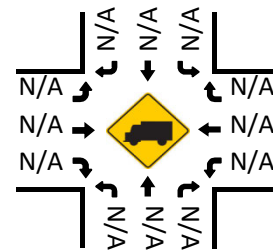
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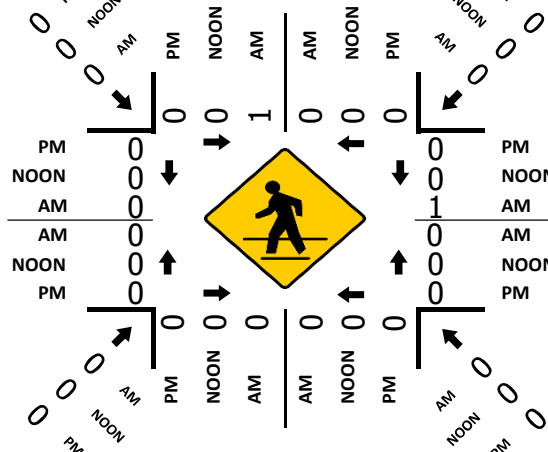
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Pedestrians (Crosswalks)

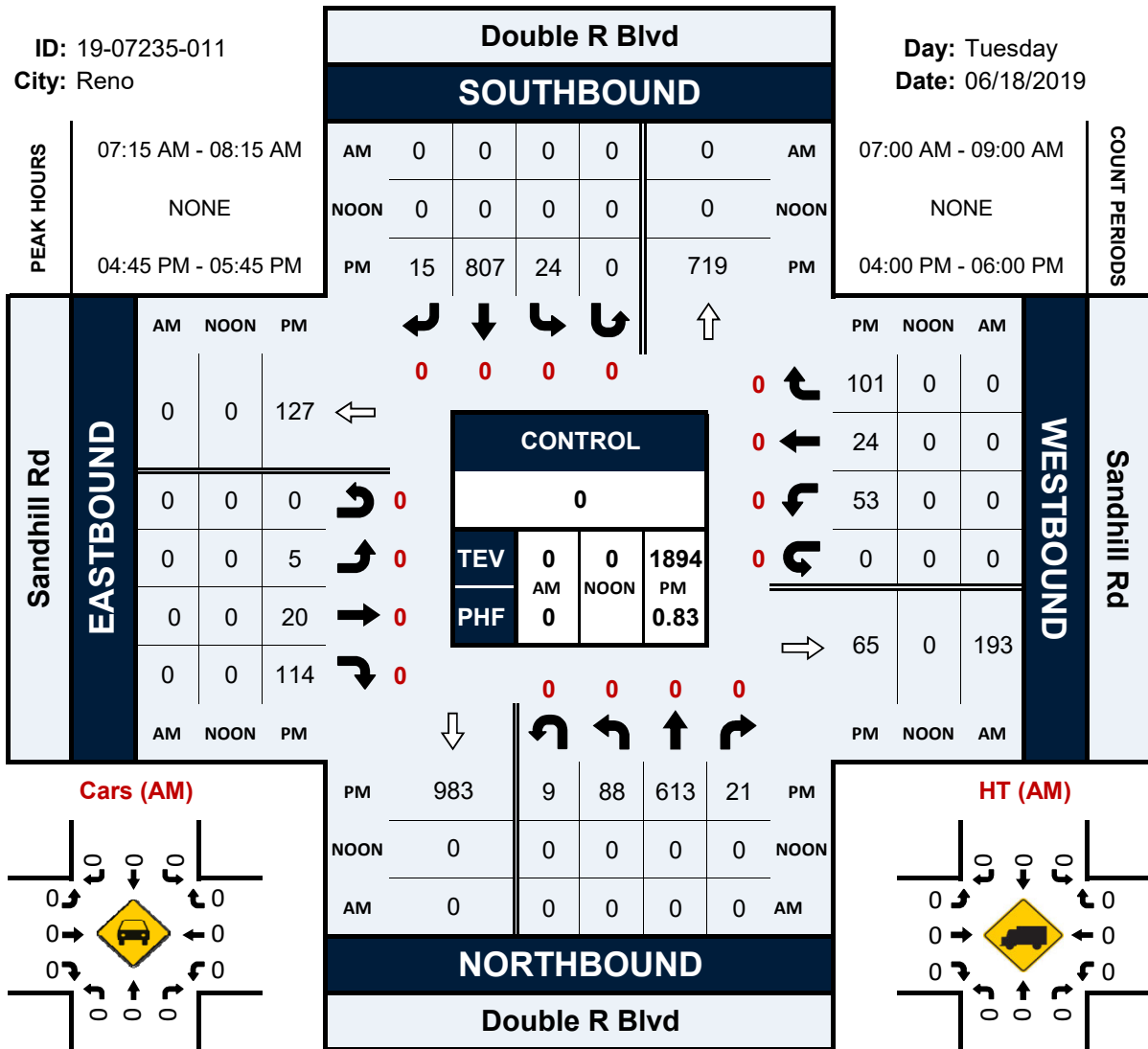


Double R Blvd & Sandhill Rd

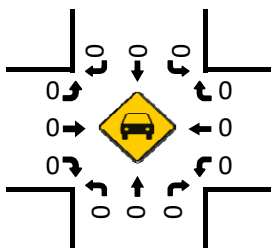
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ID: 19-07235-011
City: Reno

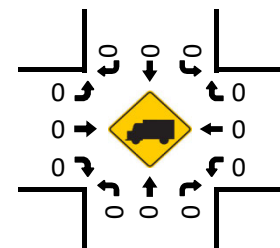
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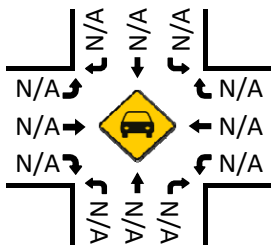
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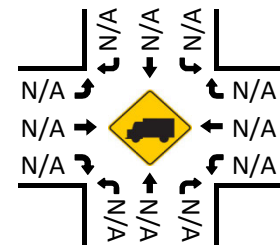
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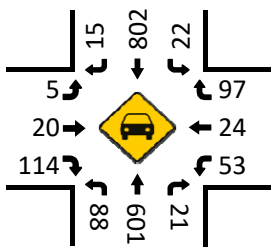
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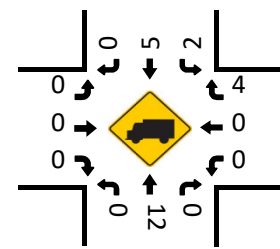
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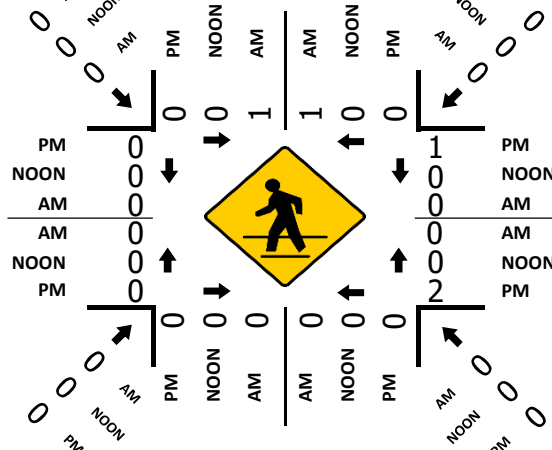
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Pedestrians (Crosswalks)

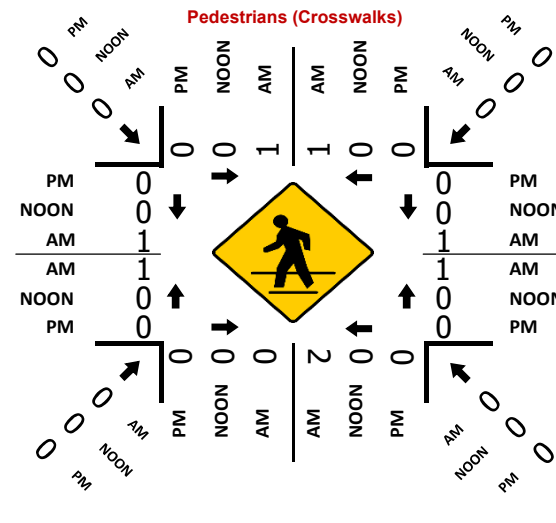
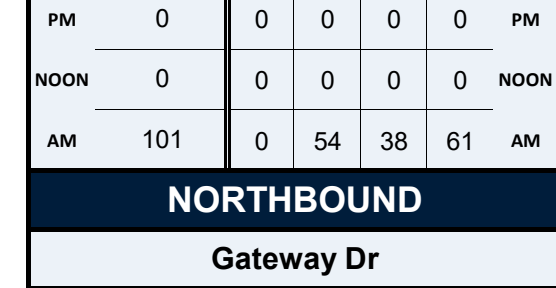
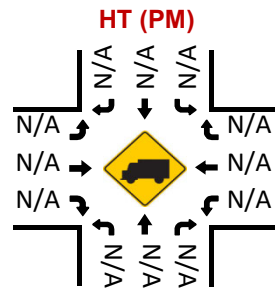
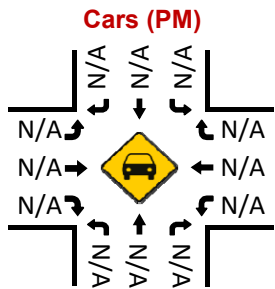
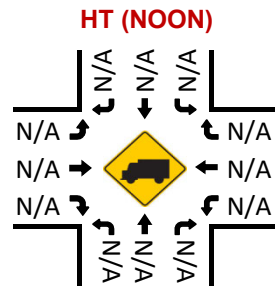
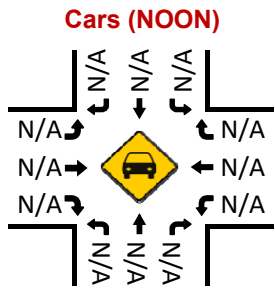
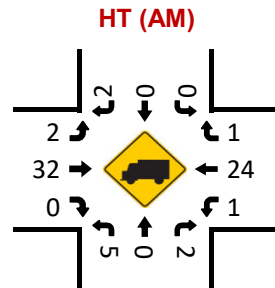
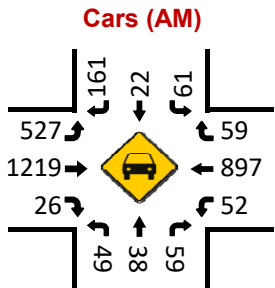
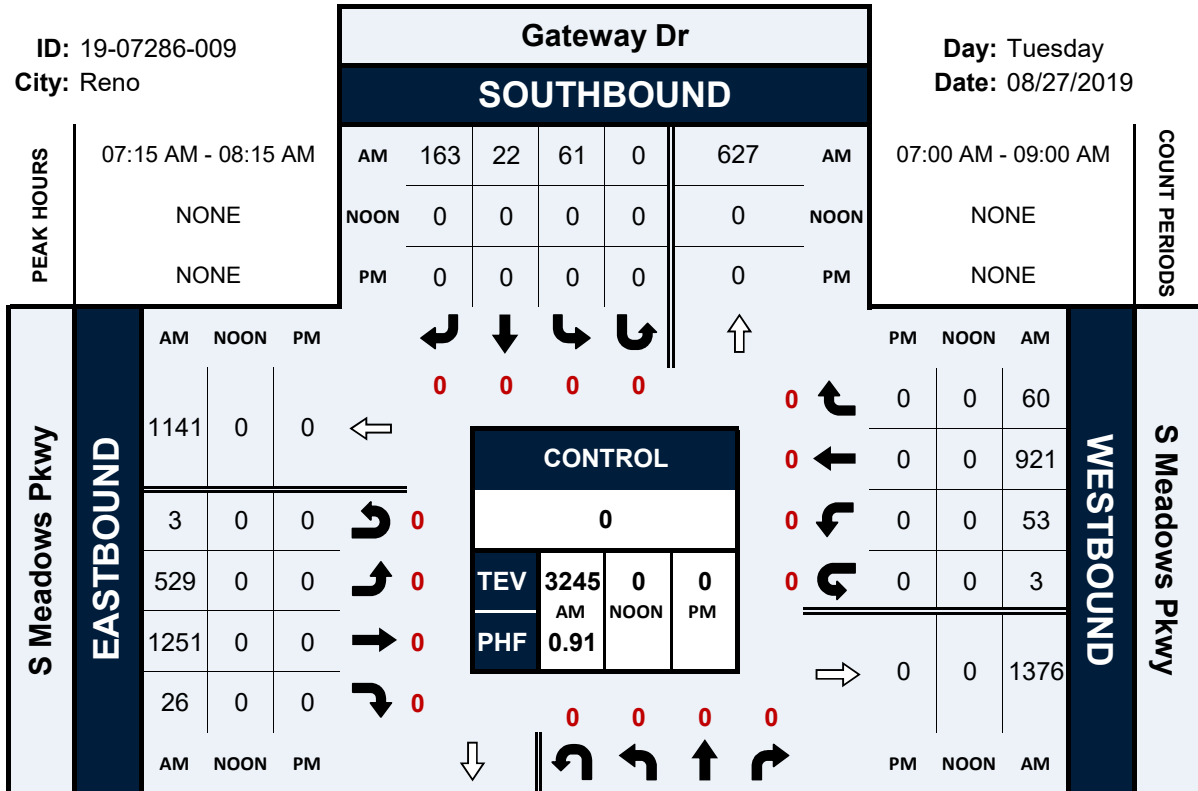


Gateway Dr & S Meadows Pkwy

Peak Hour Turning Movement Count

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City: Reno

Day: Tuesday
Date: 08/27/2019

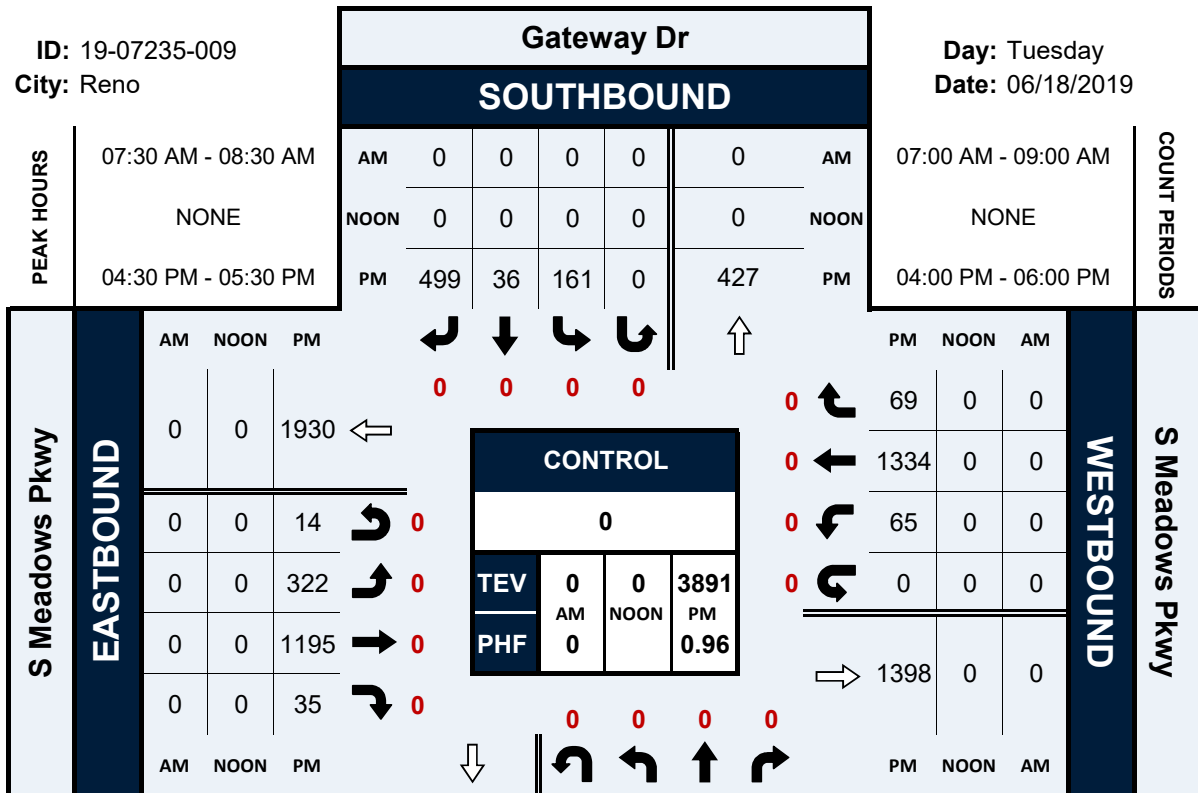


Gateway Dr & S Meadows Pkwy

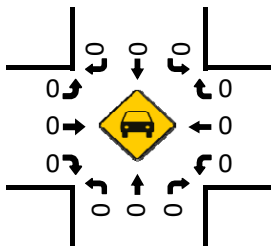
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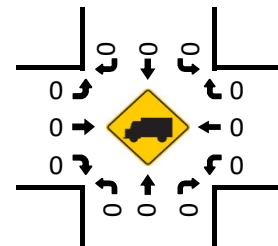
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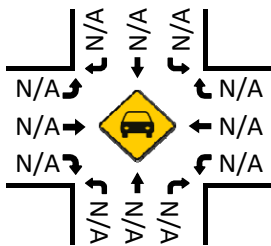
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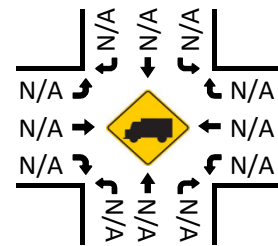
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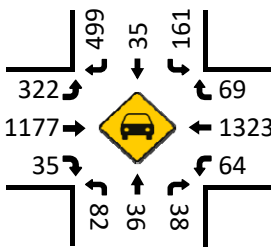
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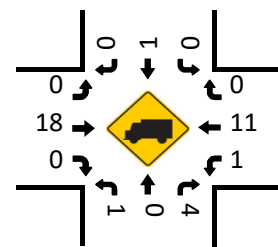
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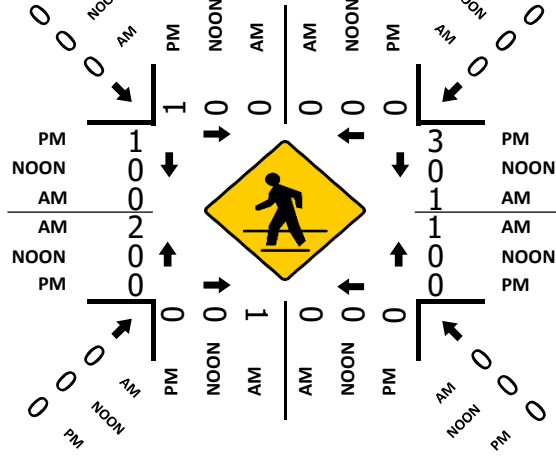
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HT (PM)



Pedestrians (Crosswalks)

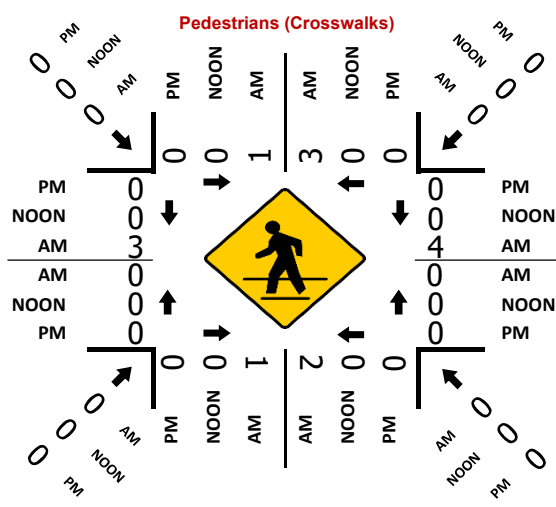
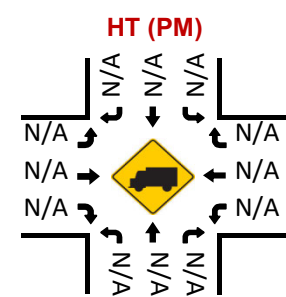
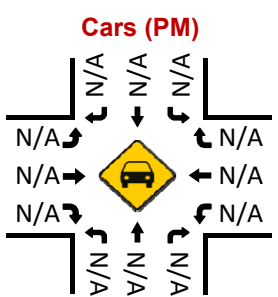
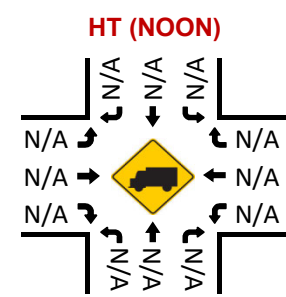
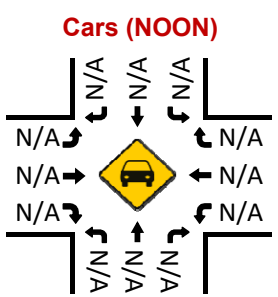
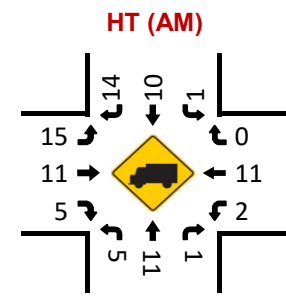
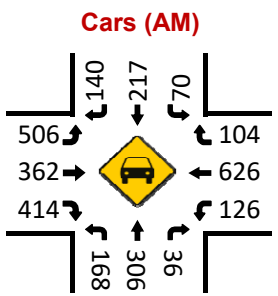
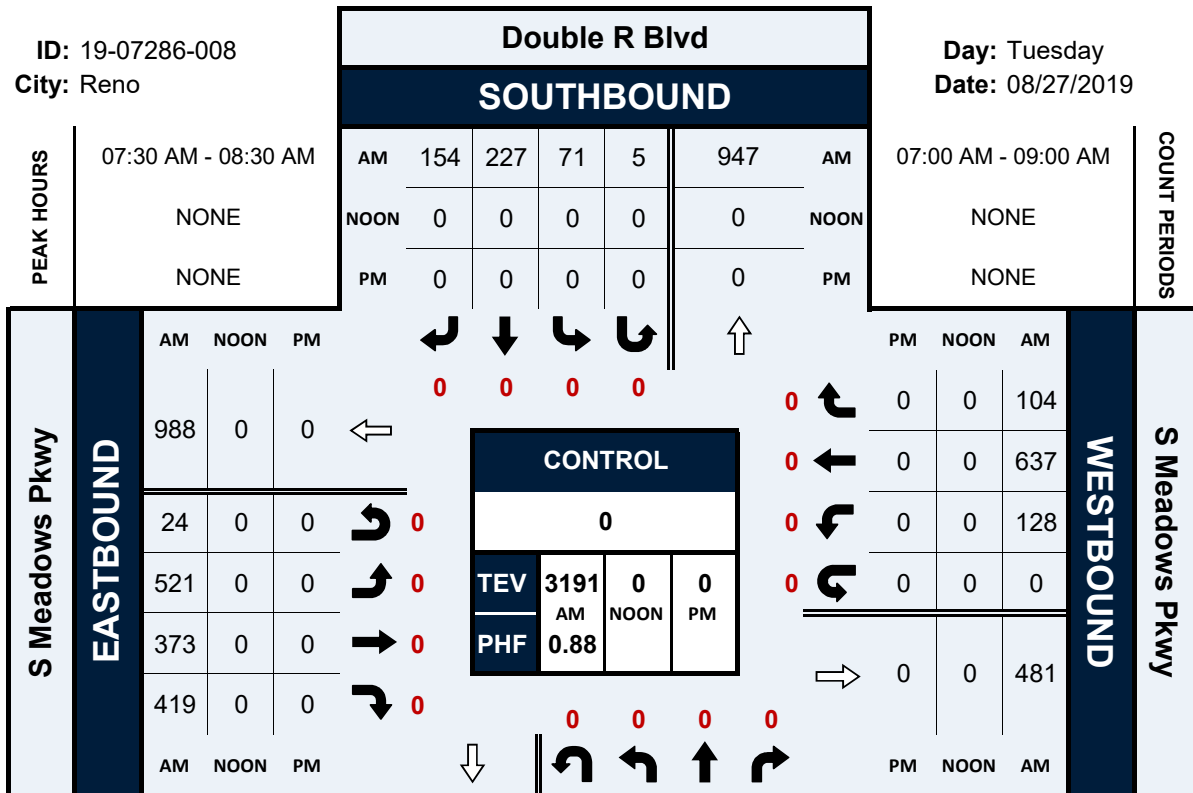


Double R Blvd & S Meadows Pkwy

Peak Hour Turning Movement Count

ID: 19-07286-008
City: Reno

Day: Tuesday
Date: 08/27/2019

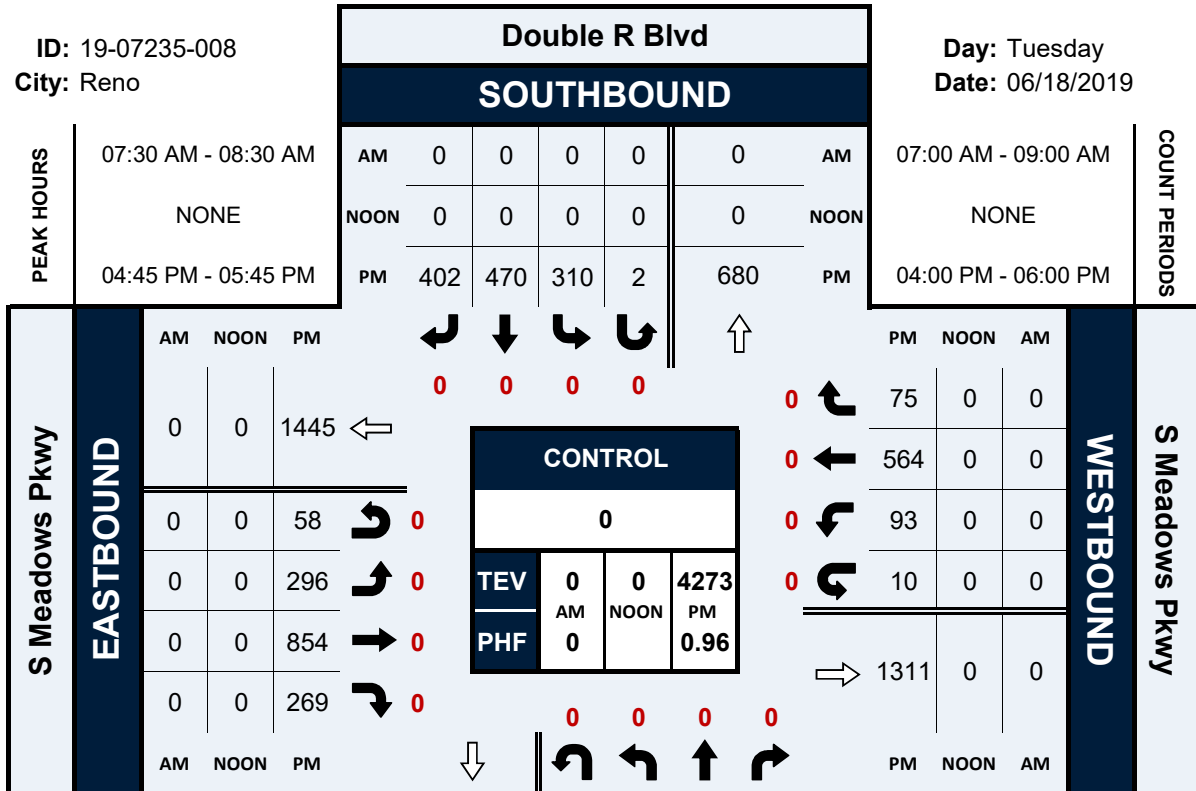


Double R Blvd & S Meadows Pkwy

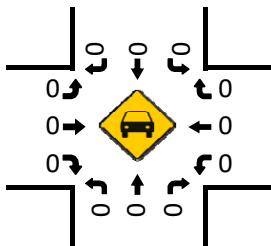
Peak Hour Turning Movement Count

ID: 19-07235-008
City: Reno

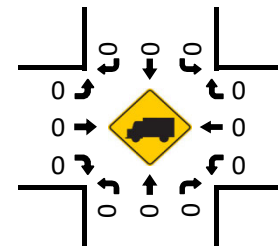
Day: Tuesday
Date: 06/18/2019



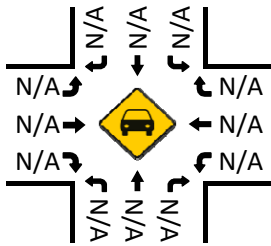
Cars (AM)



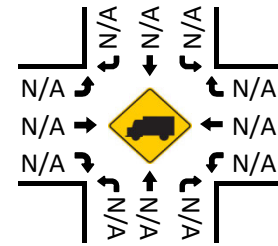
HT (AM)



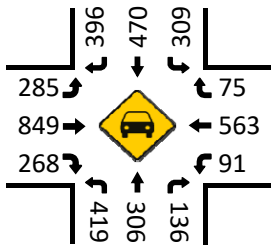
Cars (NOON)



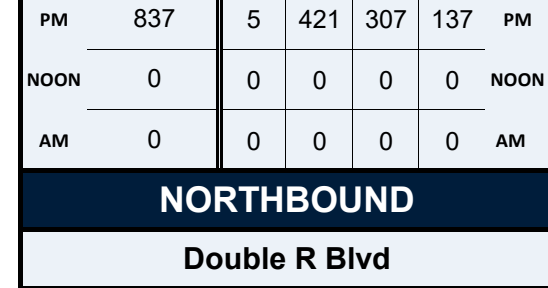
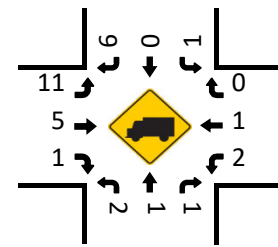
HT (NOON)



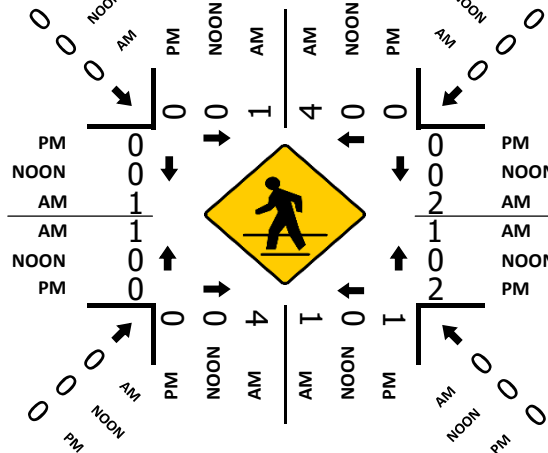
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)

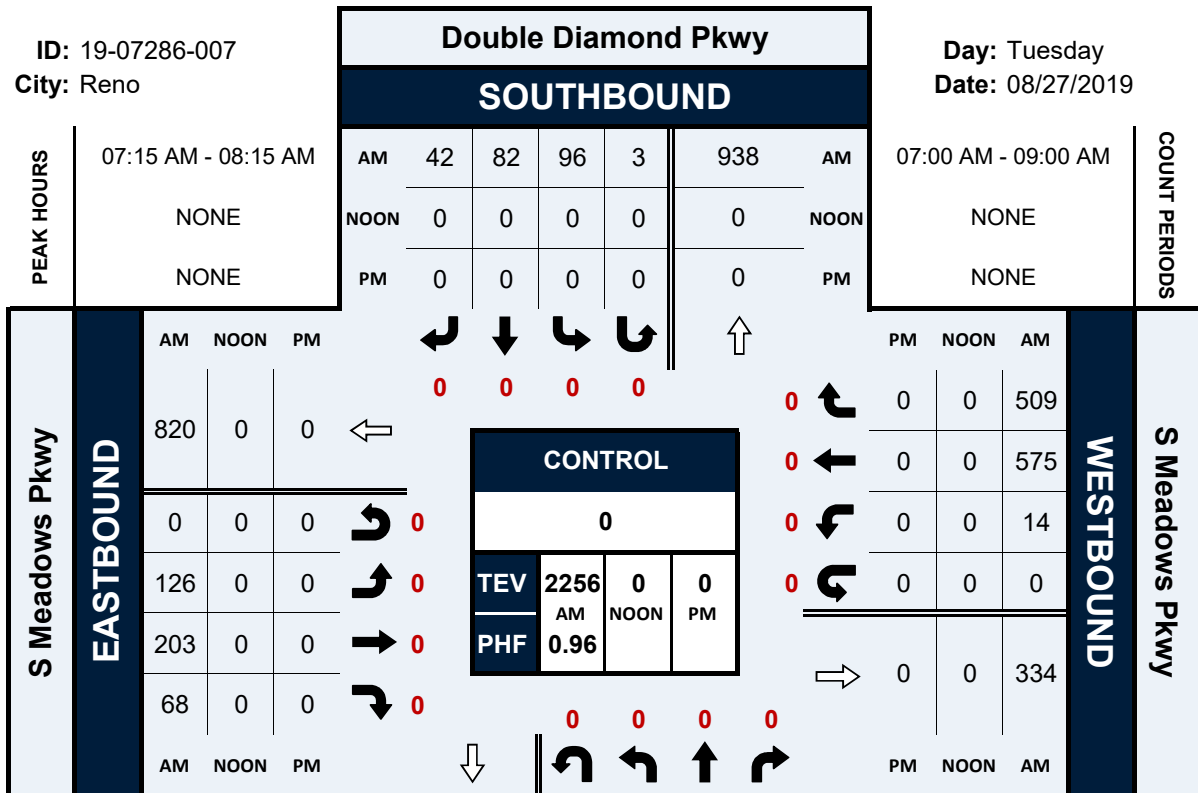


Double Diamond Pkwy & S Meadows Pkwy

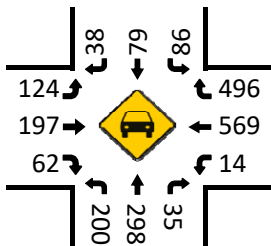
Peak Hour Turning Movement Count

ID: 19-07286-007
City: Reno

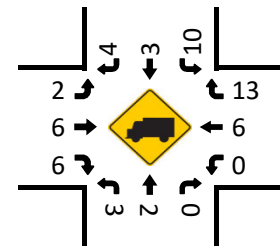
Day: Tuesday
Date: 08/27/2019



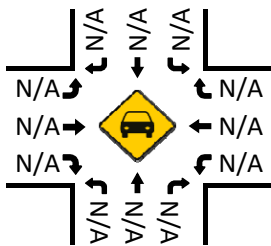
Cars (AM)



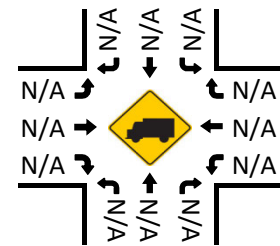
HT (AM)



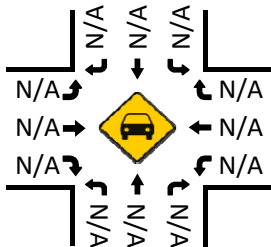
Cars (NOON)



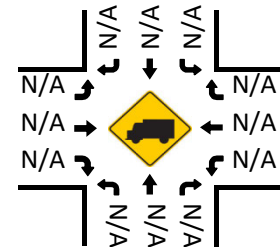
HT (NOON)



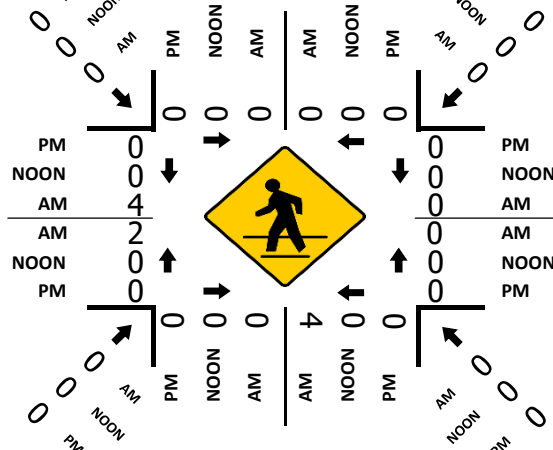
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)

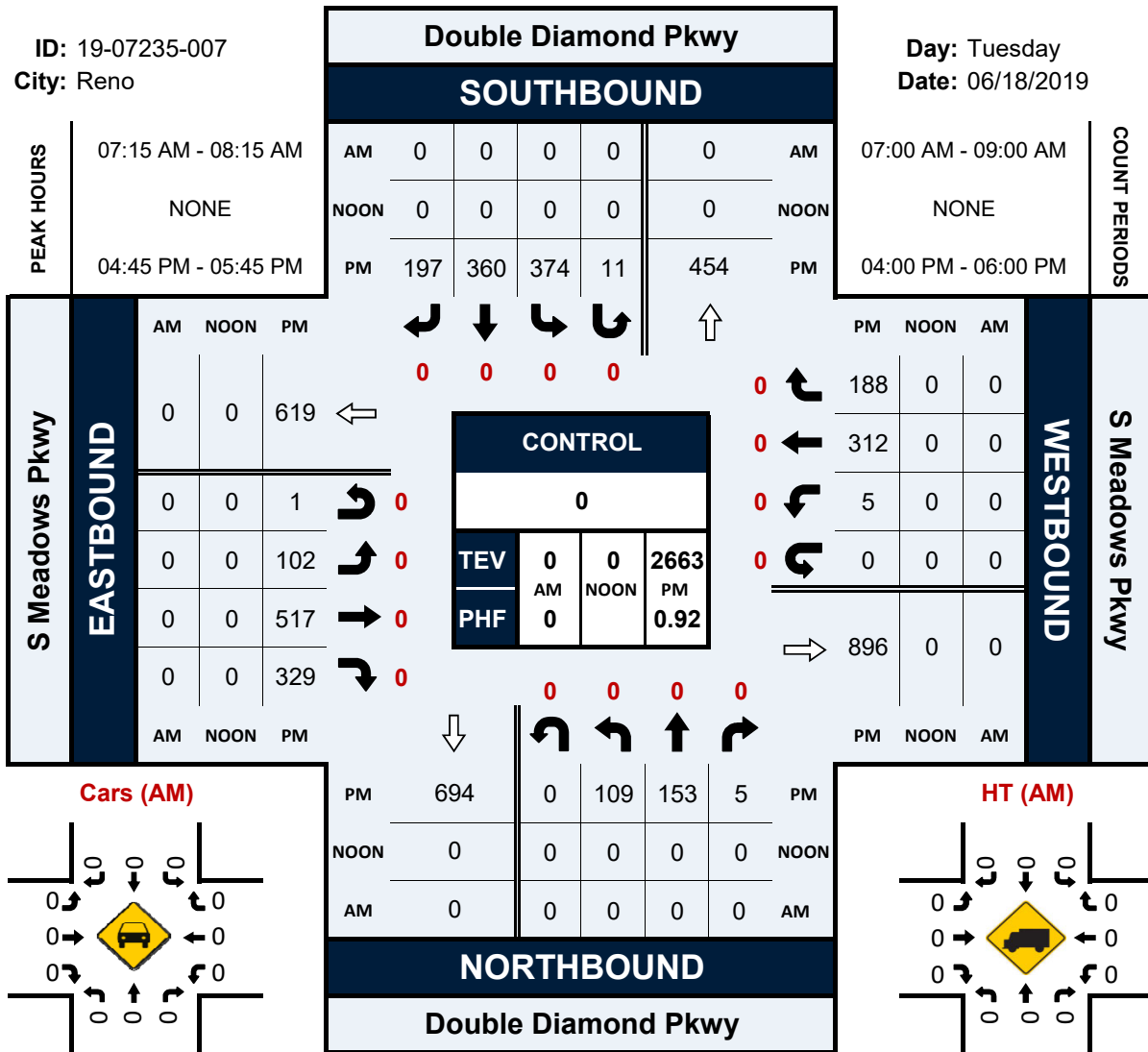


Double Diamond Pkwy & S Meadows Pkwy

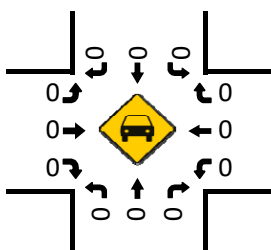
Peak Hour Turning Movement Count

ID: 19-07235-007
City: Reno

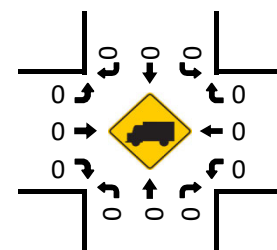
Day: Tuesday
Date: 06/18/2019



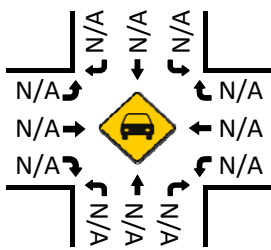
Cars (AM)



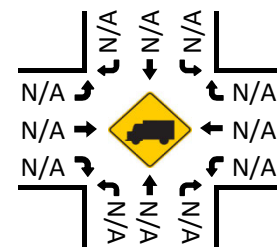
HT (AM)



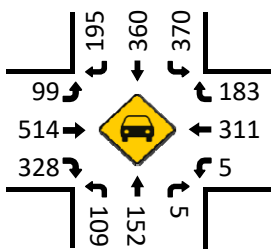
Cars (NOON)



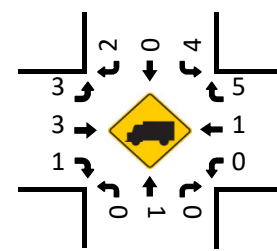
HT (NOON)



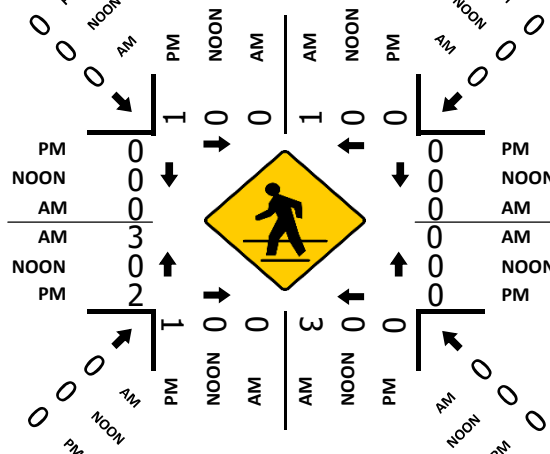
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)

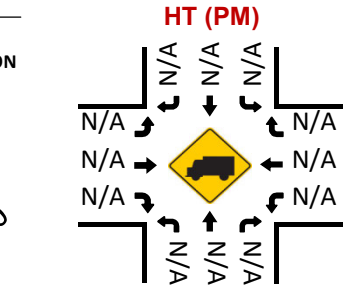
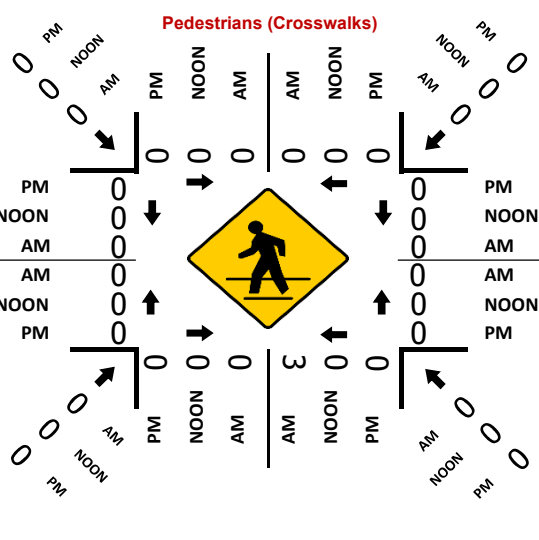
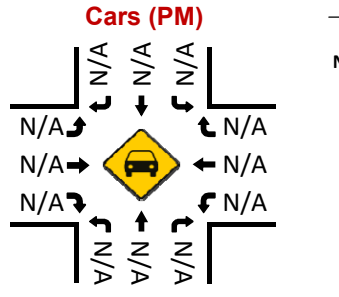
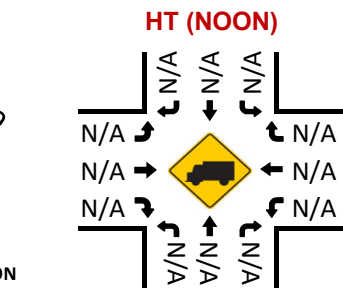
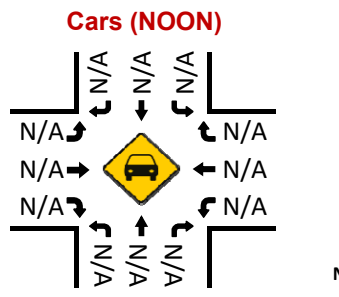
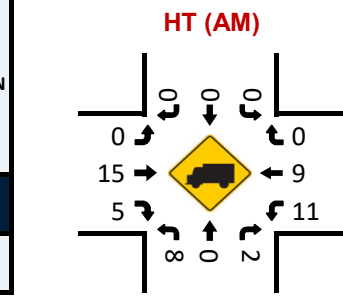
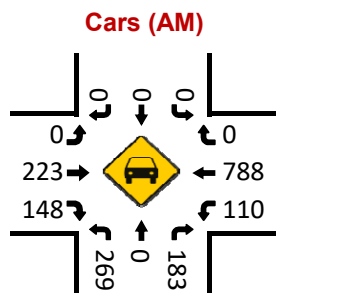
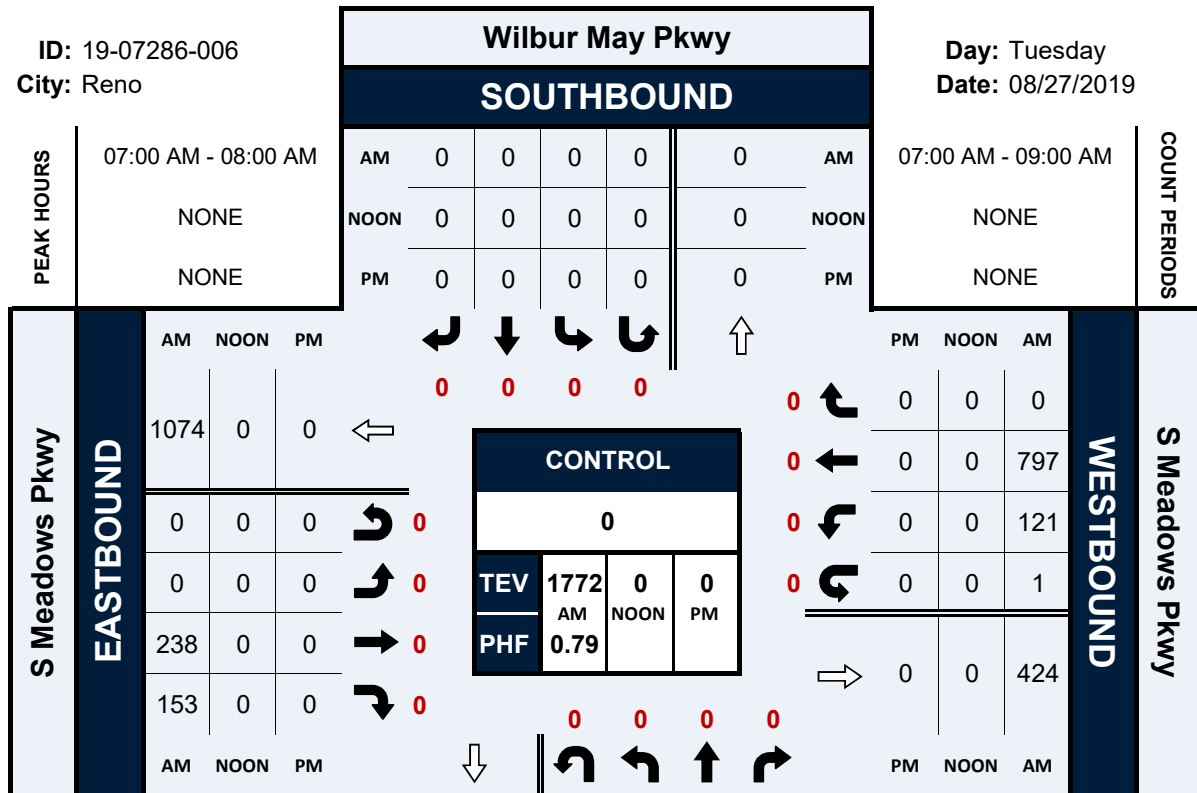


Wilbur May Pkwy & S Meadows Pkwy

Peak Hour Turning Movement Count

ID: 19-07286-006
City: Reno

Day: Tuesday
Date: 08/27/2019

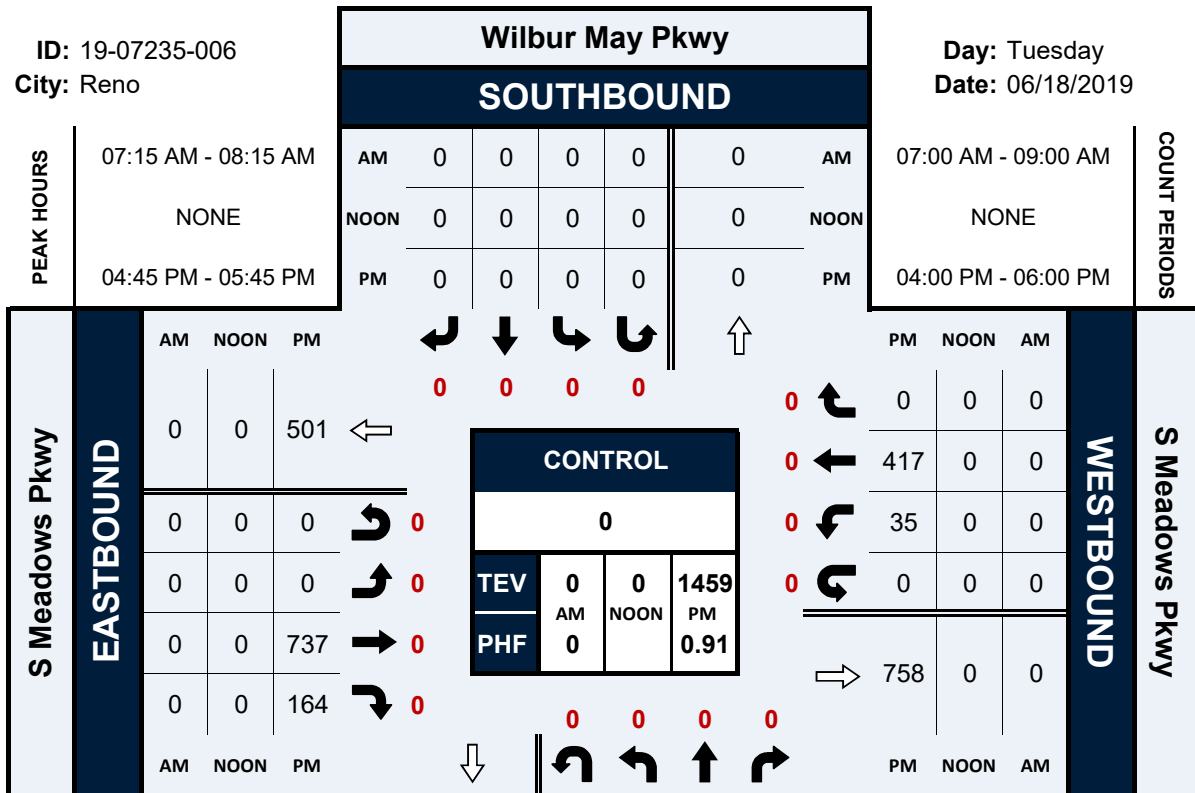


Wilbur May Pkwy & S Meadows Pkwy

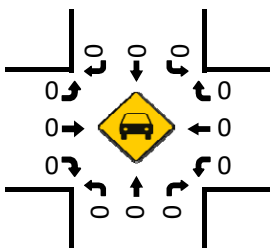
Peak Hour Turning Movement Count

ID: 19-07235-006
City: Reno

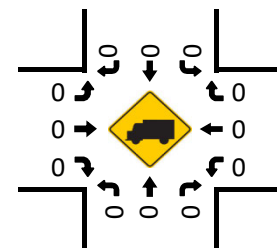
Day: Tuesday
Date: 06/18/2019



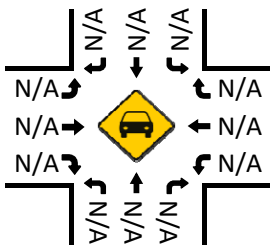
Cars (AM)



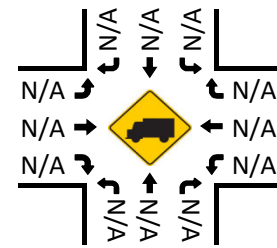
HT (AM)



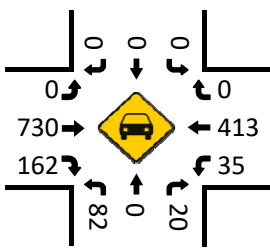
Cars (NOON)



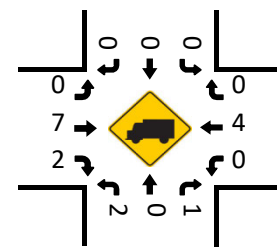
HT (NOON)



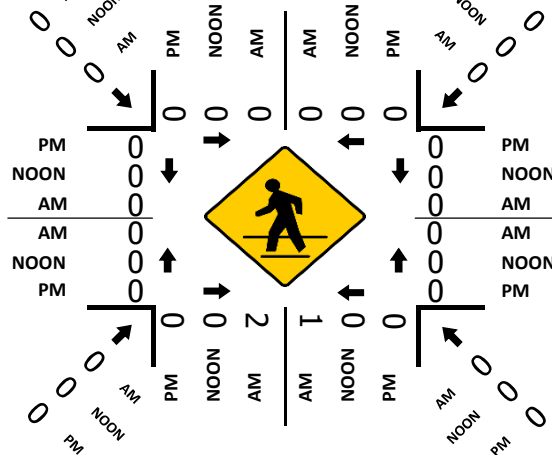
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)

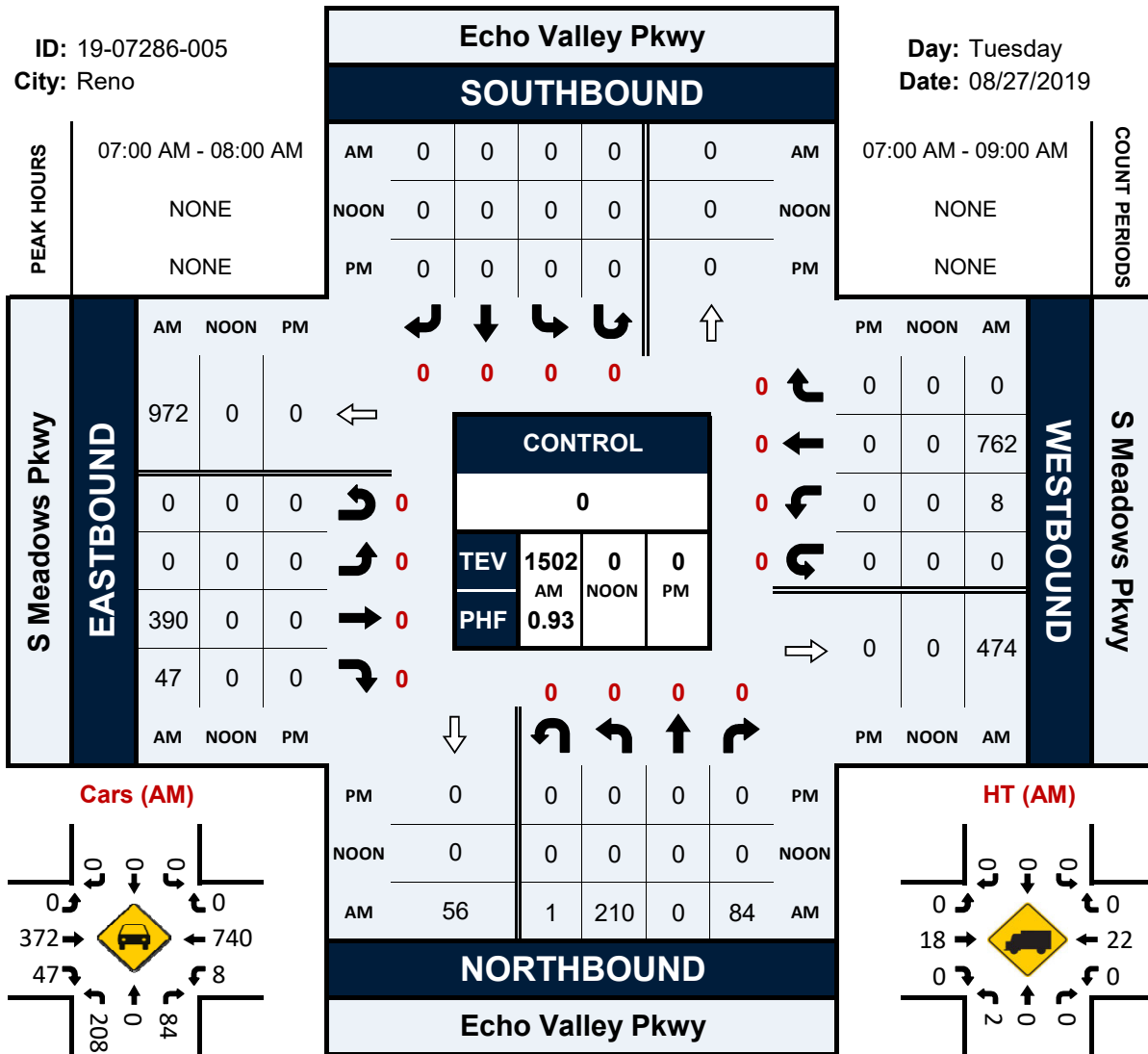


Echo Valley Pkwy & S Meadows Pkwy

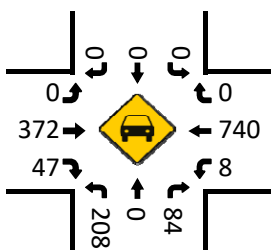
Peak Hour Turning Movement Count

ID: 19-07286-005
City: Reno

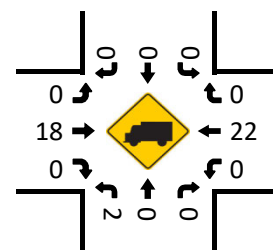
Day: Tuesday
Date: 08/27/2019



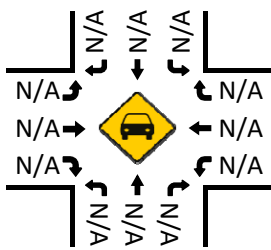
Cars (AM)



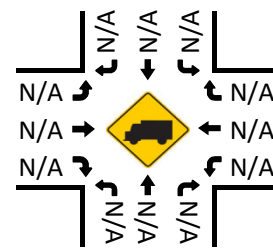
HT (AM)



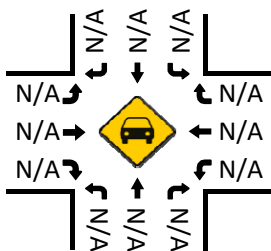
Cars (NOON)



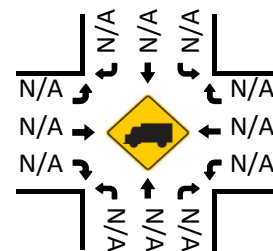
HT (NOON)



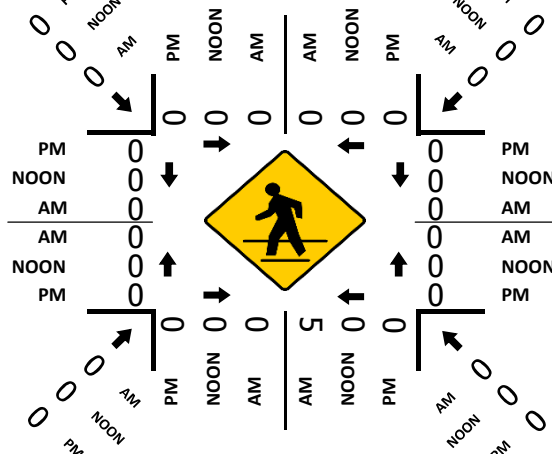
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)

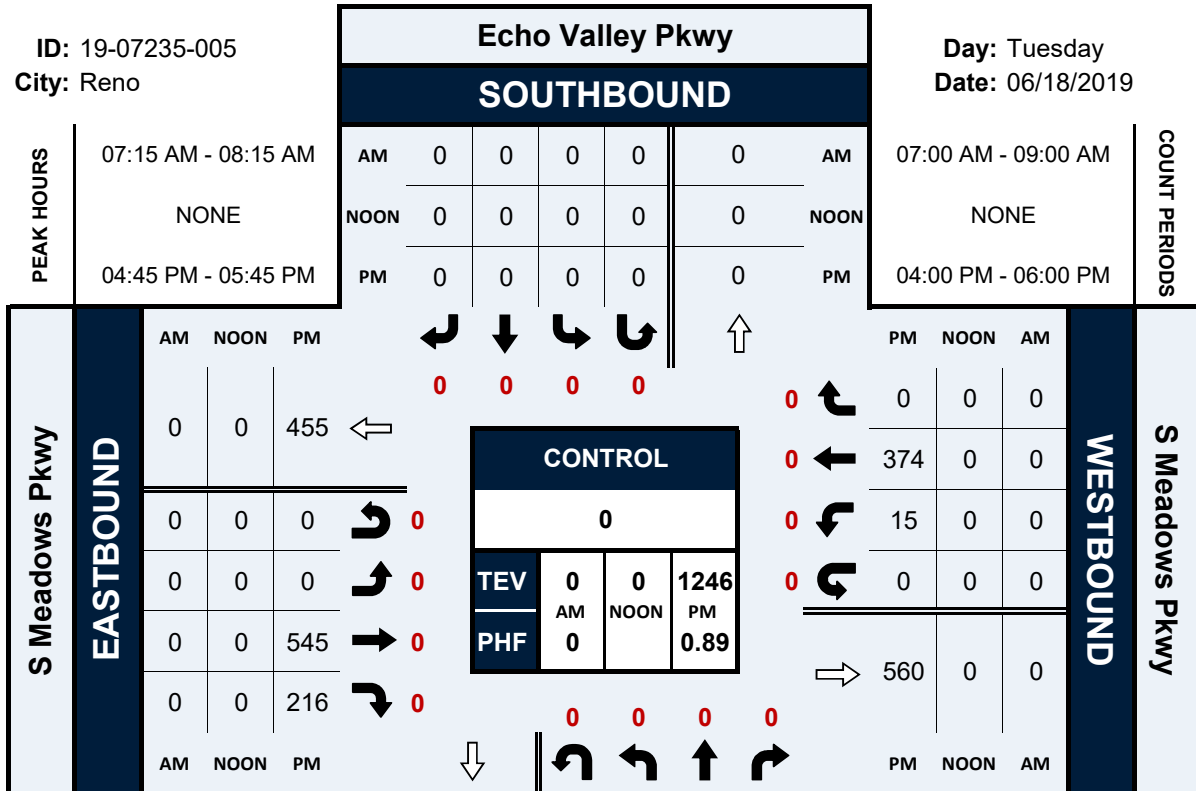


Echo Valley Pkwy & S Meadows Pkwy

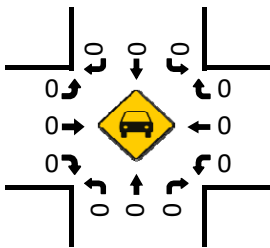
Peak Hour Turning Movement Count

ID: 19-07235-005
City: Reno

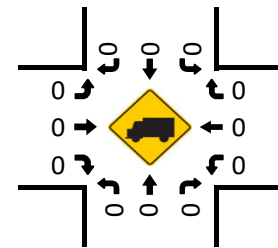
Day: Tuesday
Date: 06/18/2019



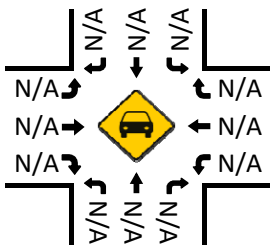
Cars (AM)



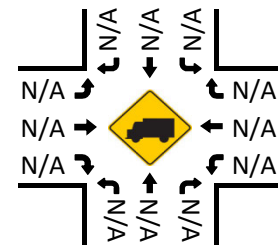
HT (AM)



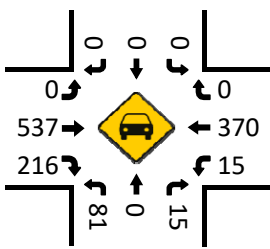
Cars (NOON)



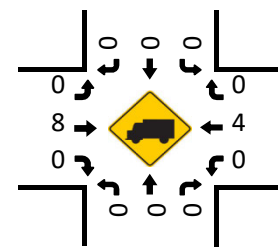
HT (NOON)



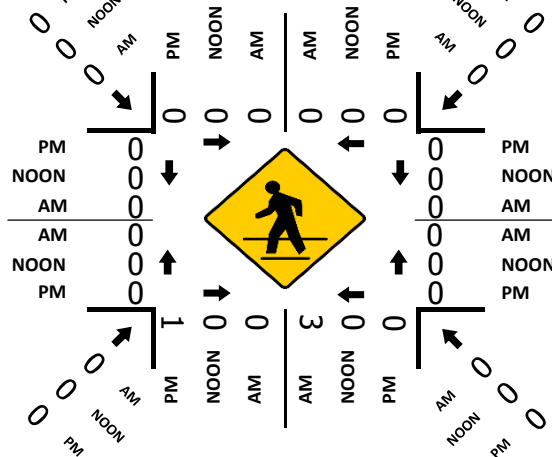
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)

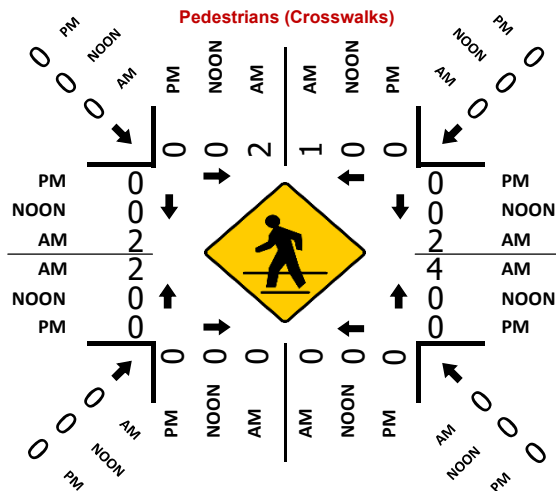
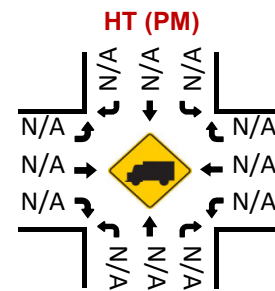
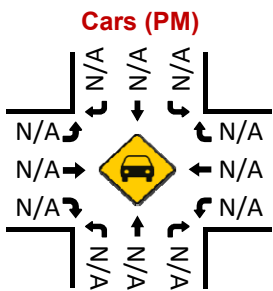
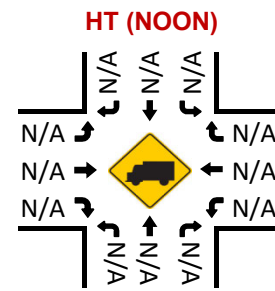
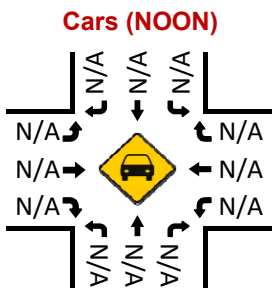
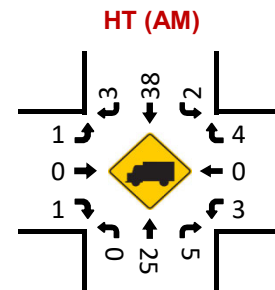
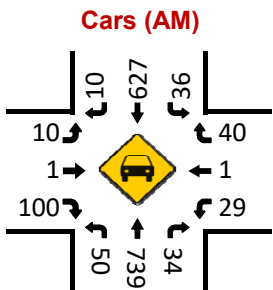
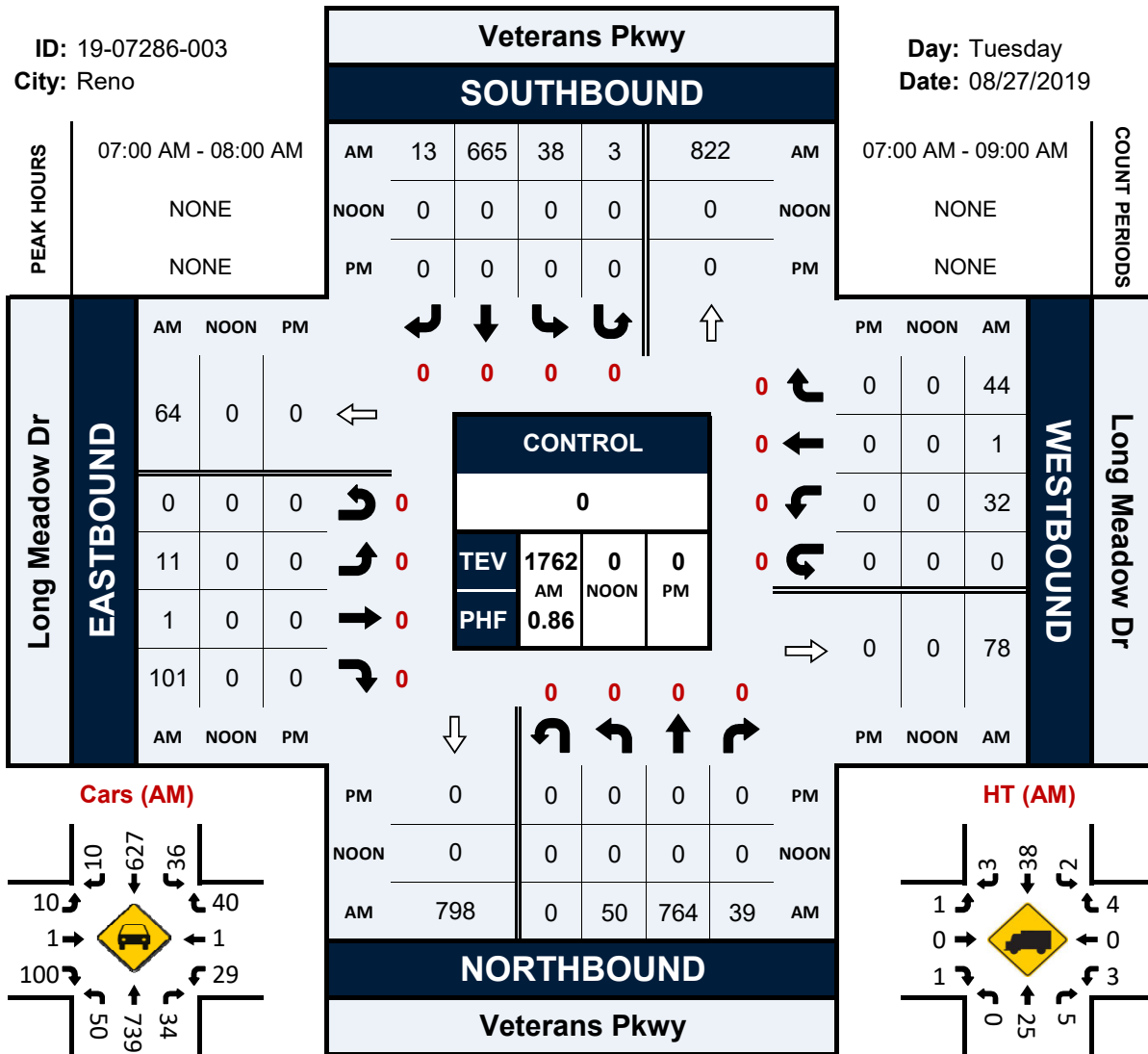


Veterans Pkwy & Long Meadow Dr

Peak Hour Turning Movement Count

ID: 19-07286-003
City: Reno

Day: Tuesday
Date: 08/27/2019

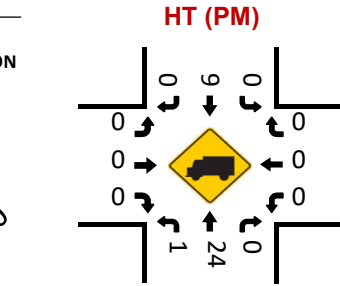
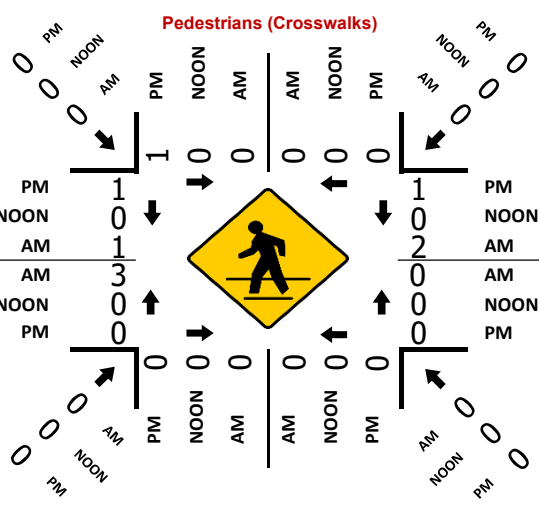
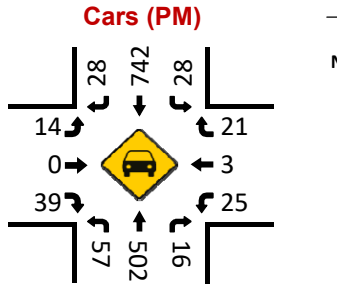
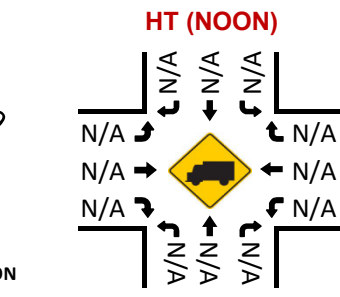
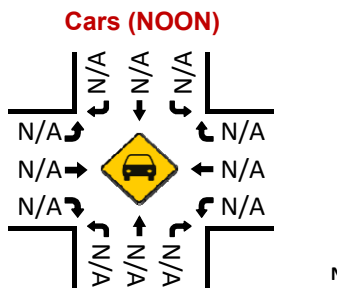
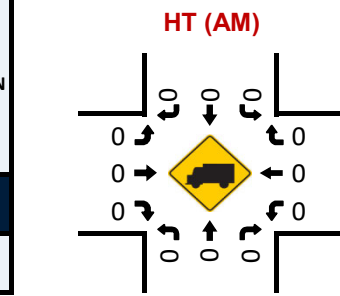
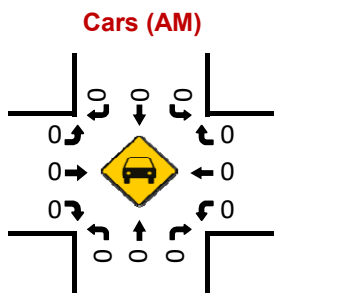
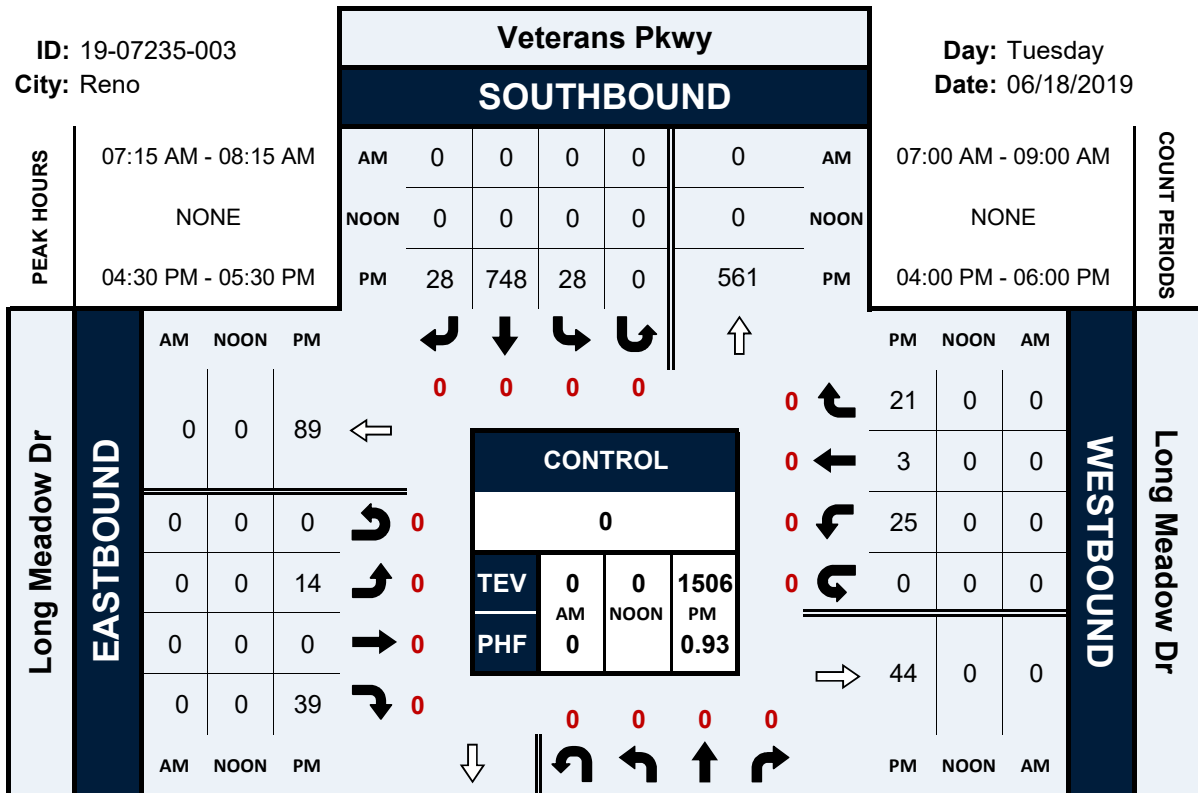


Veterans Pkwy & Long Meadow Dr

Peak Hour Turning Movement Count

ID: 19-07235-003
City: Reno

Day: Tuesday
Date: 06/18/2019

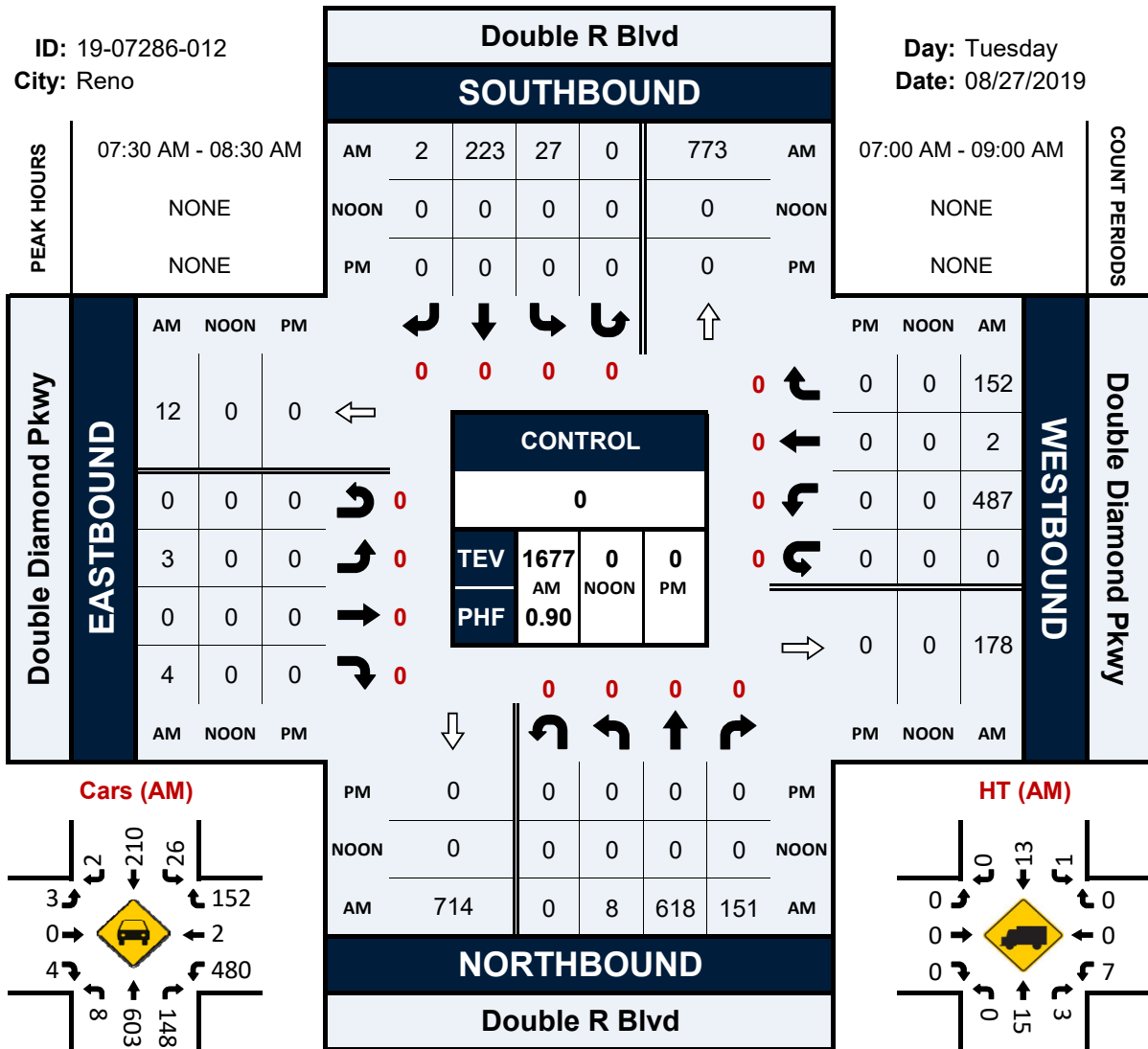


Double R Blvd & Double Diamond Pkwy

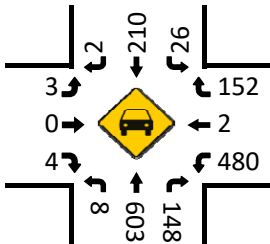
Peak Hour Turning Movement Count

ID: 19-07286-012
City: Reno

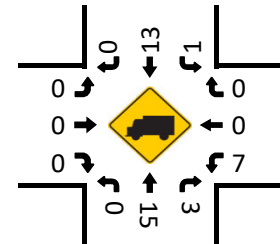
Day: Tuesday
Date: 08/27/2019



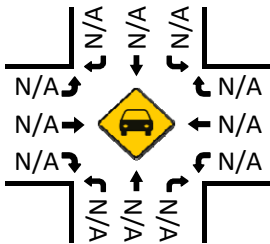
Cars (AM)



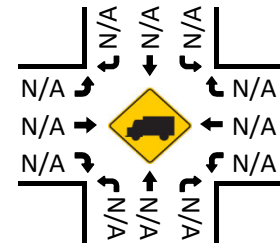
HT (AM)



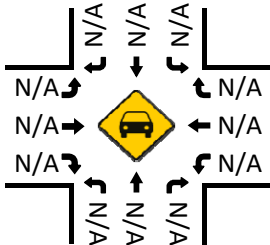
Cars (NOON)



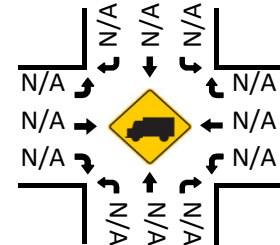
HT (NOON)



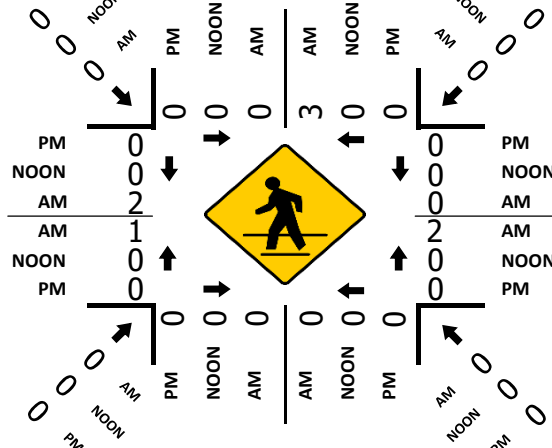
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)

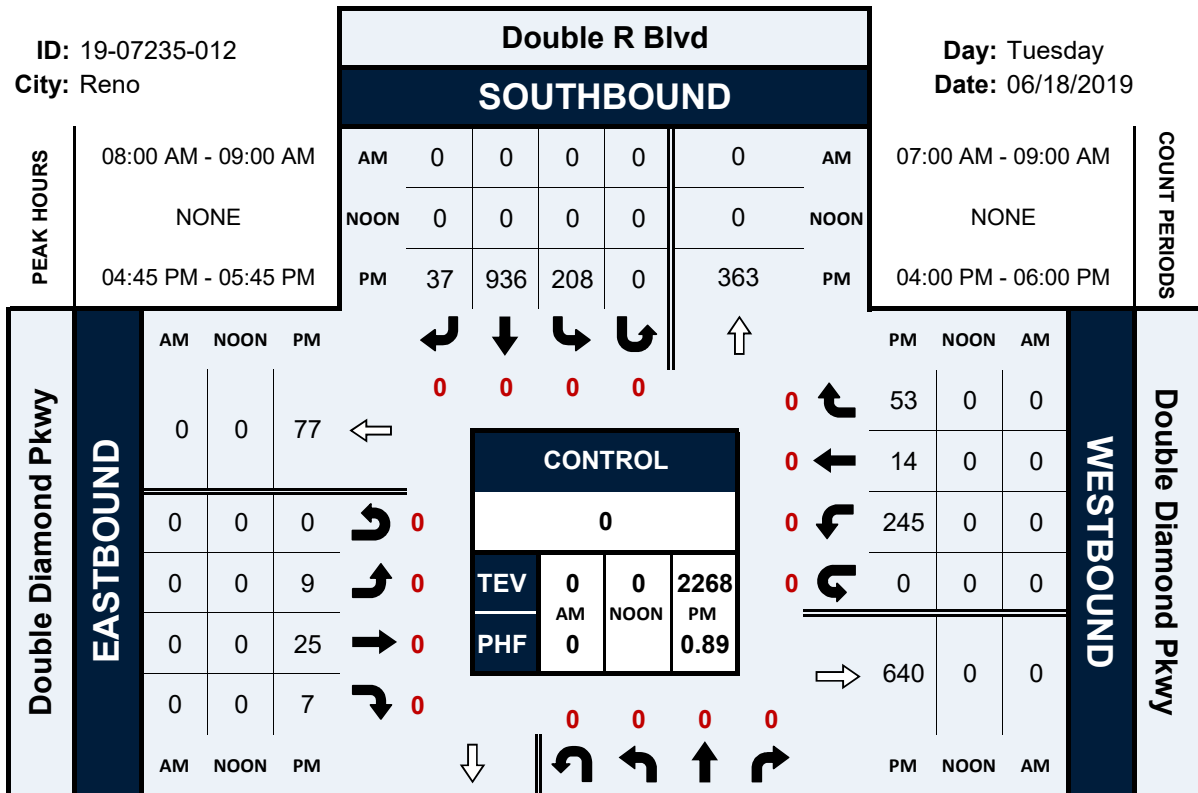


Double R Blvd & Double Diamond Pkwy

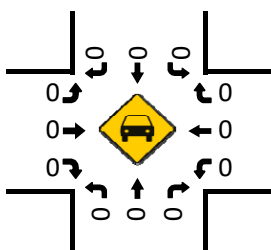
Peak Hour Turning Movement Count

ID: 19-07235-012
City: Reno

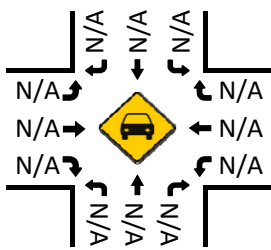
Day: Tuesday
Date: 06/18/2019



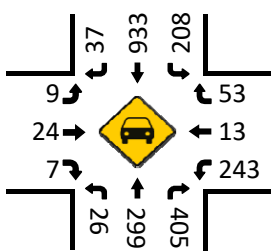
Cars (AM)



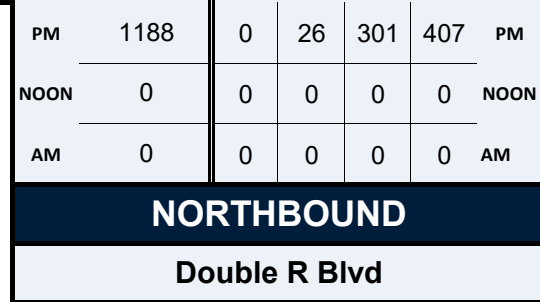
Cars (NOON)



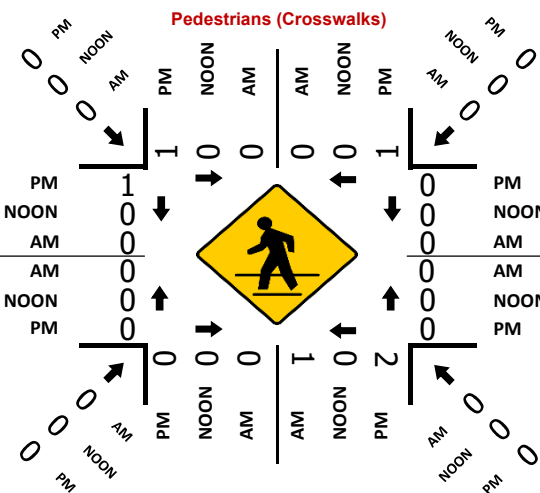
Cars (PM)



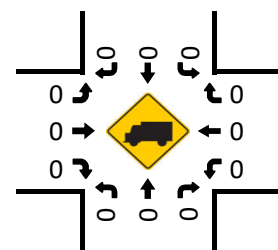
Double R Blvd NORTHBOUND



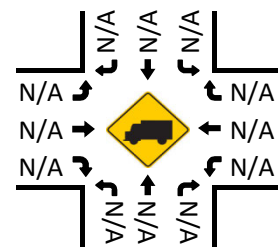
Double R Blvd SOUTHBOUND



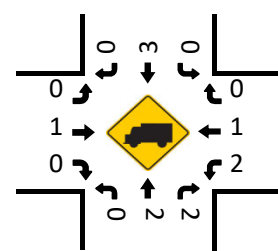
HT (AM)



HT (NOON)

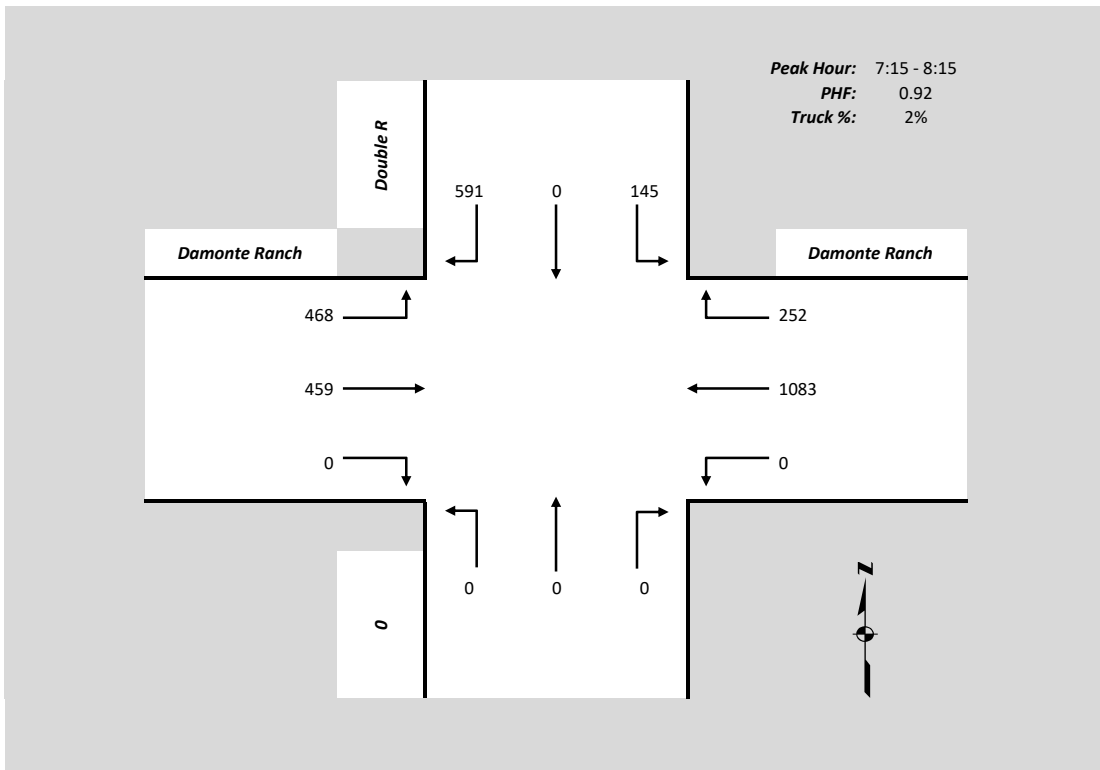


HT (PM)

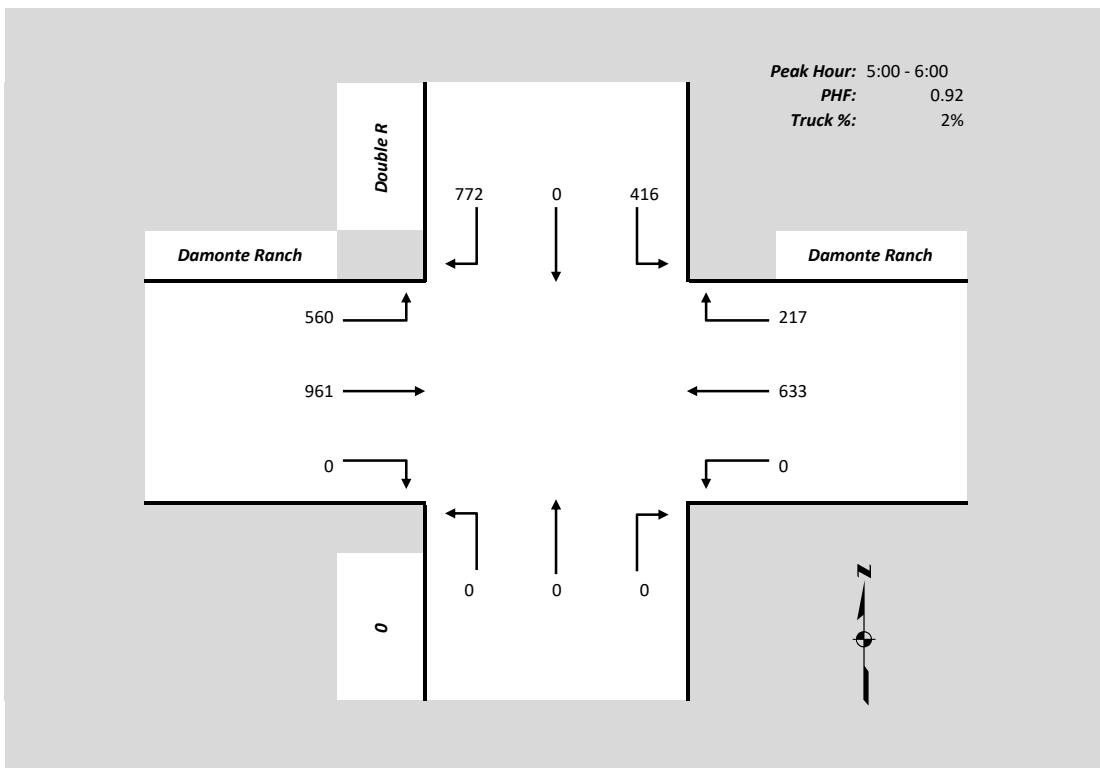


Date Collected: 1/22/2019

AM PEAK HOUR TURNING MOVEMENT VOLUME

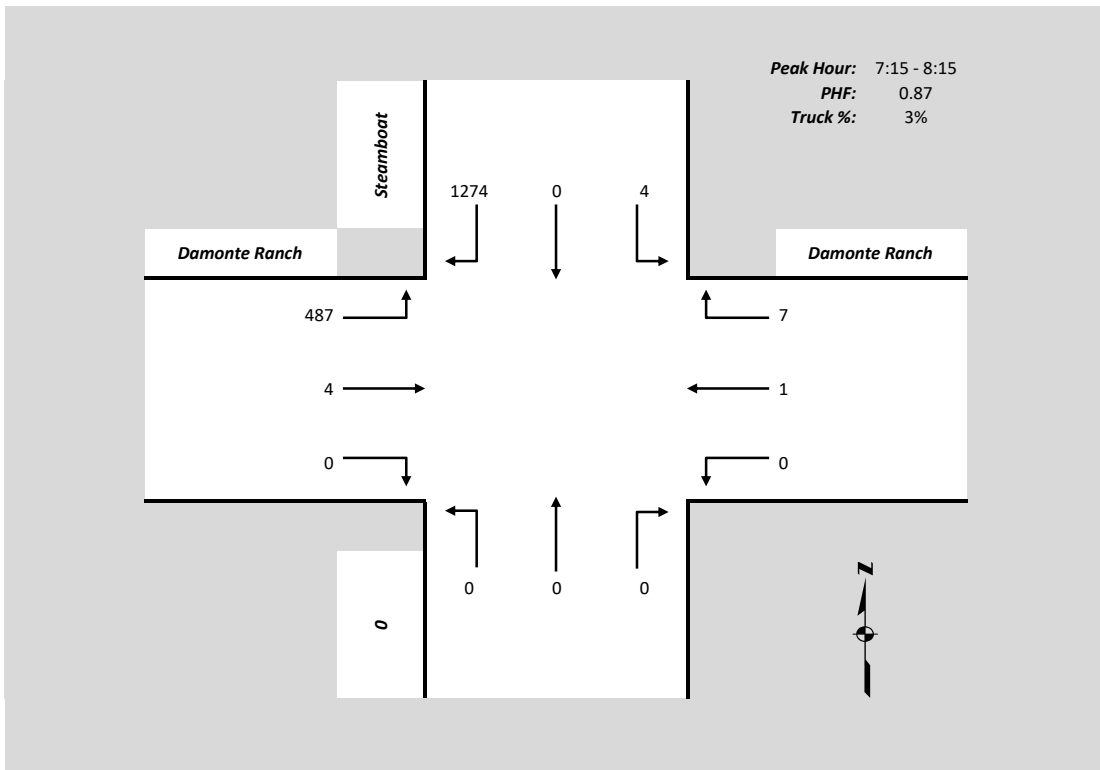


PM PEAK HOUR TURNING MOVEMENT VOLUME

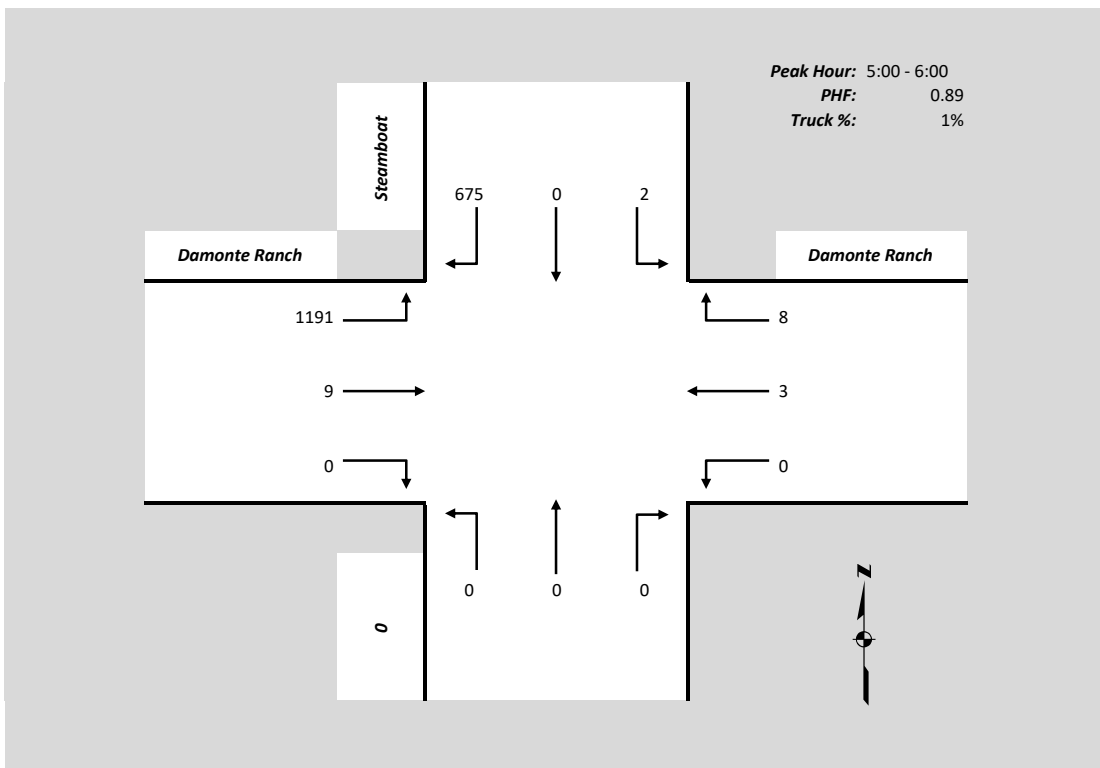


Date Collected: 1/22/2018

AM PEAK HOUR TURNING MOVEMENT VOLUME



PM PEAK HOUR TURNING MOVEMENT VOLUME

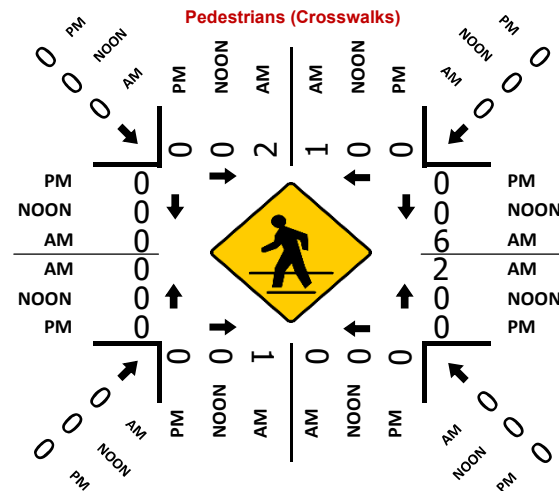
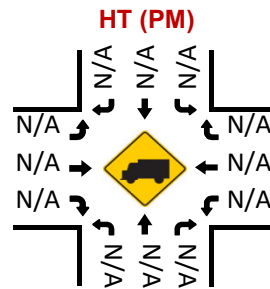
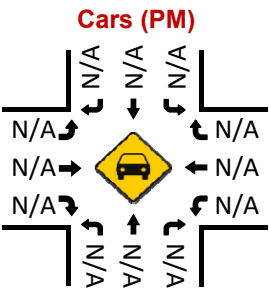
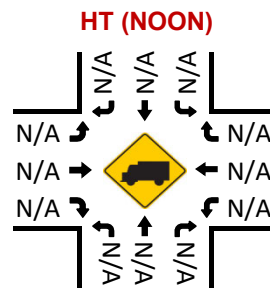
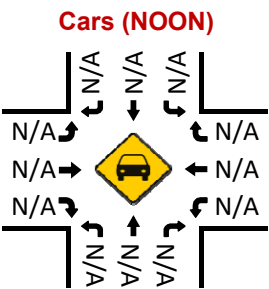
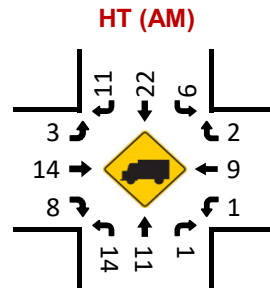
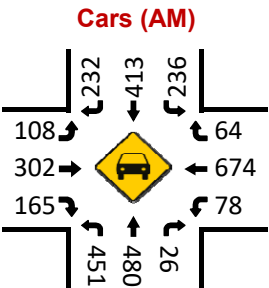
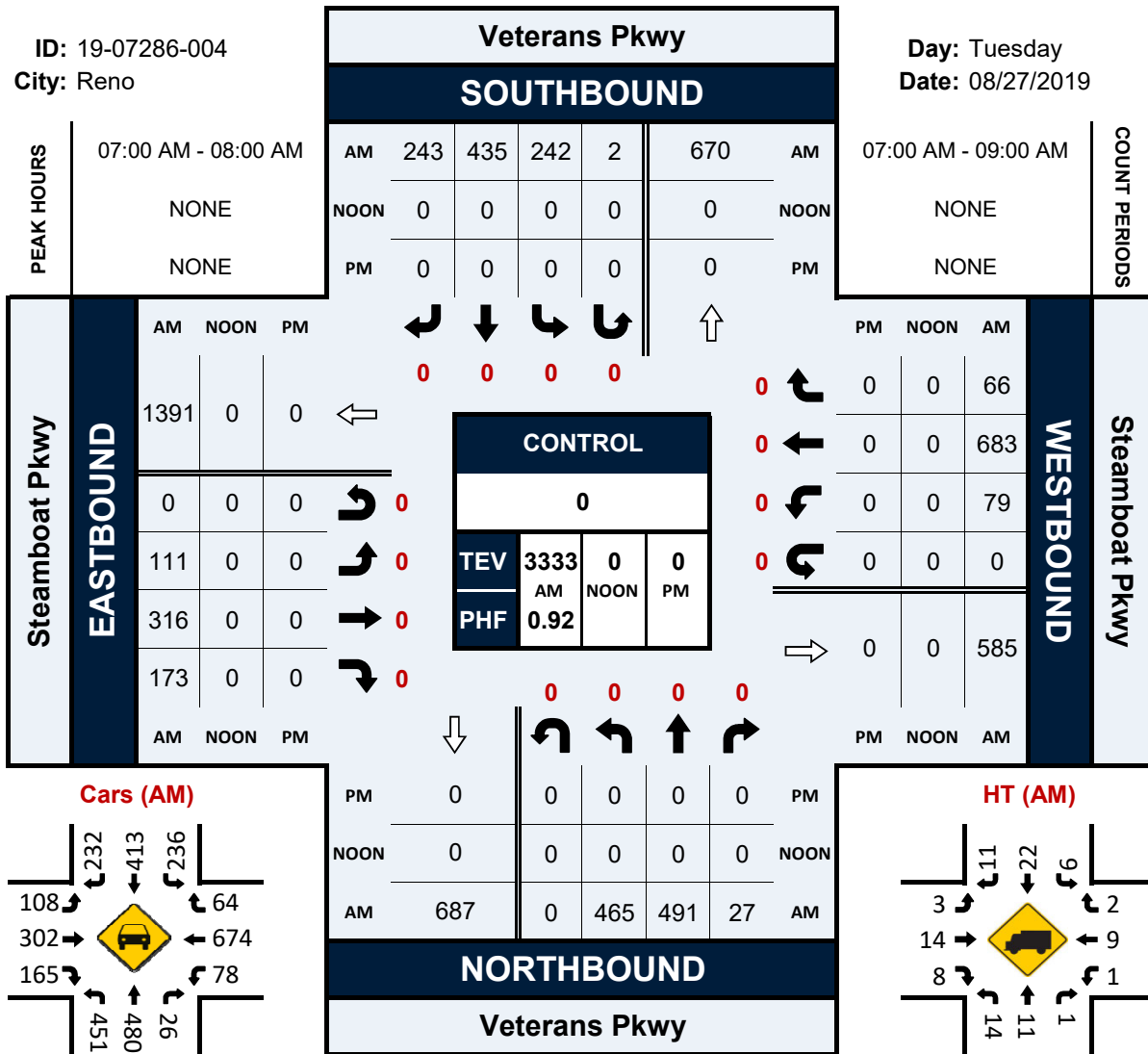


Veterans Pkwy & Steamboat Pkwy

Peak Hour Turning Movement Count

ID: 19-07286-004
City: Reno

Day: Tuesday
Date: 08/27/2019

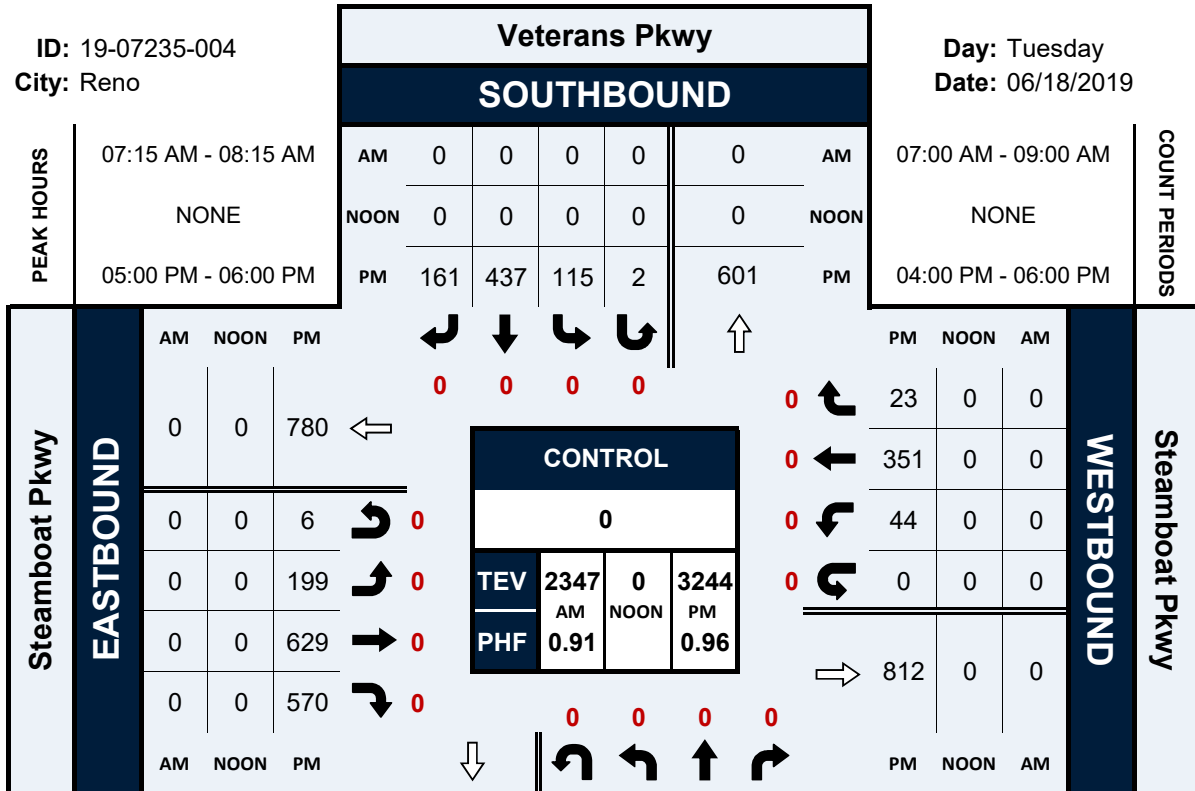


Veterans Pkwy & Steamboat Pkwy

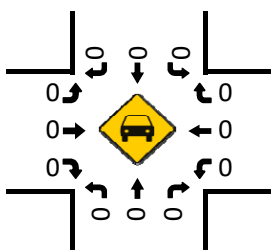
Peak Hour Turning Movement Count

ID: 19-07235-004
City: Reno

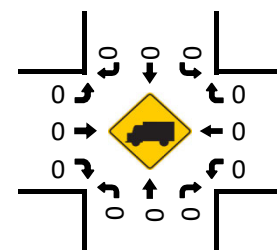
Day: Tuesday
Date: 06/18/2019



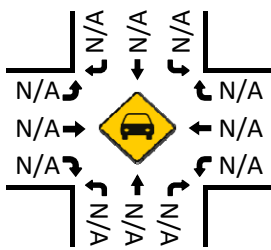
Cars (AM)



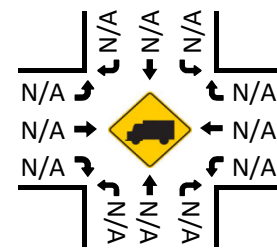
HT (AM)



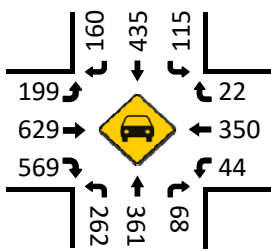
Cars (NOON)



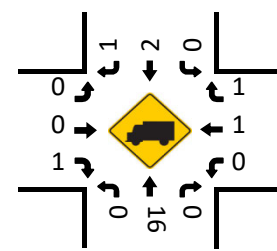
HT (NOON)



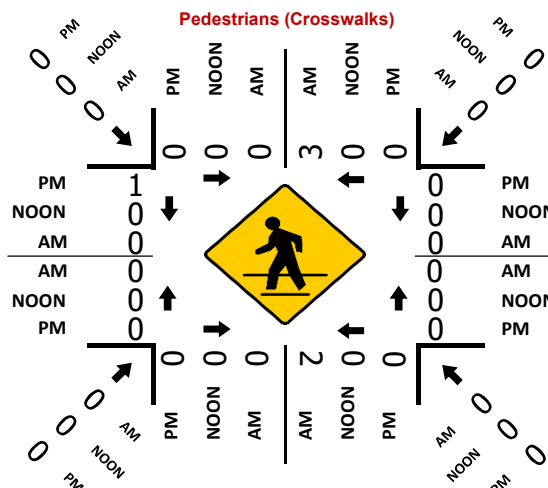
Cars (PM)



HT (PM)



Veterans Pkwy NORTHBOUND

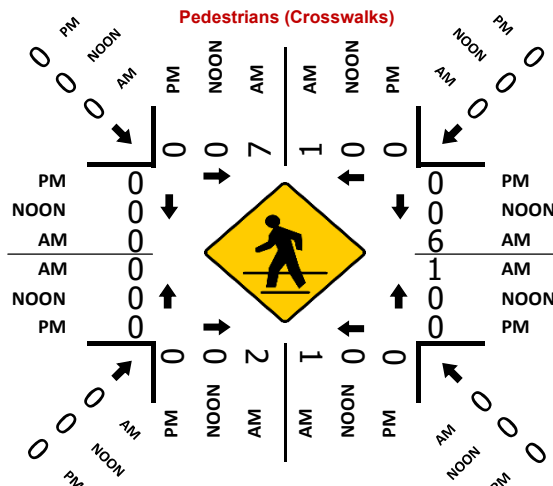
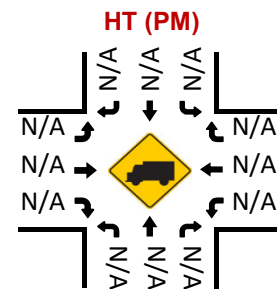
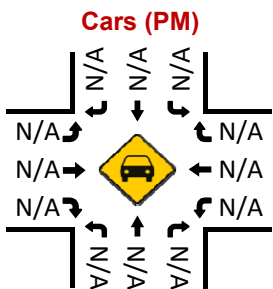
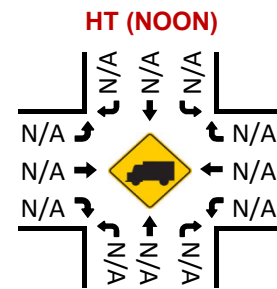
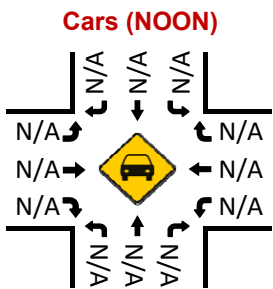
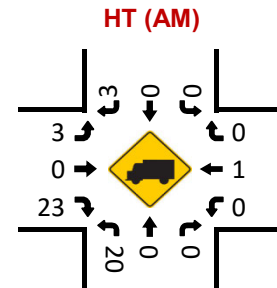
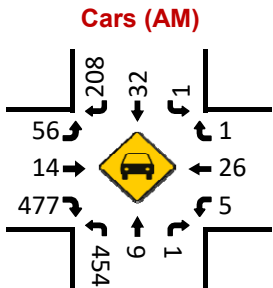
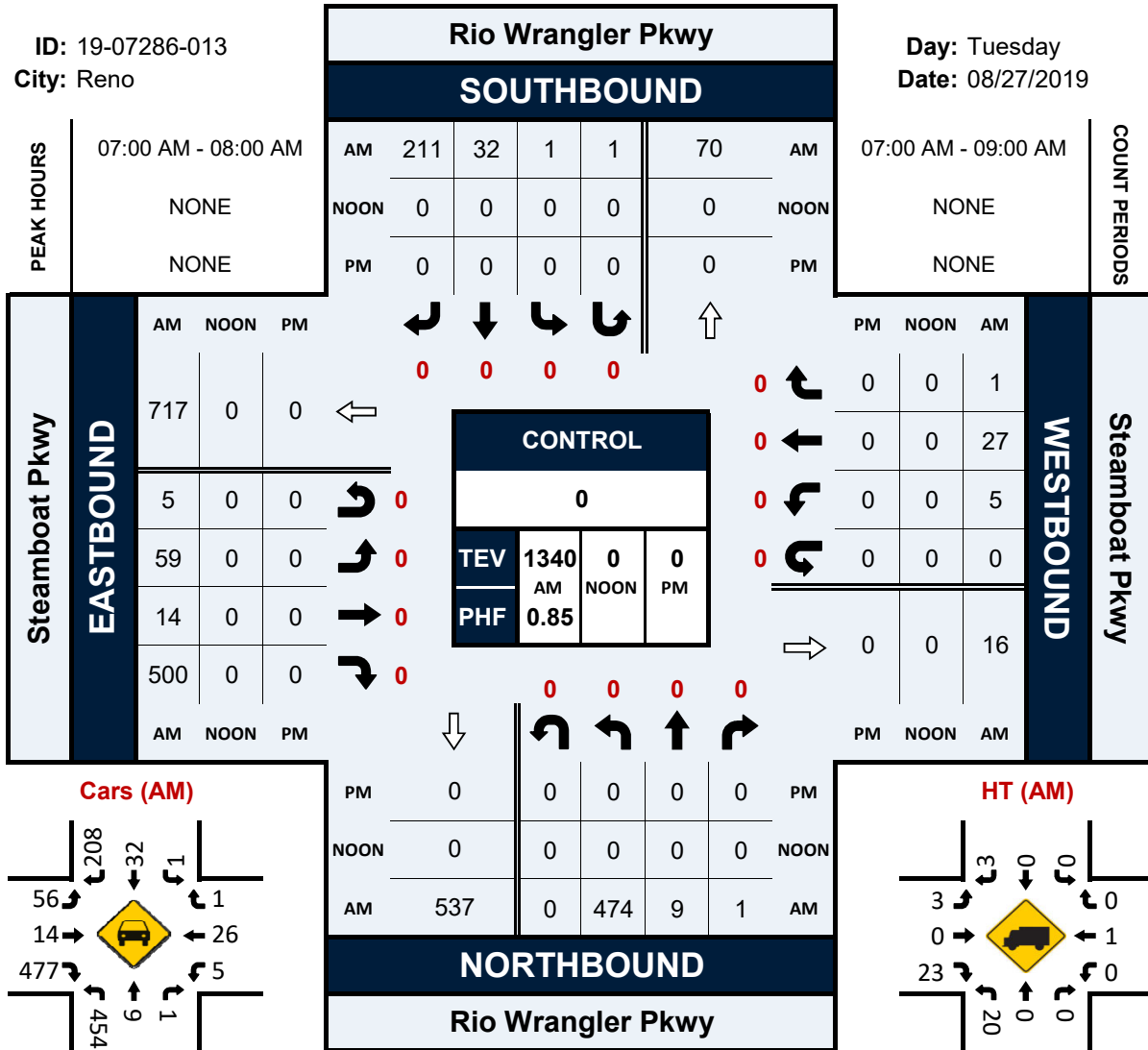


Rio Wrangler Pkwy & Steamboat Pkwy

Peak Hour Turning Movement Count

ID: 19-07286-013
City: Reno

Day: Tuesday
Date: 08/27/2019

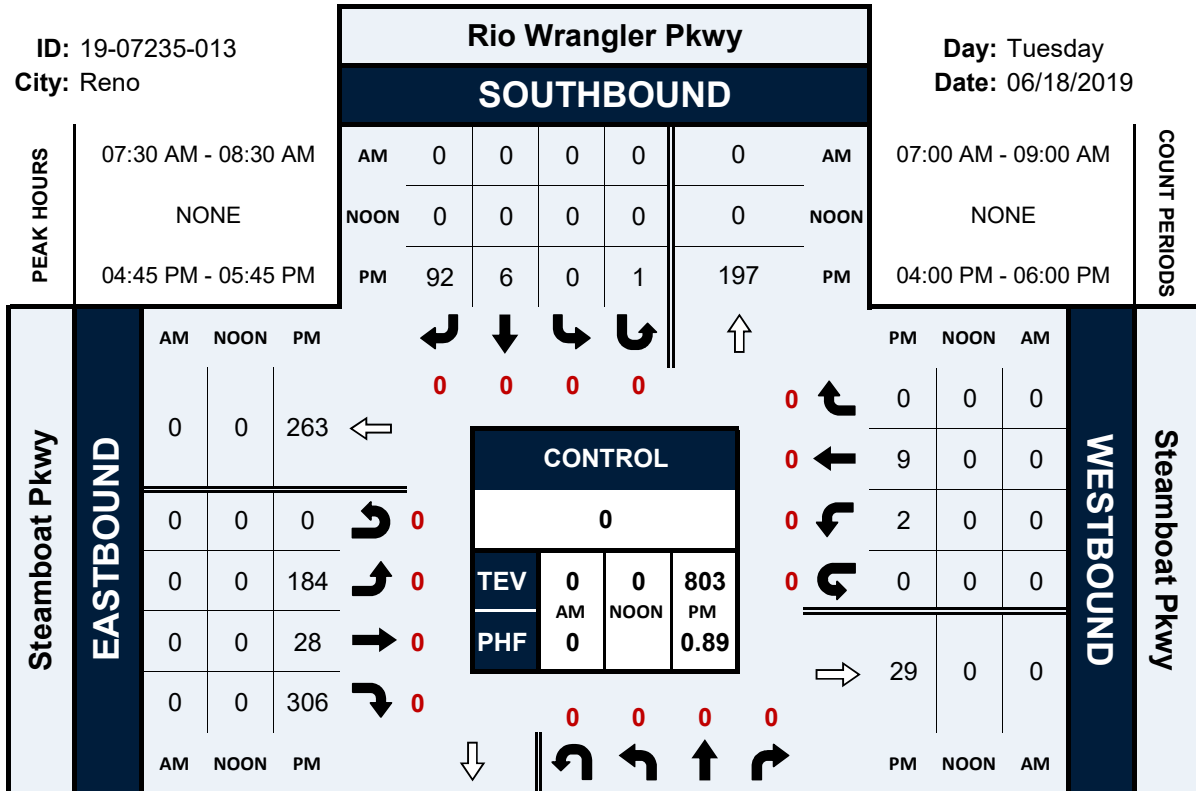


Rio Wrangler Pkwy & Steamboat Pkwy

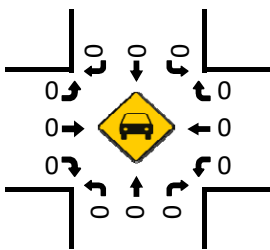
Peak Hour Turning Movement Count

ID: 19-07235-013
City: Reno

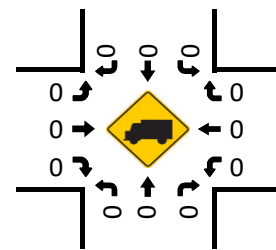
Day: Tuesday
Date: 06/18/2019



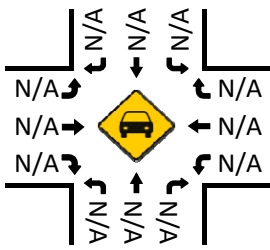
Cars (AM)



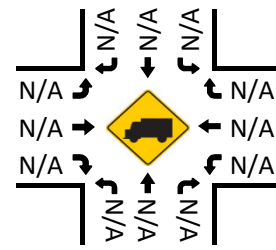
HT (AM)



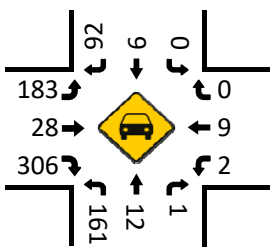
Cars (NOON)



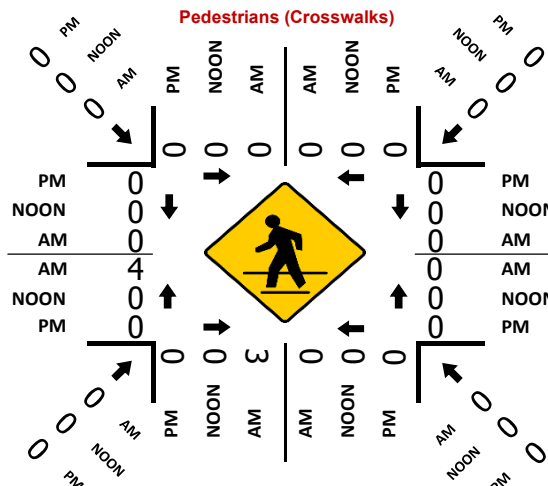
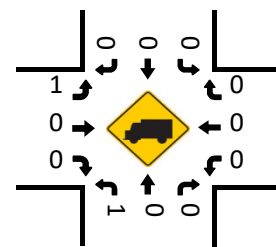
HT (NOON)



Cars (PM)



HT (PM)

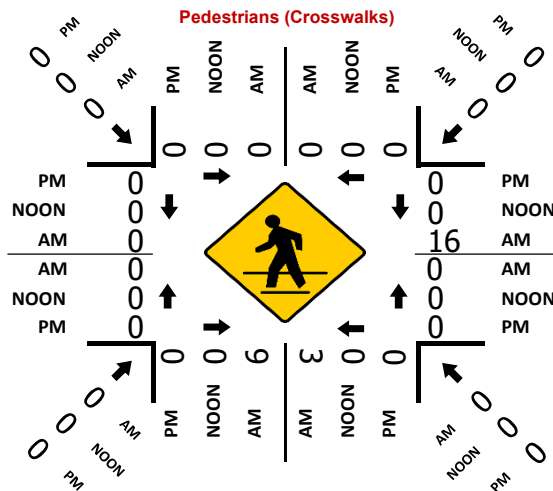
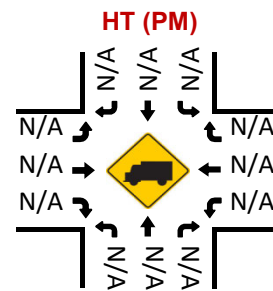
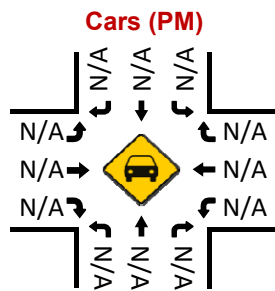
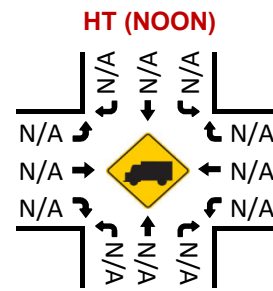
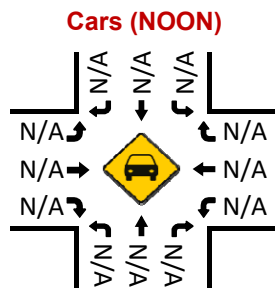
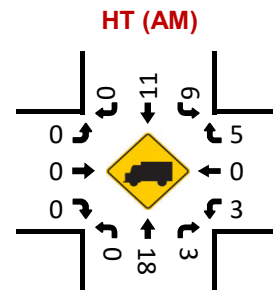
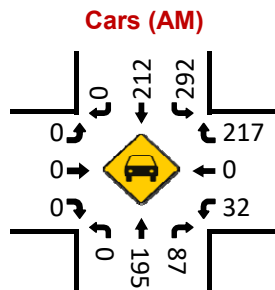
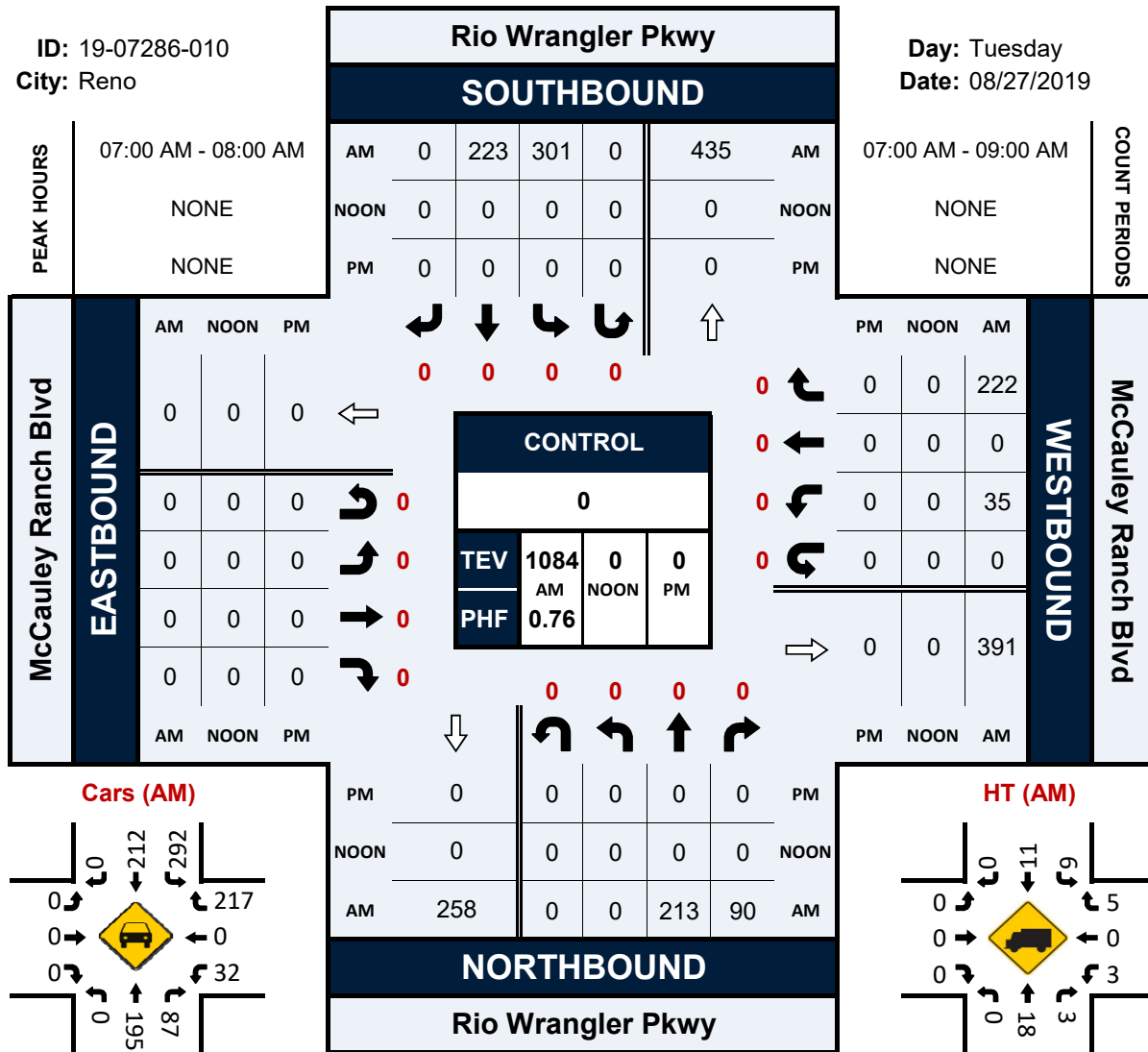


Rio Wrangler Pkwy & McCauley Ranch Blvd

Peak Hour Turning Movement Count

ID: 19-07286-010
City: Reno

Day: Tuesday
Date: 08/27/2019

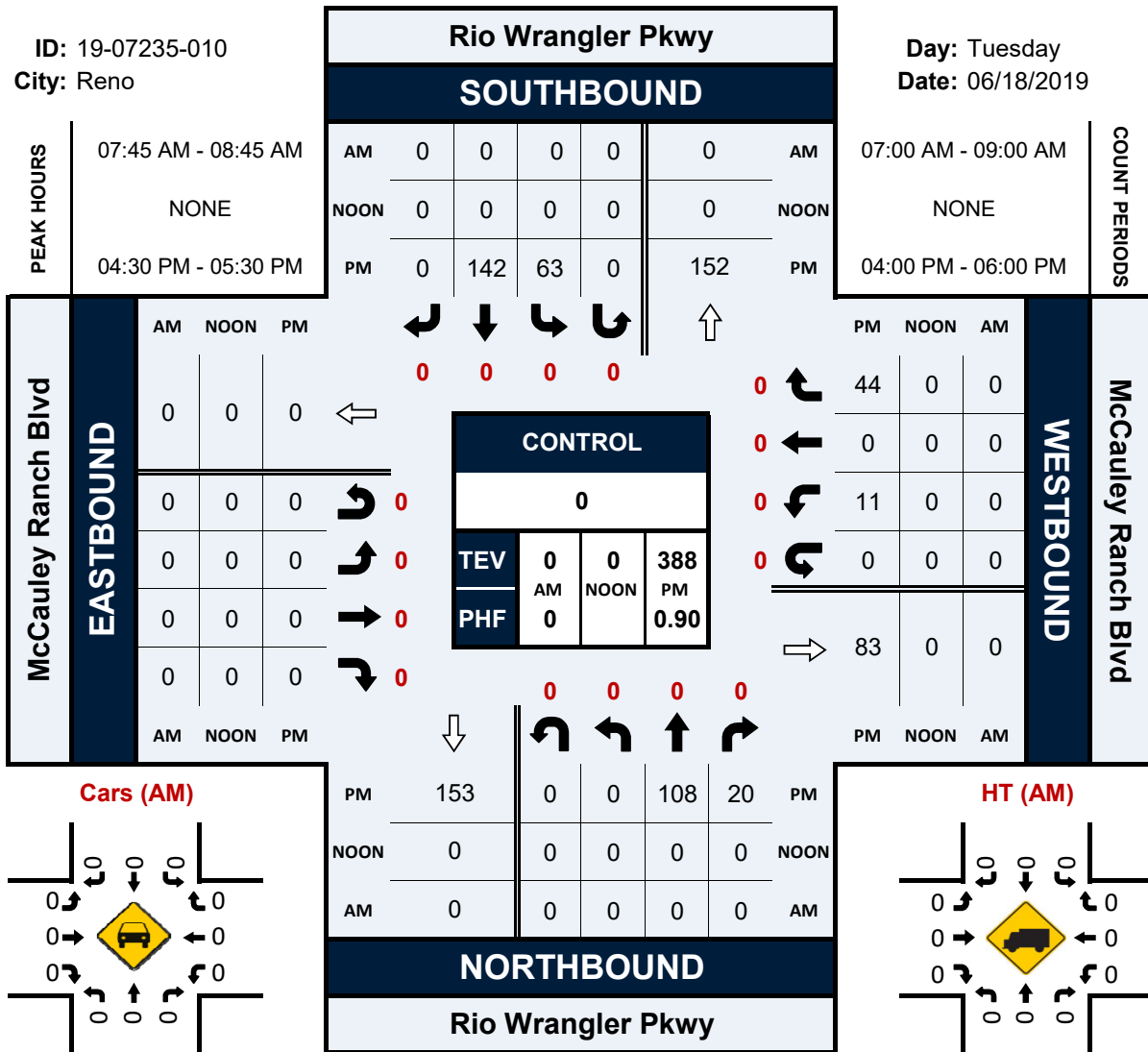


Rio Wrangler Pkwy & McCauley Ranch Blvd

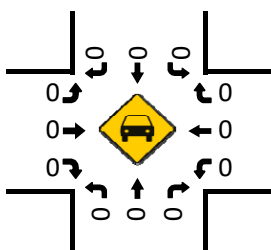
Peak Hour Turning Movement Count

ID: 19-07235-010
City: Reno

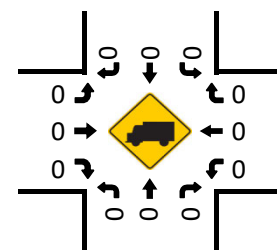
Day: Tuesday
Date: 06/18/2019



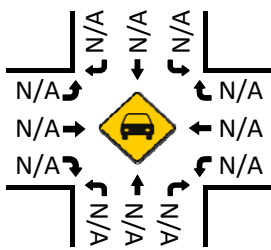
Cars (AM)



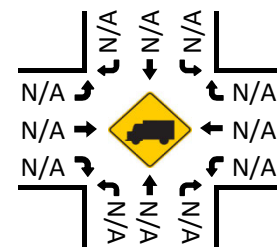
HT (AM)



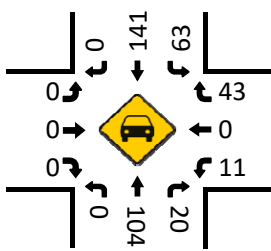
Cars (NOON)



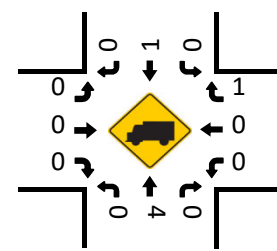
HT (NOON)



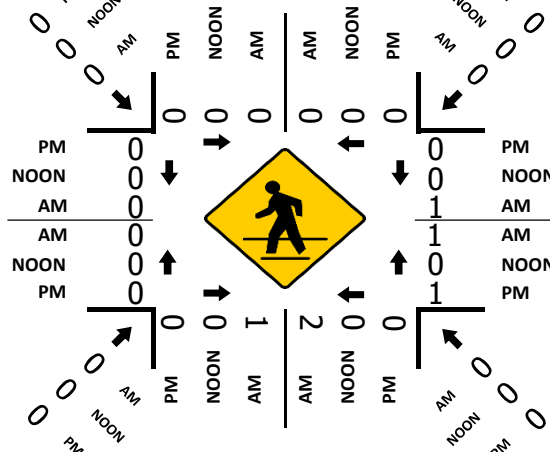
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)

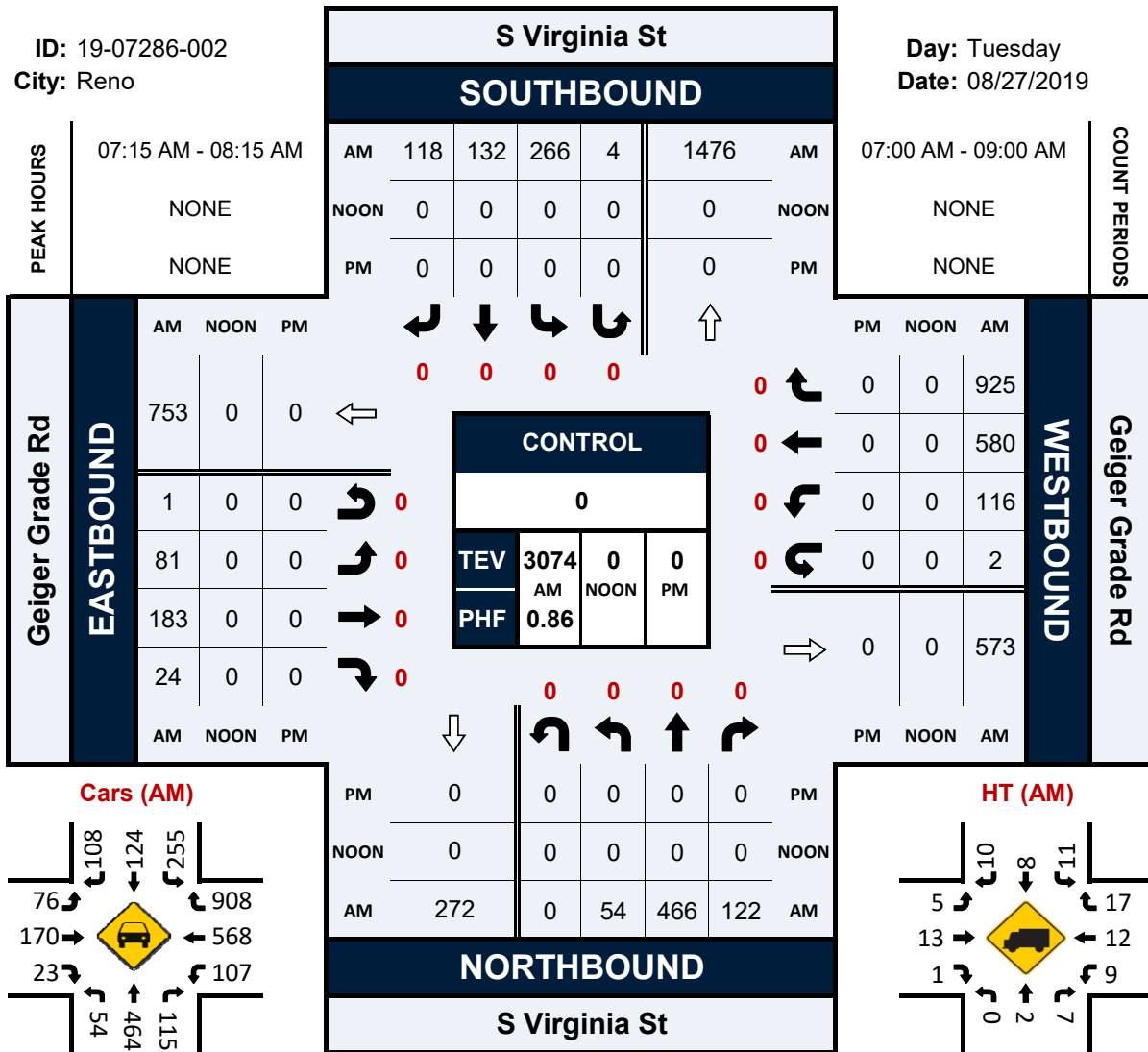


S Virginia St & Geiger Grade Rd

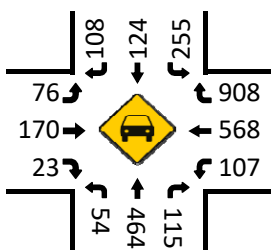
Peak Hour Turning Movement Count

ID: 19-07286-002
City: Reno

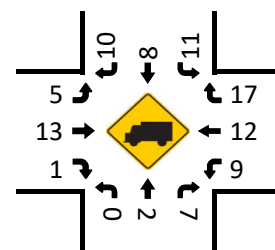
Day: Tuesday
Date: 08/27/2019



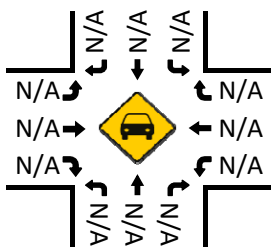
Cars (AM)



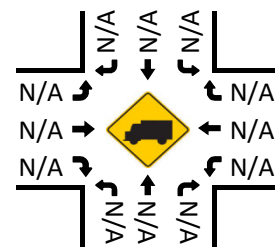
HT (AM)



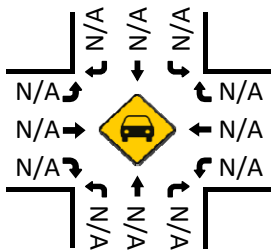
Cars (NOON)



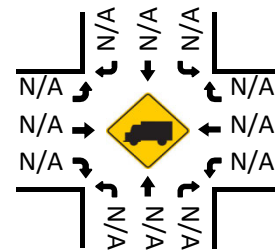
HT (NOON)



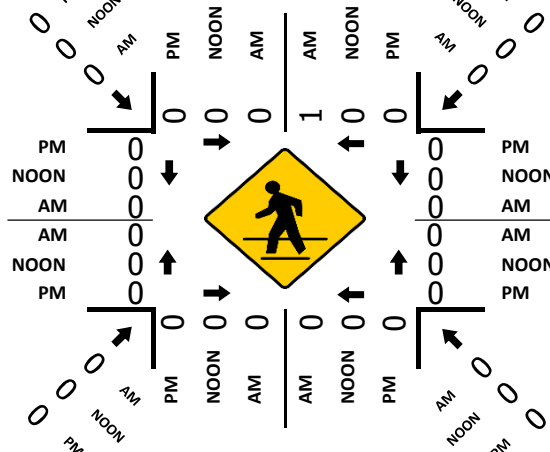
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)

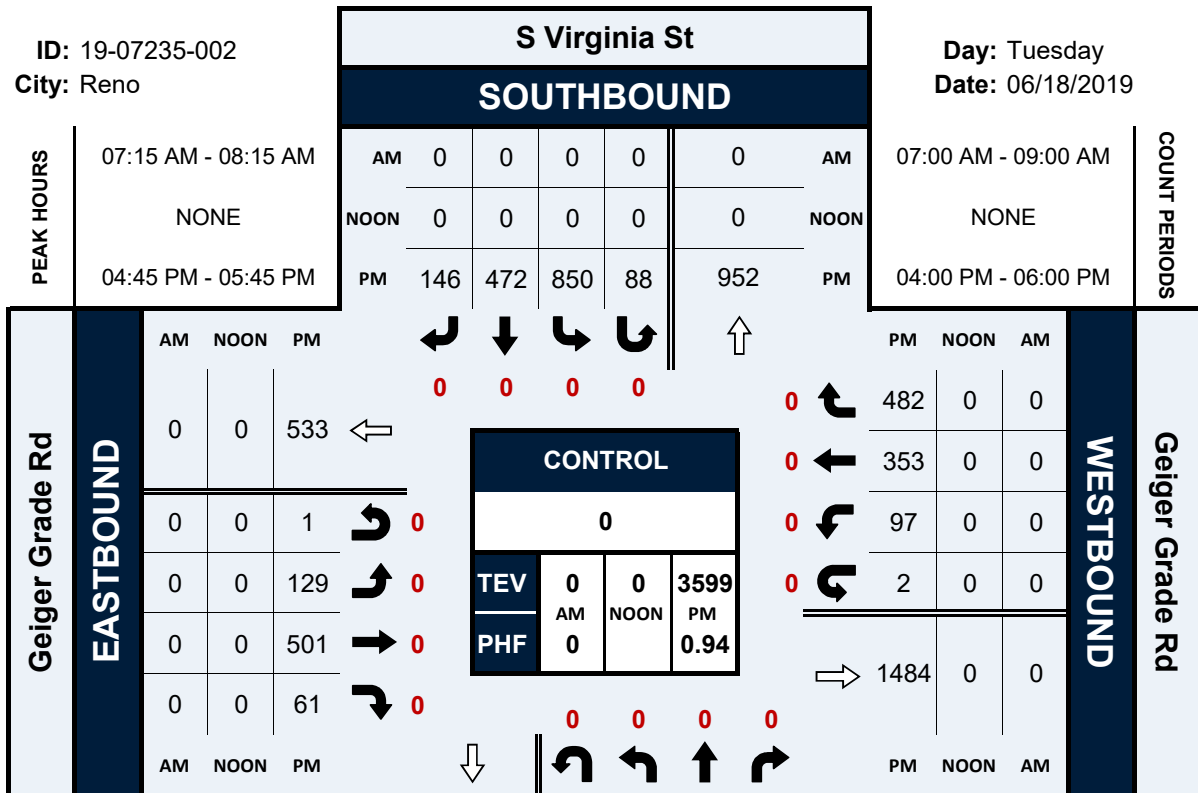


S Virginia St & Geiger Grade Rd

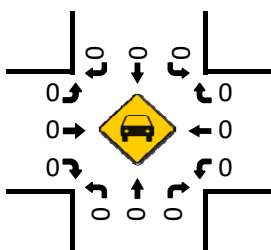
Peak Hour Turning Movement Count

ID: 19-07235-002
City: Reno

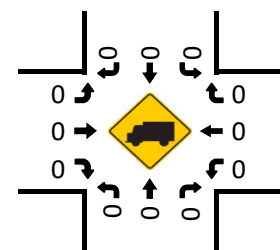
Day: Tuesday
Date: 06/18/2019



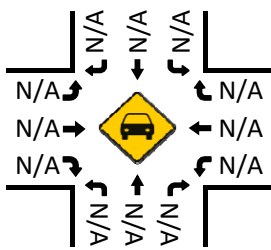
Cars (AM)



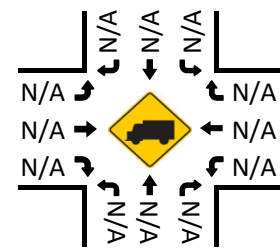
HT (AM)



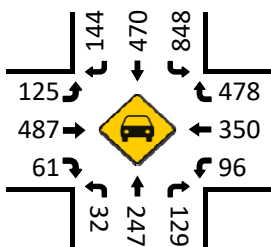
Cars (NOON)



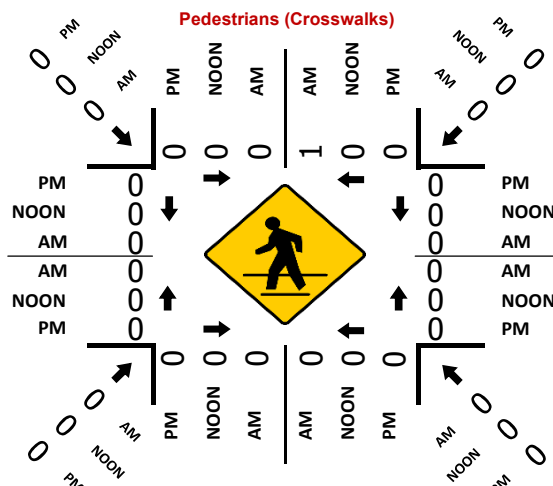
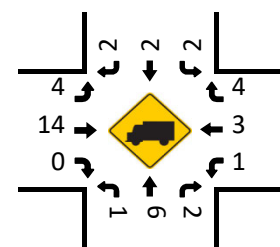
HT (NOON)



Cars (PM)

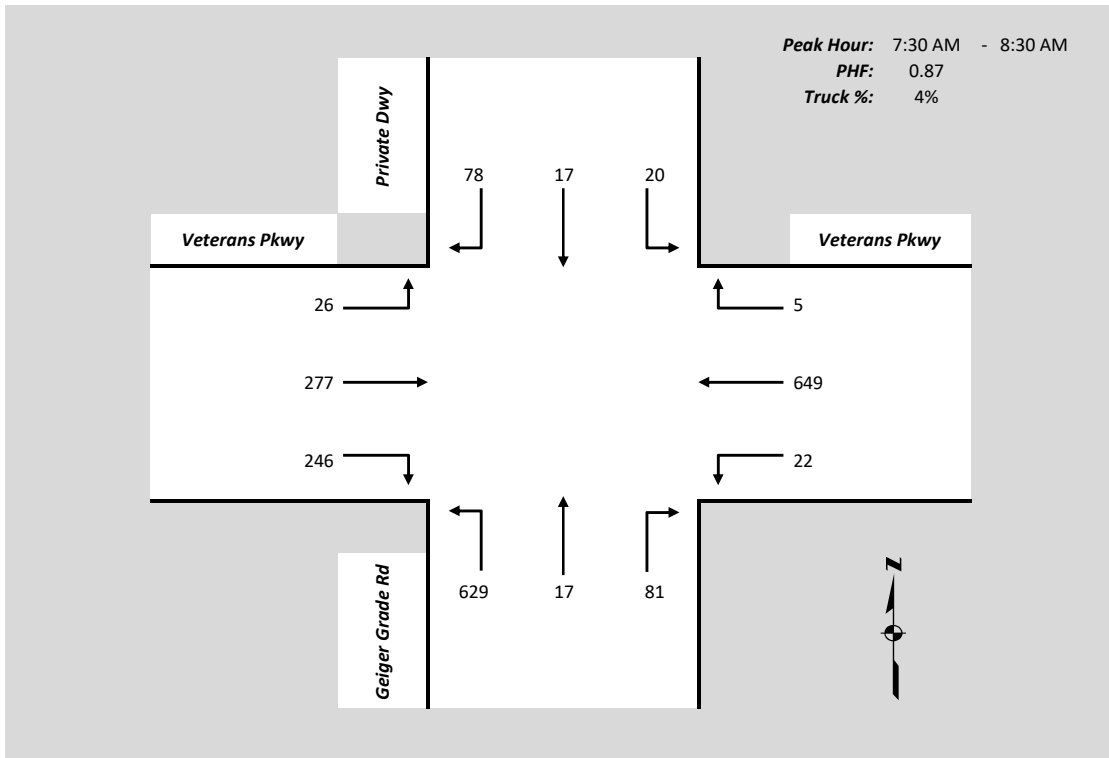


HT (PM)

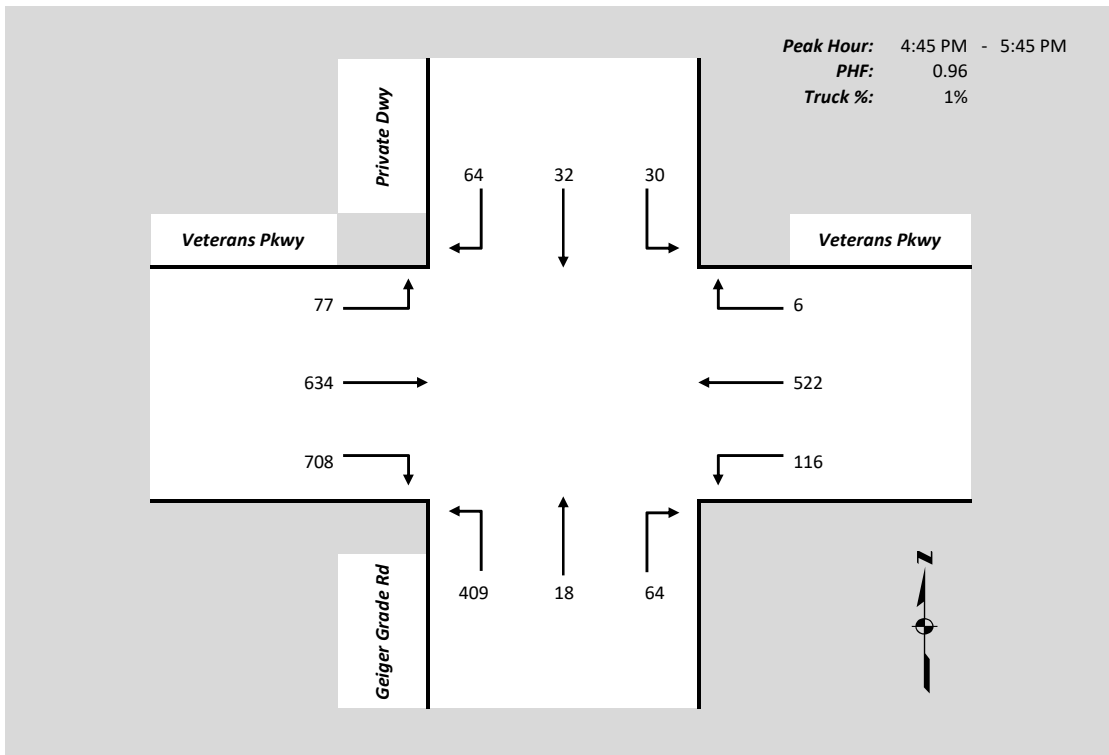


Date Collected: 9/27/2018

AM PEAK HOUR TURNING MOVEMENT VOLUME



PM PEAK HOUR TURNING MOVEMENT VOLUME



Appendix C

Level of Service Calculations

Intersection Level Of Service Report
Intersection 1: S. Virginia St / I-580 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	30.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.778

Intersection Setup

Name	S. Virginia St			S. Virginia St			North On-Ramp			North Off-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				r						r		
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	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	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]	45.00			45.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	S. Virginia St			S. Virginia St			North On-Ramp			North Off-Ramp		
Base Volume Input [veh/h]	0	786	0	0	863	330	0	0	0	0	0	389
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	2.70	2.00	2.00	2.70	2.70	2.00	2.00	2.00	2.00	2.00	2.70
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	786	0	0	863	330	0	0	0	0	0	389
Peak Hour Factor	1.0000	0.8900	1.0000	1.0000	0.8900	0.8900	1.0000	1.0000	1.0000	1.0000	1.0000	0.8900
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	221	0	0	242	93	0	0	0	0	0	109
Total Analysis Volume [veh/h]	0	883	0	0	970	371	0	0	0	0	0	437
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	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	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.78
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.31
Movement LOS		A			A	A						D
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.20
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	179.88
d_A, Approach Delay [s/veh]	0.00			0.00			0.00			30.31		
Approach LOS	A			A			A			D		
d_I, Intersection Delay [s/veh]	4.98											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 2: Double R Blvd / Sandhill Rd

Control Type:	Two-way stop	Delay (sec / veh):	110.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.489

Intersection Setup

Name	Double R Blvd			Double R Blvd			Sandhill Rd			Sandhill 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	0	0	0	1	0	0
Entry Pocket Length [ft]	150.00	100.00	100.00	150.00	100.00	100.00	100.00	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]	45.00			45.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Double R Blvd			Double R Blvd			Sandhill Rd			Sandhill Rd		
Base Volume Input [veh/h]	116	549	140	53	400	9	2	19	28	25	35	38
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 [%]	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90
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]	116	549	140	53	400	9	2	19	28	25	35	38
Peak Hour Factor	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
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	163	42	16	119	3	1	6	8	7	10	11
Total Analysis Volume [veh/h]	138	654	167	63	476	11	2	23	33	30	42	45
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.01	0.00	0.08	0.00	0.00	0.03	0.32	0.04	0.49	0.53	0.08
d_M, Delay for Movement [s/veh]	8.91	0.00	0.00	9.94	0.00	0.00	79.82	71.32	25.47	110.30	82.78	43.63
Movement LOS	A	A	A	A	A	A	F	F	D	F	F	E
95th-Percentile Queue Length [veh/ln]	0.45	0.00	0.00	0.26	0.00	0.00	1.73	1.73	1.73	1.92	3.18	3.18
95th-Percentile Queue Length [ft/ln]	11.19	0.00	0.00	6.46	0.00	0.00	43.20	43.20	43.20	48.11	79.44	79.44
d_A, Approach Delay [s/veh]	1.28			1.14			45.53			74.78		
Approach LOS	A			A			E			F		
d_I, Intersection Delay [s/veh]	7.87											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: S. Meadows Pkwy / Gateway Dr

Control Type:	Signalized	Delay (sec / veh):	30.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.577

Intersection Setup

Name	Gateway Dr			Gateway Dr			S. Meadows Pkwy			S. Meadows Pkwy		
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	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	40.00	100.00	100.00	100.00	100.00	100.00	200.00	100.00	100.00	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]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Gateway Dr			Gateway Dr			S. Meadows Pkwy			S. Meadows Pkwy		
Base Volume Input [veh/h]	54	38	61	61	22	163	533	1251	26	56	921	60
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 [%]	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
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	32	0	0	85	0	0	14	0	0	31
Total Hourly Volume [veh/h]	54	38	29	61	22	78	533	1251	12	56	921	29
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
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]	15	10	8	17	6	21	146	344	3	15	253	8
Total Analysis Volume [veh/h]	59	42	32	67	24	86	586	1375	13	62	1012	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	135
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	4	0	0	5	0	6	8	0	5	5	0
Maximum Green [s]	0	20	0	0	30	0	35	35	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.9	4.8	0.0	3.0	3.0	0.0
All red [s]	0.0	1.5	0.0	0.0	1.0	0.0	1.5	1.5	0.0	1.0	1.0	0.0
Split [s]	0	45	0	0	45	0	45	65	0	25	45	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	8	0	0	5	0	0	7	0	0	5	0
Pedestrian Clearance [s]	0	29	0	0	10	0	0	14	0	0	10	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.5	0.0	0.0	2.0	0.0	3.4	4.3	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	Yes		No	Yes	
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

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	135	135	135	135	135	135	135	135	135	135
L, Total Lost Time per Cycle [s]	4.50	4.50	4.00	4.00	5.40	6.30	6.30	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	0.00	2.00	3.40	4.30	4.30	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	20	20	47	94	94	6	54	54
g / C, Green / Cycle	0.15	0.15	0.15	0.15	0.35	0.70	0.70	0.05	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.04	0.04	0.09	0.05	0.33	0.26	0.26	0.03	0.19	0.19
s, saturation flow rate [veh/h]	1386	1736	1021	1588	1780	3558	1860	1780	3558	1839
c, Capacity [veh/h]	79	256	128	240	616	2483	1298	80	1436	742
d1, Uniform Delay [s]	66.96	51.27	57.31	51.45	43.01	8.28	8.28	63.77	29.77	29.78
k, delay calibration	0.11	0.11	0.14	0.11	0.26	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	13.18	0.62	8.73	0.90	16.87	0.42	0.80	14.40	1.15	2.21
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
Rp, platoon ratio	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

Lane Group Results

X, volume / capacity	0.75	0.29	0.71	0.36	0.95	0.37	0.37	0.77	0.48	0.48
d, Delay for Lane Group [s/veh]	80.14	51.89	66.05	52.35	59.88	8.69	9.08	78.17	30.92	31.99
Lane Group LOS	F	D	E	D	E	A	A	E	C	C
Critical Lane Group	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.34	2.31	3.11	2.71	21.59	5.19	5.56	2.42	8.45	8.97
50th-Percentile Queue Length [ft/ln]	58.60	57.72	77.65	67.80	539.74	129.67	139.11	60.54	211.21	224.13
95th-Percentile Queue Length [veh/ln]	4.22	4.16	5.59	4.88	29.21	8.92	9.43	4.36	13.22	13.88
95th-Percentile Queue Length [ft/ln]	105.48	103.90	139.77	122.04	730.25	223.05	235.83	108.97	330.38	346.90

Movement, Approach, & Intersection Results

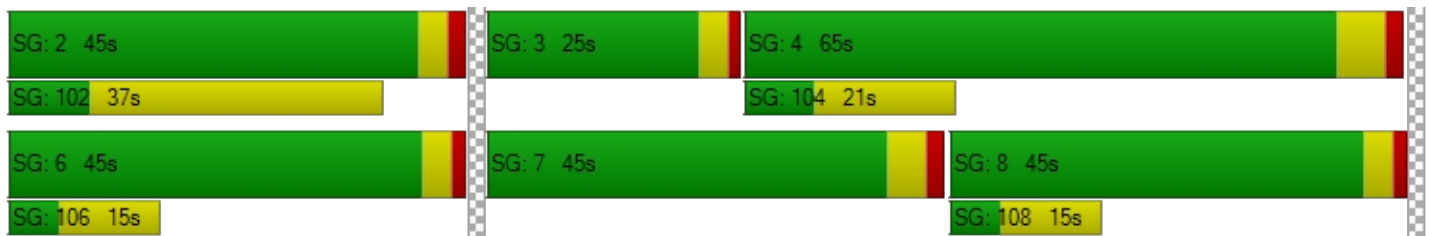
d_M, Delay for Movement [s/veh]	80.14	51.89	51.89	66.05	66.05	52.35	59.88	8.82	9.08	78.17	31.26	31.99
Movement LOS	F	D	D	E	E	D	E	A	A	E	C	C
d_A, Approach Delay [s/veh]	64.42			59.39			23.98			33.92		
Approach LOS	E			E			C			C		
d_I, Intersection Delay [s/veh]	30.66											
Intersection LOS	C											
Intersection V/C	0.577											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	9.0	9.0	12.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	56.95	58.80	58.80	56.03
I_p,int, Pedestrian LOS Score for Intersection	2.080	2.340	3.243	3.213
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	607	870	607
d_b, Bicycle Delay [s]	33.08	32.73	21.56	32.73
I_b,int, Bicycle LOS Score for Intersection	1.832	1.992	2.653	2.185
Bicycle LOS	A	A	B	B

Sequence

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



Intersection Level Of Service Report

Intersection 4: S. Meadows Pkwy / Double R Blvd

Control Type:	Signalized	Delay (sec / veh):	39.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.473

Intersection Setup

Name	Double R Blvd			Double R Blvd			S. Meadows Pkwy			S. Meadows Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
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	2	0	1	2	0	1	2	0	0	2	0	0
Entry Pocket Length [ft]	250.00	100.00	275.00	225.00	100.00	450.00	315.00	100.00	100.00	225.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
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	49.21
Speed [mph]	35.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Double R Blvd			Double R Blvd			S. Meadows Pkwy			S. Meadows Pkwy		
Base Volume Input [veh/h]	173	317	37	76	227	154	545	373	419	128	637	104
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 [%]	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70
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	19	0	0	80	0	0	123	0	0	54
Total Hourly Volume [veh/h]	173	317	18	76	227	74	545	373	419	128	637	104
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
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]	49	90	5	22	64	21	155	106	119	36	181	30
Total Analysis Volume [veh/h]	197	360	20	86	258	84	619	424	476	145	724	118
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	135
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	5.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	6	0	4	6	0	6	10	0	6	10	0
Maximum Green [s]	25	30	0	25	30	0	35	35	0	16	35	0
Amber [s]	3.9	4.8	0.0	3.9	4.8	0.0	3.2	4.1	0.0	3.2	4.1	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	23	41	0	25	43	0	34	44	0	25	35	0
Vehicle Extension [s]	2.5	2.5	0.0	2.5	2.5	0.0	2.5	3.0	0.0	2.0	3.0	0.0
Walk [s]	0	8	0	0	8	0	0	7	0	0	9	0
Pedestrian Clearance [s]	0	25	0	0	25	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.4	4.3	0.0	3.4	4.3	0.0	2.7	3.6	0.0	2.7	3.6	0.0
Minimum Recall	No	No		No	No		Yes	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
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	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	135	135	135	135	135	135	135	135	135	135	135	135
L, Total Lost Time per Cycle [s]	5.40	6.30	6.30	5.40	6.30	6.30	4.70	5.60	5.60	4.70	5.60	5.60
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	0.00
l2, Clearance Lost Time [s]	3.40	4.30	4.30	3.40	4.30	4.30	2.70	3.60	3.60	2.70	3.60	3.60
g_i, Effective Green Time [s]	10	17	17	5	12	12	27	83	83	8	64	64
g / C, Green / Cycle	0.07	0.12	0.12	0.04	0.09	0.09	0.20	0.62	0.62	0.06	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.06	0.10	0.01	0.03	0.07	0.05	0.18	0.12	0.30	0.04	0.16	0.16
s, saturation flow rate [veh/h]	3439	3540	1581	3439	3540	1581	3439	3540	1581	3439	3540	1730
c, Capacity [veh/h]	252	440	196	135	320	143	690	2182	974	196	1675	818
d1, Uniform Delay [s]	61.52	57.65	52.45	63.92	60.26	59.01	52.63	11.29	14.22	62.67	22.31	22.34
k, delay calibration	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.50	0.50	0.04	0.50	0.50
l, 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
d2, Incremental Delay [s]	3.97	2.86	0.17	3.65	3.61	2.84	3.41	0.20	1.75	2.04	0.55	1.13
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.78	0.82	0.10	0.64	0.81	0.59	0.90	0.19	0.49	0.74	0.34	0.34
d, Delay for Lane Group [s/veh]	65.49	60.51	52.62	67.56	63.88	61.85	56.03	11.48	15.97	64.71	22.86	23.47
Lane Group LOS	E	E	D	E	E	E	E	B	B	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.45	6.13	0.61	1.53	4.51	2.88	10.47	2.77	8.14	2.50	5.71	5.76
50th-Percentile Queue Length [ft/ln]	86.16	153.35	15.29	38.27	112.68	72.11	261.78	69.29	203.56	62.43	142.78	144.01
95th-Percentile Queue Length [veh/ln]	6.20	10.20	1.10	2.76	7.99	5.19	15.78	4.99	12.82	4.49	9.63	9.70
95th-Percentile Queue Length [ft/ln]	155.09	254.90	27.52	68.89	199.73	129.79	394.45	124.73	320.55	112.37	240.76	242.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.49	60.51	52.62	67.56	63.88	61.85	56.03	11.48	15.97	64.71	22.99	23.47
Movement LOS	E	E	D	E	E	E	E	B	B	E	C	C
d_A, Approach Delay [s/veh]	61.94			64.22			31.04			29.18		
Approach LOS	E			E			C			C		
d_I, Intersection Delay [s/veh]	39.64											
Intersection LOS	D											
Intersection V/C	0.473											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	13.0	12.0	12.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	56.95	55.13	56.03	56.03
I_p,int, Pedestrian LOS Score for Intersection	2.941	2.992	3.271	3.108
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	514	544	569	436
d_b, Bicycle Delay [s]	37.26	35.79	34.56	41.30
I_b,int, Bicycle LOS Score for Intersection	2.051	1.979	2.463	2.132
Bicycle LOS	B	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 5: S. Meadows Pkwy / Double Diamond Pkwy

Control Type:	Signalized	Delay (sec / veh):	23.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.516

Intersection Setup

Name	S. Meadows Pkwy			S. Meadows Pkwy			Double Diamond Pkwy			Double Diamond Pkwy		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
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	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	175.00	100.00	175.00	100.00	100.00	100.00	250.00	100.00	100.00	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]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Meadows Pkwy			S. Meadows Pkwy			Double Diamond Pkwy			Double Diamond Pkwy		
Base Volume Input [veh/h]	126	203	68	14	575	509	203	300	35	99	82	42
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 [%]	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40
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	0	0	0	153	0	0	18	0	0	22
Total Hourly Volume [veh/h]	126	203	68	14	575	356	203	300	17	99	82	20
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	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]	33	53	18	4	150	93	53	78	4	26	21	5
Total Analysis Volume [veh/h]	131	211	71	15	599	371	211	313	18	103	85	21
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	4	6	0	4	6	0
Maximum Green [s]	35	35	0	16	35	0	25	30	0	25	30	0
Amber [s]	3.2	4.1	0.0	3.2	4.1	0.0	3.3	4.2	0.0	3.3	4.2	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	2.5	3.0	0.0	2.0	3.0	0.0	2.5	2.5	0.0	2.5	2.5	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	19	0	0	18	0	0	20	0	0	17	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.7	3.6	0.0	2.7	3.6	0.0	2.8	3.7	0.0	2.8	3.7	0.0
Minimum Recall	No	Yes		No	Yes		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	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	61	61	61	61	61	61	61	61	61	61	61
L, Total Lost Time per Cycle [s]	4.70	5.60	4.70	5.60	5.60	4.80	5.70	5.70	4.80	5.70	5.70
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]	2.70	3.60	2.70	3.60	3.60	2.80	3.70	3.70	2.80	3.70	3.70
g_i, Effective Green Time [s]	6	25	1	20	20	9	9	9	5	5	5
g / C, Green / Cycle	0.10	0.41	0.02	0.33	0.33	0.15	0.15	0.15	0.08	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.07	0.06	0.01	0.28	0.28	0.12	0.09	0.09	0.06	0.05	0.01
s, saturation flow rate [veh/h]	1775	3549	1775	1864	1628	1775	1864	1829	1775	1864	1584
c, Capacity [veh/h]	172	1444	40	619	541	265	288	283	136	153	130
d1, Uniform Delay [s]	26.96	11.45	29.53	18.91	18.91	25.17	24.03	24.04	27.73	27.03	26.15
k, delay calibration	0.08	0.11	0.04	0.11	0.11	0.08	0.08	0.08	0.08	0.08	0.08
l, 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]	5.10	0.05	2.21	3.07	3.50	4.11	1.36	1.40	6.33	2.32	0.43
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	0.76	0.15	0.38	0.84	0.84	0.80	0.58	0.58	0.76	0.56	0.16
d, Delay for Lane Group [s/veh]	32.06	11.50	31.74	21.98	22.41	29.28	25.39	25.44	34.06	29.36	26.57
Lane Group LOS	C	B	C	C	C	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.97	0.79	0.23	6.43	5.68	3.02	2.17	2.14	1.61	1.21	0.28
50th-Percentile Queue Length [ft/ln]	49.31	19.76	5.71	160.69	141.97	75.42	54.18	53.44	40.32	30.23	7.02
95th-Percentile Queue Length [veh/ln]	3.55	1.42	0.41	10.59	9.59	5.43	3.90	3.85	2.90	2.18	0.51
95th-Percentile Queue Length [ft/ln]	88.76	35.57	10.27	264.64	239.68	135.76	97.53	96.19	72.58	54.42	12.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.06	11.50	0.00	31.74	22.04	22.41	29.28	25.41	25.44	34.06	29.36	26.57
Movement LOS	C	B		C	C	C	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	19.38			22.32			26.92			31.39		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	23.95											
Intersection LOS	C											
Intersection V/C	0.516											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	2.753			2.870			2.358			2.618		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	583			583			500			500		
d_b, Bicycle Delay [s]	30.10			30.10			33.75			33.75		
I_b,int, Bicycle LOS Score for Intersection	1.842			2.498			2.022			1.941		
Bicycle LOS	A			B			B			A		

Sequence

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



Intersection Level Of Service Report
Intersection 6: S. Meadows Pkwy / Wilbur May Pkwy

Control Type:	All-way stop	Delay (sec / veh):	87.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.223

Intersection Setup

Name	Wilbur May Pkwy		S. Meadows Pkwy		S. Meadows Pkwy	
Approach	Northbound		Westbound		Northeastbound	
Lane Configuration	1R		1R1		1R	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0
Entry Pocket Length [ft]	75.00	100.00	125.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Wilbur May Pkwy		S. Meadows Pkwy		S. Meadows Pkwy	
Base Volume Input [veh/h]	277	185	121	797	238	153
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.80	2.80	2.80	2.80	2.80	2.80
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	277	185	121	797	238	153
Peak Hour Factor	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	88	59	38	252	75	48
Total Analysis Volume [veh/h]	351	234	153	1009	301	194
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	360	408	389	505	505	363	384
Degree of Utilization, x	0.98	0.57	0.39	1.22	1.22	0.68	0.64

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	10.93	3.47	1.83	20.65	20.65	4.82	4.33
95th-Percentile Queue Length [ft]	273.18	86.78	45.69	516.31	516.31	120.43	108.23
Approach Delay [s/veh]	53.23		130.07			29.45	
Approach LOS	F		F			D	
Intersection Delay [s/veh]	87.80						
Intersection LOS	F						

Intersection Level Of Service Report
Intersection 7: S. Meadows Pkwy / Echo Valley Pkwy

Control Type:	Two-way stop	Delay (sec / veh):	24.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.764

Intersection Setup

Name	Echo Valley Pkwy		S. Meadows Pkwy		S. Meadows Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	⇐⇐⇐		⇐⇐		⇐⇐	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	275.00	150.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Echo Valley Pkwy		S. Meadows Pkwy		S. Meadows Pkwy	
Base Volume Input [veh/h]	211	84	390	47	8	762
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.80	2.80	2.80	2.80	2.80	2.80
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	84	390	47	8	762
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	23	105	13	2	205
Total Analysis Volume [veh/h]	227	90	419	51	9	819
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.76	0.11	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	24.41	10.11	0.00	0.00	8.21	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.72	0.38	0.00	0.00	0.02	0.00
95th-Percentile Queue Length [ft/ln]	43.12	9.55	0.00	0.00	0.60	0.00
d_A, Approach Delay [s/veh]	20.35		0.00		0.09	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	4.04					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Veterans Pkwy / Long Meadow Dr

Control Type:	Two-way stop	Delay (sec / veh):	143.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.641

Intersection Setup

Name	Veterans Pkwy			Long Meadow Dr			Veterans Pkwy			Long Meadow Dr		
Approach	Southbound			Westbound			Northeastbound			Southeastbound		
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	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	250.00	100.00	250.00	75.00	100.00	100.00	175.00	100.00	100.00	75.00	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]	45.00			25.00			45.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Veterans Pkwy			Long Meadow Dr			Veterans Pkwy			Long Meadow Dr		
Base Volume Input [veh/h]	41	665	13	32	1	44	50	764	39	11	1	101
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 [%]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
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]	41	665	13	32	1	44	50	764	39	11	1	101
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]	12	193	4	9	0	13	15	222	11	3	0	29
Total Analysis Volume [veh/h]	48	773	15	37	1	51	58	888	45	13	1	117
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.01	0.00	0.64	0.02	0.10	0.07	0.01	0.00	0.17	0.02	0.19
d_M, Delay for Movement [s/veh]	10.41	0.00	0.00	143.00	68.08	12.70	9.72	0.00	0.00	63.30	70.89	12.67
Movement LOS	B	A	A	F	F	B	A	A	A	F	F	B
95th-Percentile Queue Length [veh/ln]	0.22	0.00	0.00	2.65	0.38	0.38	0.23	0.00	0.00	0.59	0.79	0.79
95th-Percentile Queue Length [ft/ln]	5.40	0.00	0.00	66.17	9.43	9.43	5.69	0.00	0.00	14.73	19.81	19.81
d_A, Approach Delay [s/veh]	0.60			67.49			0.57			18.14		
Approach LOS	A			F			A			C		
d_I, Intersection Delay [s/veh]	4.61											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 9: Double R Blvd / Double Diamond Pkwy

Control Type:	Signalized	Delay (sec / veh):	29.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.392

Intersection Setup

Name	Double Diamond Pkwy			Double Diamond Pkwy			Double R Blvd			Double R Blvd		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
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	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	200.00	100.00	200.00	275.00	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]	25.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Double Diamond Pkwy			Double Diamond Pkwy			Double R Blvd			Double R Blvd		
Base Volume Input [veh/h]	3	0	4	487	2	152	8	618	151	27	223	2
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 [%]	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
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	2	0	0	79	0	0	79	0	0	1
Total Hourly Volume [veh/h]	3	0	2	487	2	73	8	618	72	27	223	1
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	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]	1	0	1	135	1	20	2	172	20	8	62	0
Total Analysis Volume [veh/h]	3	0	2	541	2	81	9	687	80	30	248	1
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			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]	115.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	7	0	0	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	4	0	0	4	0	6	8	0	4	8	0
Maximum Green [s]	0	15	0	0	30	0	12	35	0	20	35	0
Amber [s]	0.0	3.4	0.0	0.0	4.1	0.0	3.9	4.8	0.0	3.9	4.8	0.0
All red [s]	0.0	1.5	0.0	0.0	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	0	35	0	0	35	0	20	35	0	15	30	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.5	0.0	3.0	3.0	0.0	2.5	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	22	0	0	21	0	0	12	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.9	0.0	0.0	3.6	0.0	3.4	4.3	0.0	3.4	4.3	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	Yes		No	Yes	
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

Lane Group Calculations

Lane Group	C	L	C	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.90	5.60	5.60	5.40	6.30	6.30	5.40	6.30	6.30
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
l2, Clearance Lost Time [s]	2.90	3.60	3.60	3.40	4.30	4.30	3.40	4.30	4.30
g_i, Effective Green Time [s]	1	24	24	2	71	71	3	72	72
g / C, Green / Cycle	0.01	0.20	0.20	0.01	0.59	0.59	0.02	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.00	0.18	0.18	0.01	0.19	0.05	0.02	0.07	0.07
s, saturation flow rate [veh/h]	1695	1777	1723	1777	3552	1586	1777	1865	1863
c, Capacity [veh/h]	9	354	343	24	2090	933	39	1113	1112
d1, Uniform Delay [s]	59.50	46.80	46.82	58.70	12.60	10.70	58.39	10.45	10.45
k, delay calibration	0.04	0.08	0.08	0.11	0.50	0.50	0.08	0.50	0.50
l, 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]	15.93	6.09	6.38	9.81	0.42	0.18	21.30	0.20	0.20
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	0.53	0.89	0.90	0.38	0.33	0.09	0.78	0.11	0.11
d, Delay for Lane Group [s/veh]	75.42	52.90	53.20	68.51	13.02	10.89	79.69	10.65	10.65
Lane Group LOS	E	D	D	E	B	B	E	B	B
Critical Lane Group	Yes	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.19	9.68	9.43	0.33	4.44	0.90	1.12	1.38	1.38
50th-Percentile Queue Length [ft/ln]	4.87	241.94	235.87	8.24	111.00	22.53	27.88	34.47	34.45
95th-Percentile Queue Length [veh/ln]	0.35	14.78	14.47	0.59	7.90	1.62	2.01	2.48	2.48
95th-Percentile Queue Length [ft/ln]	8.76	369.49	361.81	14.83	197.40	40.55	50.19	62.04	62.01

Movement, Approach, & Intersection Results

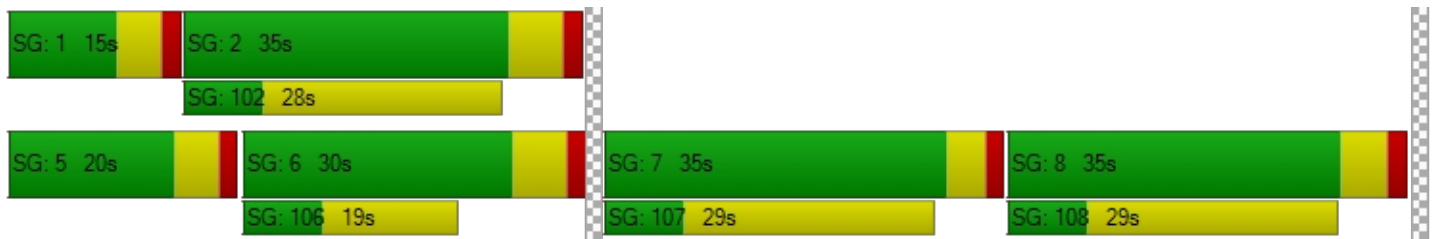
d_M, Delay for Movement [s/veh]	75.42	75.42	75.42	53.02	53.20	53.20	68.51	13.02	10.89	79.69	10.65	10.65
Movement LOS	E	E	E	D	D	D	E	B	B	E	B	B
d_A, Approach Delay [s/veh]	75.42			53.05			13.45			18.08		
Approach LOS	E			D			B			B		
d_I, Intersection Delay [s/veh]	29.07											
Intersection LOS	C											
Intersection V/C	0.392											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	1.740	2.405	2.981	2.646
Crosswalk LOS	A	B	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	502	490	478	395
d_b, Bicycle Delay [s]	33.68	34.20	34.73	38.64
I_b,int, Bicycle LOS Score for Intersection	1.571	2.720	2.265	1.791
Bicycle LOS	A	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 10: Damonte Ranch Pkwy / Double R Blvd

Control Type:	Signalized	Delay (sec / veh):	54.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.573

Intersection Setup

Name	Damonte Ranch Pkwy		Damonte Ranch Pkwy		Double R Blvd	
Approach	Northeastbound		Southwestbound		Southeastbound	
Lane Configuration	↔ ↑ ↑		↑ ↑		↔↔↔↔	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	1	1
Entry Pocket Length [ft]	415.00	100.00	100.00	100.00	225.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Damonte Ranch Pkwy		Damonte Ranch Pkwy		Double R Blvd	
Base Volume Input [veh/h]	468	459	1083	252	145	591
Base Volume Adjustment Factor	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
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	76	0	177
Total Hourly Volume [veh/h]	468	459	1083	176	145	414
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	127	125	294	48	39	113
Total Analysis Volume [veh/h]	509	499	1177	191	158	450
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing in	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		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]	75.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Overlap
Signal Group	7	4	8	0	2	1
Auxiliary Signal Groups						1,2,7
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	4	6	6	0	2	4
Maximum Green [s]	38	41	41	0	33	20
Amber [s]	3.9	4.8	4.8	0.0	3.0	3.9
All red [s]	1.5	1.5	1.5	0.0	1.0	1.5
Split [s]	25	70	45	0	20	30
Vehicle Extension [s]	3.0	3.0	3.0	0.0	1.0	3.0
Walk [s]	0	13	13	0	7	0
Pedestrian Clearance [s]	0	35	25	0	9	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	3.4	4.3	4.3	0.0	2.0	3.4
Minimum Recall	No	Yes	Yes		No	No
Maximum Recall	No	Yes	Yes		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	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
I, Upstream Filtering Factor	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	C	L	R
C, Cycle Length [s]	131	131	131	131	131	131
L, Total Lost Time per Cycle [s]	5.40	6.30	6.30	6.30	4.00	5.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.40	4.30	4.30	4.30	2.00	0.00
g_i, Effective Green Time [s]	33	79	41	41	32	83
g / C, Green / Cycle	0.25	0.60	0.31	0.31	0.25	0.63
(v / s)_i Volume / Saturation Flow Rate	0.15	0.10	0.26	0.26	0.05	0.16
s, saturation flow rate [veh/h]	3459	5094	3560	1741	3459	2813
c, Capacity [veh/h]	870	3082	1113	544	847	1769
d1, Uniform Delay [s]	43.10	11.34	41.69	42.01	39.21	129.45
k, delay calibration	0.11	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.63	0.11	6.79	14.31	0.04	0.03
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.16	0.82	0.84	0.19	0.25
d, Delay for Lane Group [s/veh]	43.73	11.46	48.47	56.32	39.25	129.48
Lane Group LOS	D	B	D	E	D	F
Critical Lane Group	Yes	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	7.16	2.03	14.25	15.47	1.99	11.49
50th-Percentile Queue Length [ft/ln]	179.02	50.83	356.30	386.70	49.75	287.36
95th-Percentile Queue Length [veh/ln]	11.55	3.66	20.44	21.92	3.58	17.05
95th-Percentile Queue Length [ft/ln]	288.73	91.49	511.08	547.96	89.55	426.36

Movement, Approach, & Intersection Results

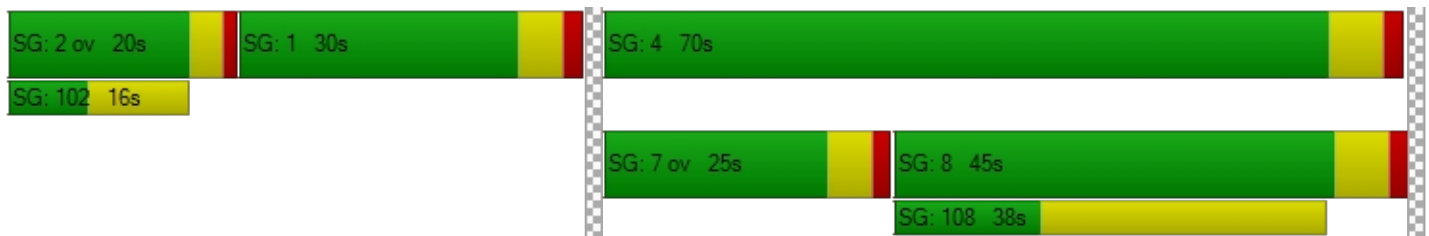
d_M, Delay for Movement [s/veh]	43.73	11.46	50.24	56.32	39.25	129.48
Movement LOS	D	B	D	E	D	F
d_A, Approach Delay [s/veh]	27.75		51.09		106.03	
Approach LOS	C		D		F	
d_I, Intersection Delay [s/veh]	54.40					
Intersection LOS	D					
Intersection V/C	0.573					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	17.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	49.50	44.20
I_p,int, Pedestrian LOS Score for Intersection	0.000	3.087	3.094
Crosswalk LOS	F	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1062	645	267
d_b, Bicycle Delay [s]	13.21	27.54	45.07
I_b,int, Bicycle LOS Score for Intersection	2.114	2.354	1.560
Bicycle LOS	B	B	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-






Intersection Level Of Service Report

Intersection 11: Steamboat Pkwy / Damonte Ranch Pkwy

Control Type:	Signalized	Delay (sec / veh):	2.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.284

Intersection Setup

Name	Damonte Ranch Pkwy		Damonte Ranch Pkwy		Steamboat Pkwy	
Approach	Northbound		Westbound		Southeastbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	2	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	250.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00		45.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Damonte Ranch Pkwy		Damonte Ranch Pkwy		Steamboat Pkwy	
Base Volume Input [veh/h]	1	7	4	1274	487	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	3.00	3.00	3.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	4	0	382	0	0
Total Hourly Volume [veh/h]	1	3	4	892	487	4
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	0	1	1	256	140	1
Total Analysis Volume [veh/h]	1	3	5	1025	560	5
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing in	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
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]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Overlap	Protected	Permissive
Signal Group	2	0	3	8	1	6
Auxiliary Signal Groups				1,8		
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	4	0	4	4	6	6
Maximum Green [s]	15	0	15	15	30	15
Amber [s]	4.3	0.0	3.5	3.5	4.3	4.3
All red [s]	1.5	0.0	0.5	0.5	1.5	1.5
Split [s]	19	0	17	32	59	78
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	3.0
Walk [s]	7	0	7	5	0	7
Pedestrian Clearance [s]	6	0	20	10	0	21
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.8	0.0	2.0	2.0	3.8	3.8
Minimum Recall	No		No	No	Yes	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	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
I, Upstream Filtering Factor	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	C	C	L	R	L	C
C, Cycle Length [s]	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.80	5.80	4.00	5.80	5.80	5.80
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.80	3.80	2.00	0.00	3.80	3.80
g_i, Effective Green Time [s]	0	0	11	98	83	89
g / C, Green / Cycle	0.00	0.00	0.10	0.89	0.75	0.81
(v / s)_i Volume / Saturation Flow Rate	0.00	0.00	0.00	0.37	0.16	0.00
s, saturation flow rate [veh/h]	1855	1577	1767	2791	3431	3532
c, Capacity [veh/h]	8	7	183	2484	2574	2852
d1, Uniform Delay [s]	54.51	54.58	44.32	1.05	4.10	2.04
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.47	36.77	0.06	0.51	0.19	0.00
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.12	0.43	0.03	0.41	0.22	0.00
d, Delay for Lane Group [s/veh]	60.98	91.36	44.38	1.56	4.29	2.04
Lane Group LOS	E	F	D	A	A	A
Critical Lane Group	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.04	0.15	0.12	0.18	1.57	0.01
50th-Percentile Queue Length [ft/ln]	1.04	3.80	3.06	4.38	39.36	0.17
95th-Percentile Queue Length [veh/ln]	0.07	0.27	0.22	0.32	2.83	0.01
95th-Percentile Queue Length [ft/ln]	1.87	6.84	5.52	7.89	70.84	0.31

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.98	91.36	44.38	1.56	4.29	2.04
Movement LOS	E	F	D	A	A	A
d_A, Approach Delay [s/veh]	83.76		1.77		4.27	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	2.86					
Intersection LOS	A					
Intersection V/C	0.284					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.55	44.55	44.55
I_p,int, Pedestrian LOS Score for Intersection	2.153	3.432	2.836
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	240	236	1313
d_b, Bicycle Delay [s]	42.59	42.77	6.49
I_b,int, Bicycle LOS Score for Intersection	1.566	1.560	2.026
Bicycle LOS	A	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 12: Veterans Pkwy / Steamboat Pkwy

Control Type:	Signalized	Delay (sec / veh):	38.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.623

Intersection Setup

Name	Veterans Pkwy			Veterans Pkwy			Steamboat Pkwy			Steamboat Pkwy		
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	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	200.00	100.00	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]	45.00			45.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Veterans Pkwy			Veterans Pkwy			Steamboat Pkwy			Steamboat Pkwy		
Base Volume Input [veh/h]	465	491	27	244	435	243	111	316	173	79	683	66
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 [%]	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10
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	73	0	0	90	0	0	34
Total Hourly Volume [veh/h]	465	491	13	244	435	170	111	316	83	79	683	32
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
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]	126	133	4	66	118	46	30	86	23	21	186	9
Total Analysis Volume [veh/h]	505	534	14	265	473	185	121	343	90	86	742	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			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]	115.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	5	2	0	1	6	6	7	4	4	3	8	0
Auxiliary Signal Groups									4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	4	0	4	4	4	4	6	6	4	6	0
Maximum Green [s]	30	30	0	15	30	30	15	30	30	15	30	0
Amber [s]	3.9	4.8	0.0	3.9	4.8	4.8	3.9	4.8	4.8	3.2	4.8	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0
Split [s]	32	37	0	25	30	30	20	38	38	20	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	7	0	7	0
Pedestrian Clearance [s]	0	17	0	0	15	15	0	23	23	0	23	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]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.4	4.3	0.0	3.4	4.3	4.3	3.4	4.3	4.3	2.7	4.3	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	Yes	Yes	No	No	
Pedestrian Recall	No	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	R	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	5.40	6.30	6.30	6.30
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	0.00
l2, Clearance Lost Time [s]	0.00	4.30	4.30	0.00	4.30	4.30	0.00	4.30	0.00	0.00	4.30	4.30
g_i, Effective Green Time [s]	51	32	32	51	19	19	56	46	79	56	44	44
g / C, Green / Cycle	0.43	0.26	0.26	0.43	0.16	0.16	0.47	0.39	0.66	0.47	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.36	0.15	0.15	0.23	0.13	0.12	0.14	0.19	0.06	0.08	0.21	0.21
s, saturation flow rate [veh/h]	1413	1853	1837	1165	3529	1575	885	1853	1575	1132	1853	1824
c, Capacity [veh/h]	576	488	483	480	562	251	382	716	1040	467	679	669
d1, Uniform Delay [s]	29.30	38.30	38.31	24.63	49.02	48.09	20.49	27.78	7.35	19.26	30.56	30.56
k, delay calibration	0.50	0.12	0.12	0.50	0.11	0.11	0.50	0.50	0.50	0.12	0.50	0.50
l, 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
d2, Incremental Delay [s]	17.06	1.18	1.19	4.53	3.49	4.19	2.17	2.29	0.16	0.21	3.54	3.60
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.88	0.56	0.56	0.55	0.84	0.74	0.32	0.48	0.09	0.18	0.58	0.58
d, Delay for Lane Group [s/veh]	46.36	39.48	39.49	29.15	52.50	52.28	22.66	30.07	7.51	19.47	34.09	34.15
Lane Group LOS	D	D	D	C	D	D	C	C	A	B	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	13.75	6.96	6.90	5.46	6.96	5.42	2.13	7.75	0.83	1.35	9.59	9.46
50th-Percentile Queue Length [ft/ln]	343.86	173.97	172.46	136.60	173.98	135.61	53.13	193.69	20.70	33.65	239.86	236.40
95th-Percentile Queue Length [veh/ln]	19.84	11.29	11.21	9.30	11.29	9.24	3.83	12.31	1.49	2.42	14.67	14.50
95th-Percentile Queue Length [ft/ln]	495.92	282.13	280.14	232.43	282.14	231.10	95.63	307.81	37.26	60.56	366.86	362.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.36	39.49	39.49	29.15	52.50	52.28	22.66	30.07	7.51	19.47	34.12	34.15
Movement LOS	D	D	D	C	D	D	C	C	A	B	C	C
d_A, Approach Delay [s/veh]	42.78			45.75			24.79			32.66		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	38.08											
Intersection LOS	D											
Intersection V/C	0.623											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	2.911	3.056	3.057	2.734
Crosswalk LOS	C	C	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	512	395	528	528
d_b, Bicycle Delay [s]	33.23	38.64	32.49	32.49
I_b,int, Bicycle LOS Score for Intersection	2.440	2.381	2.622	2.300
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 13: Rio Wrangler Pkwy / Steamboat Pkwy

Control Type:	All-way stop	Delay (sec / veh):	99.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.287

Intersection Setup

Name	Rio Wrangler Pkwy			Rio Wrangler Pkwy			Steamboat Pkwy			Steamboat Pkwy		
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	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	100.00	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]	45.00			45.00			45.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Rio Wrangler Pkwy			Rio Wrangler Pkwy			Steamboat Pkwy			Steamboat Pkwy		
Base Volume Input [veh/h]	474	9	1	2	32	211	64	14	500	5	27	1
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 [%]	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70
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]	474	9	1	2	32	211	64	14	500	5	27	1
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
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]	139	3	0	1	9	62	19	4	147	1	8	0
Total Analysis Volume [veh/h]	558	11	1	2	38	248	75	16	588	6	32	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	558	464	458	459	489	588	385
Degree of Utilization, x	1.29	0.03	0.63	0.16	0.03	1.09	0.10

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	24.19	0.08	4.23	0.58	0.10	18.10	0.34
95th-Percentile Queue Length [ft]	604.81	1.99	105.78	14.49	2.53	452.60	8.41
Approach Delay [s/veh]	166.86		23.22	79.07			13.43
Approach LOS	F		C	F			B
Intersection Delay [s/veh]	98.99						
Intersection LOS	F						

Intersection Level Of Service Report

Intersection 14: Rio Wrangler Pkwy / McCauley Ranch Blvd

Control Type:	Two-way stop	Delay (sec / veh):	63.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.438

Intersection Setup

Name	Rio Wrangler Pkwy		Rio Wrangler Pkwy		MCCauley Ranch Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↩↪		↪↩		↩↪	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	110.00	100.00	125.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00		45.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Rio Wrangler Pkwy		Rio Wrangler Pkwy		MCCauley Ranch Blvd	
Base Volume Input [veh/h]	213	90	301	223	35	222
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.50	4.50	4.50	4.50	4.50	4.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	213	90	301	223	35	222
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	30	99	73	12	73
Total Analysis Volume [veh/h]	280	118	396	293	46	292
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.35	0.00	0.44	0.39
d_M, Delay for Movement [s/veh]	0.00	0.00	9.78	0.00	63.62	12.78
Movement LOS	A	A	A	A	F	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	1.56	0.00	1.87	1.84
95th-Percentile Queue Length [ft/ln]	0.00	0.00	38.90	0.00	46.64	46.04
d_A, Approach Delay [s/veh]	0.00		5.62		19.70	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	7.39					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 15: S. Virginia St / Geiger Grade Rd

Control Type:	Signalized	Delay (sec / veh):	24.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.417

Intersection Setup

Name	Geiger Grade Rd			Mt. Rose Hwy			S. Virginia St			S. Virginia St		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
Lane Configuration	1 1 1			1 1 1 1			1 1 1 1			1 1 1 1		
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	1	2	0	1	2	0	1	2	0	0
Entry Pocket Length [ft]	350.00	100.00	700.00	725.00	100.00	250.00	525.00	100.00	100.00	600.00	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]	35.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Geiger Grade Rd			Mt. Rose Hwy			S. Virginia St			S. Virginia St		
Base Volume Input [veh/h]	118	580	925	81	183	24	54	466	122	270	132	118
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 [%]	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10
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	278	0	0	12	0	0	63	0	0	61
Total Hourly Volume [veh/h]	118	580	647	81	183	12	54	466	59	270	132	57
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]	34	169	188	24	53	3	16	135	17	78	38	17
Total Analysis Volume [veh/h]	137	674	752	94	213	14	63	542	69	314	153	66
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	0	3	8	0	5	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	5	5	5	5
Maximum Green [s]	30	35	0	20	35	0	25	40	40	40	40	40
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	5.0	5.0	4.0	5.0	5.0
All red [s]	1.0	1.5	0.0	1.5	1.5	0.0	1.0	2.0	2.0	2.0	2.0	2.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	7
Pedestrian Clearance [s]	0	28	0	0	28	0	0	18	18	0	18	18
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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	3.5	0.0	3.5	3.5	0.0	3.0	5.0	5.0	4.0	5.0	5.0
Minimum Recall	No	No		No	No		No	Yes		No	Yes	
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	L	C	L	C	R	L	C	R
C, Cycle Length [s]	61	61	61	61	61	61	61	61	61	61
L, Total Lost Time per Cycle [s]	5.00	5.50	5.50	5.50	5.00	7.00	7.00	6.00	7.00	7.00
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
l2, Clearance Lost Time [s]	3.00	3.50	3.50	3.50	3.00	5.00	5.00	4.00	5.00	5.00
g_i, Effective Green Time [s]	6	15	4	13	3	10	10	8	16	16
g / C, Green / Cycle	0.10	0.24	0.07	0.21	0.05	0.16	0.16	0.14	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.08	0.19	0.03	0.06	0.02	0.11	0.04	0.09	0.03	0.04
s, saturation flow rate [veh/h]	1765	3529	3428	3529	3428	5049	1575	3428	5049	1575
c, Capacity [veh/h]	182	851	226	749	187	822	256	464	1313	410
d1, Uniform Delay [s]	26.50	21.63	27.26	20.08	27.68	23.87	22.28	25.01	17.16	17.36
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.16	1.71	1.22	0.21	1.06	0.91	0.56	1.73	0.04	0.18
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
Rp, platoon ratio	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

Lane Group Results

X, volume / capacity	0.75	0.79	0.42	0.28	0.34	0.66	0.27	0.68	0.12	0.16
d, Delay for Lane Group [s/veh]	32.66	23.34	28.49	20.28	28.74	24.78	22.84	26.75	17.20	17.55
Lane Group LOS	C	C	C	C	C	C	C	C	B	B
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.09	4.23	0.63	1.12	0.42	2.20	0.80	2.01	0.47	0.63
50th-Percentile Queue Length [ft/ln]	52.32	105.77	15.65	28.02	10.60	55.04	20.00	50.30	11.82	15.84
95th-Percentile Queue Length [veh/ln]	3.77	7.60	1.13	2.02	0.76	3.96	1.44	3.62	0.85	1.14
95th-Percentile Queue Length [ft/ln]	94.17	190.10	28.17	50.43	19.07	99.06	35.99	90.54	21.27	28.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.66	23.34	0.00	28.49	20.28	0.00	28.74	24.78	22.84	26.75	17.20	17.55
Movement LOS	C	C		C	C		C	C	C	C	B	B
d_A, Approach Delay [s/veh]	24.91			22.79			24.95			22.86		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	24.18											
Intersection LOS	C											
Intersection V/C	0.417											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.731	2.838	3.105	3.135
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	778	889	889
d_b, Bicycle Delay [s]	16.81	16.81	13.89	13.89
I_b,int, Bicycle LOS Score for Intersection	2.229	1.813	1.965	1.886
Bicycle LOS	B	A	A	A

Sequence

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



MOVEMENT SUMMARY

 **Site: Geiger/Veterans AM**

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Geiger Grade											
3	L2	723	4.0	0.566	13.9	LOS B	3.3	86.1	0.65	0.69	29.9
8	T1	20	4.0	0.566	13.9	LOS B	3.3	86.1	0.65	0.69	30.0
18	R2	93	4.0	0.566	13.9	LOS B	3.3	86.1	0.65	0.69	29.0
Approach		836	4.0	0.566	13.9	LOS B	3.3	86.1	0.65	0.69	29.8
East: Veterans Pkwy											
1	L2	25	4.0	0.640	19.4	LOS C	3.0	77.8	0.69	0.77	29.8
6	T1	746	4.0	0.640	19.1	LOS C	3.0	77.8	0.68	0.76	29.7
16	R2	6	4.0	0.640	18.8	LOS C	2.9	75.1	0.67	0.75	28.9
Approach		777	4.0	0.640	19.1	LOS C	3.0	77.8	0.68	0.76	29.7
North: Private Access											
7	L2	23	4.0	0.361	17.1	LOS C	1.0	26.5	0.75	0.79	30.2
4	T1	20	4.0	0.361	17.1	LOS C	1.0	26.5	0.75	0.79	29.9
14	R2	90	4.0	0.361	17.1	LOS C	1.0	26.5	0.75	0.79	29.0
Approach		132	4.0	0.361	17.1	LOS C	1.0	26.5	0.75	0.79	29.3
West: Veterans Pkwy											
5	L2	30	4.0	0.344	7.1	LOS A	1.6	41.4	0.24	0.12	35.3
2	T1	318	4.0	0.344	7.1	LOS A	1.6	41.4	0.24	0.12	34.9
12	R2	283	4.0	0.279	6.3	LOS A	1.2	31.0	0.22	0.11	33.9
Approach		631	4.0	0.344	6.8	LOS A	1.6	41.4	0.23	0.11	34.5
All Vehicles		2376	4.0	0.640	13.9	LOS B	3.3	86.1	0.55	0.57	30.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

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 HCM 2010).

Roundabout Capacity Model: US HCM 2010.

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 1: S. Virginia St / I-580 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	49.3
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.887

Intersection Setup

Name	S. Virginia St			S. Virginia St			North On-Ramp			North Off-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				r						r		
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	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	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]	45.00			45.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	S. Virginia St			S. Virginia St			North On-Ramp			North Off-Ramp		
Base Volume Input [veh/h]	0	1131	0	0	1331	307	0	0	0	0	0	386
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	1.30	2.00	2.00	1.30	1.30	2.00	2.00	2.00	2.00	2.00	1.30
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	1131	0	0	1331	307	0	0	0	0	0	386
Peak Hour Factor	1.0000	0.9600	1.0000	1.0000	0.9600	0.9600	1.0000	1.0000	1.0000	1.0000	1.0000	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]	0	295	0	0	347	80	0	0	0	0	0	101
Total Analysis Volume [veh/h]	0	1178	0	0	1386	320	0	0	0	0	0	402
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	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	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.89
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.28
Movement LOS		A			A	A						E
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.49
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	237.13
d_A, Approach Delay [s/veh]	0.00			0.00			0.00			49.28		
Approach LOS	A			A			A			E		
d_I, Intersection Delay [s/veh]	6.03											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 2: Double R Blvd / Sandhill Rd

Control Type:	Two-way stop	Delay (sec / veh):	817.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.157

Intersection Setup

Name	Double R Blvd			Double R Blvd			Sandhill Rd			Sandhill 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	0	0	0	1	0	0
Entry Pocket Length [ft]	150.00	100.00	100.00	150.00	100.00	100.00	100.00	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]	45.00			45.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Double R Blvd			Double R Blvd			Sandhill Rd			Sandhill Rd		
Base Volume Input [veh/h]	96	613	21	24	807	15	5	20	114	53	24	101
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 [%]	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
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]	96	613	21	24	807	15	5	20	114	53	24	101
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]	29	185	6	7	243	5	2	6	34	16	7	30
Total Analysis Volume [veh/h]	116	739	25	29	972	18	6	24	137	64	29	122
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.17	0.01	0.00	0.03	0.01	0.00	0.27	0.52	0.26	2.16	0.63	0.20
d_M, Delay for Movement [s/veh]	11.17	0.00	0.00	9.39	0.00	0.00	281.86	200.28	128.51	817.16	138.62	66.17
Movement LOS	B	A	A	A	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	0.59	0.00	0.00	0.11	0.00	0.00	8.46	8.46	8.46	7.49	5.81	5.81
95th-Percentile Queue Length [ft/ln]	14.81	0.00	0.00	2.65	0.00	0.00	211.62	211.62	211.62	187.33	145.35	145.35
d_A, Approach Delay [s/veh]	1.47			0.27			144.33			299.49		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	39.48											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: S. Meadows Pkwy / Gateway Dr

Control Type:	Signalized	Delay (sec / veh):	39.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.683

Intersection Setup

Name	Gateway Dr			Gateway Dr			S. Meadows Pkwy			S. Meadows Pkwy		
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	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	40.00	100.00	100.00	100.00	100.00	100.00	200.00	100.00	100.00	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]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Gateway Dr			Gateway Dr			S. Meadows Pkwy			S. Meadows Pkwy		
Base Volume Input [veh/h]	83	36	42	161	36	499	336	1195	35	65	1334	69
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 [%]	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
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	22	0	0	150	0	0	18	0	0	36
Total Hourly Volume [veh/h]	83	36	20	161	36	349	336	1195	17	65	1334	33
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	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]	22	9	5	42	9	91	88	311	4	17	347	9
Total Analysis Volume [veh/h]	86	38	21	168	38	364	350	1245	18	68	1390	34
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	135
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	4	0	0	4	0	6	8	0	6	12	0
Maximum Green [s]	0	20	0	0	30	0	35	35	0	20	35	0
Amber [s]	0.0	3.0	0.0	0.0	3.4	0.0	3.9	4.8	0.0	3.2	4.1	0.0
All red [s]	0.0	1.5	0.0	0.0	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	0	45	0	0	45	0	45	70	0	20	45	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	8	0	0	8	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	29	0	0	28	0	0	14	0	0	16	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.5	0.0	0.0	2.9	0.0	3.4	4.3	0.0	2.7	3.6	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	Yes		No	Yes	
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

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	135	135	135	135	135	135	135	135	135	135
L, Total Lost Time per Cycle [s]	4.50	4.50	4.90	4.90	5.40	6.30	6.30	4.70	5.60	5.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.50	2.90	2.90	3.40	4.30	4.30	2.70	3.60	3.60
g_i, Effective Green Time [s]	30	30	30	30	28	82	82	7	61	61
g / C, Green / Cycle	0.23	0.23	0.22	0.22	0.21	0.61	0.61	0.05	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.06	0.03	0.18	0.23	0.19	0.23	0.23	0.04	0.26	0.26
s, saturation flow rate [veh/h]	1414	1775	1165	1604	1797	3592	1873	1797	3592	1864
c, Capacity [veh/h]	83	400	307	357	376	2194	1144	88	1618	840
d1, Uniform Delay [s]	64.72	41.86	52.83	52.44	52.36	13.28	13.28	63.40	27.55	27.55
k, delay calibration	0.11	0.11	0.15	0.45	0.25	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	55.63	0.17	3.51	50.43	19.86	0.50	0.95	13.43	1.52	2.91
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
Rp, platoon ratio	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

Lane Group Results

X, volume / capacity	1.04	0.15	0.67	1.02	0.93	0.38	0.38	0.77	0.58	0.58
d, Delay for Lane Group [s/veh]	120.34	42.03	56.34	102.87	72.23	13.78	14.23	76.83	29.07	30.46
Lane Group LOS	F	D	E	F	E	B	B	E	C	C
Critical Lane Group	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.58	1.63	7.05	17.14	13.60	6.34	6.76	2.63	11.44	12.19
50th-Percentile Queue Length [ft/ln]	89.44	40.72	176.18	428.48	340.02	158.56	168.98	65.68	285.95	304.81
95th-Percentile Queue Length [veh/ln]	6.44	2.93	11.40	24.22	19.65	10.47	11.02	4.73	16.98	17.92
95th-Percentile Queue Length [ft/ln]	160.99	73.29	285.02	605.46	491.22	261.81	275.57	118.23	424.61	447.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	120.34	42.03	42.03	56.34	56.34	102.87	72.23	13.93	14.23	76.83	29.53	30.46
Movement LOS	F	D	D	E	E	F	E	B	B	E	C	C
d_A, Approach Delay [s/veh]	88.48			86.05			26.58			31.70		
Approach LOS	F			F			C			C		
d_I, Intersection Delay [s/veh]	39.81											
Intersection LOS	D											
Intersection V/C	0.683											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	12.0	12.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	56.95	56.95	56.03	56.03
I_p,int, Pedestrian LOS Score for Intersection	2.075	2.492	3.337	3.388
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	594	944	584
d_b, Bicycle Delay [s]	33.08	33.36	18.83	33.85
I_b,int, Bicycle LOS Score for Intersection	1.835	2.748	2.457	2.400
Bicycle LOS	A	B	B	B

Sequence

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



Intersection Level Of Service Report

Intersection 4: S. Meadows Pkwy / Double R Blvd

Control Type:	Signalized	Delay (sec / veh):	46.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.562

Intersection Setup

Name	Double R Blvd			Double R Blvd			S. Meadows Pkwy			S. Meadows Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
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	2	0	1	2	0	1	2	0	0	2	0	0
Entry Pocket Length [ft]	250.00	100.00	275.00	225.00	100.00	450.00	315.00	100.00	100.00	225.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
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	49.21
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Double R Blvd			Double R Blvd			S. Meadows Pkwy			S. Meadows Pkwy		
Base Volume Input [veh/h]	426	307	137	312	470	402	354	854	269	103	564	75
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 [%]	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
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	71	0	0	121	0	0	0	0	0	0
Total Hourly Volume [veh/h]	426	307	66	312	470	281	354	854	269	103	564	75
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	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]	111	80	17	81	122	73	92	222	70	27	147	20
Total Analysis Volume [veh/h]	444	320	69	325	490	293	369	890	280	107	588	78
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	135
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	6	0	4	6	0	6	10	0	6	10	0
Maximum Green [s]	25	30	0	25	30	0	35	35	0	16	35	0
Amber [s]	3.9	4.8	0.0	3.9	4.8	0.0	3.2	4.1	0.0	3.2	4.1	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	24	41	0	24	41	0	35	50	0	20	35	0
Vehicle Extension [s]	2.5	2.5	0.0	2.5	2.5	0.0	2.5	3.0	0.0	2.0	3.0	0.0
Walk [s]	0	8	0	0	8	0	0	7	0	0	9	0
Pedestrian Clearance [s]	0	25	0	0	25	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.4	4.3	0.0	3.4	4.3	0.0	2.7	3.6	0.0	2.7	3.6	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		Yes	Yes		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	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	135	135	135	135	135	135	135	135	135	135	135	135
L, Total Lost Time per Cycle [s]	5.40	6.30	6.30	5.40	6.30	6.30	4.70	5.60	5.60	4.70	5.60	5.60
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	0.00
l2, Clearance Lost Time [s]	3.40	4.30	4.30	3.40	4.30	4.30	2.70	3.60	3.60	2.70	3.60	3.60
g_i, Effective Green Time [s]	19	32	32	15	27	27	35	61	61	6	32	32
g / C, Green / Cycle	0.14	0.23	0.23	0.11	0.20	0.20	0.26	0.45	0.45	0.05	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.13	0.09	0.04	0.09	0.14	0.18	0.11	0.22	0.22	0.03	0.12	0.12
s, saturation flow rate [veh/h]	3495	3598	1606	3495	3598	1606	3495	3598	1667	3495	3598	1779
c, Capacity [veh/h]	502	840	375	380	714	319	906	1617	749	158	847	419
d1, Uniform Delay [s]	56.68	43.51	41.42	59.11	50.18	53.02	41.38	26.29	26.29	63.44	44.98	45.07
k, delay calibration	0.08	0.08	0.08	0.08	0.08	0.26	0.50	0.50	0.50	0.04	0.11	0.11
l, 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
d2, Incremental Delay [s]	4.08	0.21	0.17	4.25	0.88	21.32	1.36	1.08	2.33	1.87	0.50	1.04
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.88	0.38	0.18	0.86	0.69	0.92	0.41	0.49	0.49	0.68	0.52	0.53
d, Delay for Lane Group [s/veh]	60.76	43.72	41.60	63.36	51.06	74.34	42.74	27.37	28.61	65.31	45.49	46.11
Lane Group LOS	E	D	D	E	D	E	D	C	C	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.66	4.52	1.87	5.66	7.73	11.54	5.26	9.25	8.83	1.85	6.53	6.61
50th-Percentile Queue Length [ft/ln]	191.46	113.10	46.63	141.38	193.19	288.54	131.44	231.17	220.82	46.13	163.13	165.32
95th-Percentile Queue Length [veh/ln]	12.20	8.01	3.36	9.56	12.29	17.11	9.02	14.23	13.71	3.32	10.71	10.83
95th-Percentile Queue Length [ft/ln]	304.93	200.31	83.94	238.88	307.17	427.83	225.45	355.85	342.68	83.04	267.86	270.75

Movement, Approach, & Intersection Results

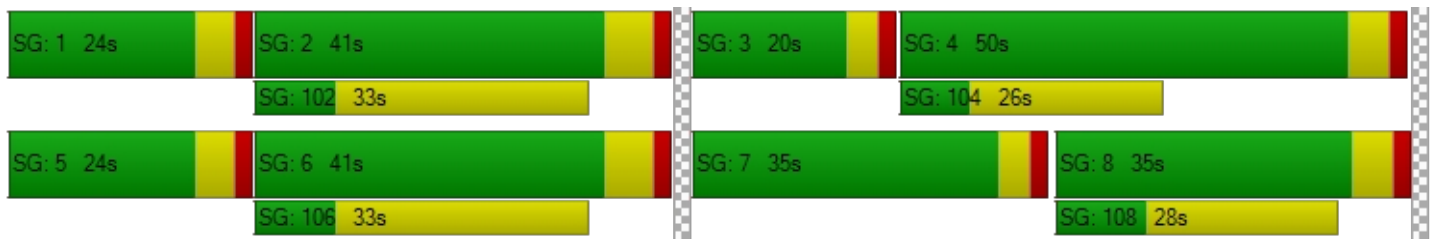
d_M, Delay for Movement [s/veh]	60.76	43.72	41.60	63.36	51.06	74.34	42.74	27.50	28.61	65.31	45.64	46.11
Movement LOS	E	D	D	E	D	E	D	C	C	E	D	D
d_A, Approach Delay [s/veh]	52.63			60.83			31.35			48.41		
Approach LOS	D			E			C			D		
d_I, Intersection Delay [s/veh]	46.30											
Intersection LOS	D											
Intersection V/C	0.562											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	13.0	12.0	12.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	56.95	55.13	56.03	56.03
I_p,int, Pedestrian LOS Score for Intersection	3.027	3.111	3.111	3.062
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	514	514	658	436
d_b, Bicycle Delay [s]	37.26	37.26	30.40	41.30
I_b,int, Bicycle LOS Score for Intersection	2.305	2.574	2.406	1.985
Bicycle LOS	B	B	B	A

Sequence





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



Intersection Level Of Service Report
Intersection 5: S. Meadows Pkwy / Double Diamond Pkwy

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.470

Intersection Setup

Name	S. Meadows Pkwy			S. Meadows Pkwy			Double Diamond Pkwy			Double Diamond Pkwy		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
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	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	175.00	100.00	175.00	100.00	100.00	100.00	250.00	100.00	100.00	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]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Meadows Pkwy			S. Meadows Pkwy			Double Diamond Pkwy			Double Diamond Pkwy		
Base Volume Input [veh/h]	103	517	329	5	312	188	109	153	5	385	360	197
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 [%]	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
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	0	0	0	75	0	0	0	0	0	79
Total Hourly Volume [veh/h]	103	517	329	5	312	113	109	153	5	385	360	118
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
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]	28	140	89	1	85	31	30	42	1	105	98	32
Total Analysis Volume [veh/h]	112	562	358	5	339	123	118	166	5	418	391	128
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	4	6	0	4	6	0
Maximum Green [s]	35	35	0	16	35	0	25	30	0	25	30	0
Amber [s]	3.2	4.1	0.0	3.2	4.1	0.0	3.3	4.2	0.0	3.3	4.2	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	2.5	3.0	0.0	3.0	3.0	0.0	2.5	2.5	0.0	2.5	2.5	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	19	0	0	18	0	0	20	0	0	17	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.7	3.6	0.0	2.7	3.6	0.0	2.8	3.7	0.0	2.8	3.7	0.0
Minimum Recall	No	Yes		No	Yes		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	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	57	57	57	57	57	57	57	57	57	57	57
L, Total Lost Time per Cycle [s]	4.70	5.60	4.70	5.60	5.60	4.80	5.70	5.70	4.80	5.70	5.70
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]	2.70	3.60	2.70	3.60	3.60	2.80	3.70	3.70	2.80	3.70	3.70
g_i, Effective Green Time [s]	5	15	0	10	10	5	6	6	15	16	16
g / C, Green / Cycle	0.09	0.26	0.01	0.18	0.18	0.09	0.10	0.10	0.27	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.06	0.16	0.00	0.13	0.13	0.07	0.05	0.05	0.23	0.21	0.08
s, saturation flow rate [veh/h]	1798	3595	1798	1888	1721	1798	1888	1869	1798	1888	1605
c, Capacity [veh/h]	159	928	15	336	306	157	187	185	484	530	450
d1, Uniform Delay [s]	25.20	18.55	28.04	21.99	22.07	25.34	24.18	24.19	19.79	18.56	15.99
k, delay calibration	0.08	0.11	0.11	0.11	0.11	0.08	0.08	0.08	0.08	0.08	0.08
l, 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]	4.23	0.64	13.03	2.78	3.31	5.29	1.31	1.33	3.58	1.52	0.25
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	0.71	0.61	0.34	0.71	0.73	0.75	0.46	0.46	0.86	0.74	0.28
d, Delay for Lane Group [s/veh]	29.43	19.19	41.07	24.77	25.38	30.62	25.49	25.52	23.37	20.08	16.25
Lane Group LOS	C	B	D	C	C	C	C	C	C	C	B
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.53	2.94	0.12	2.95	2.80	1.65	1.06	1.06	5.06	4.28	1.18
50th-Percentile Queue Length [ft/ln]	38.25	73.50	2.90	73.78	70.09	41.33	26.56	26.45	126.52	106.93	29.38
95th-Percentile Queue Length [veh/ln]	2.75	5.29	0.21	5.31	5.05	2.98	1.91	1.90	8.75	7.67	2.12
95th-Percentile Queue Length [ft/ln]	68.84	132.30	5.22	132.80	126.16	74.40	47.81	47.62	218.76	191.72	52.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.43	19.19	0.00	41.07	24.95	25.38	30.62	25.50	25.52	23.37	20.08	16.25
Movement LOS	C	B		D	C	C	C	C	C	C	C	B
d_A, Approach Delay [s/veh]	20.89			25.24			27.59			21.02		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	22.62											
Intersection LOS	C											
Intersection V/C	0.470											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	2.764	2.768	2.340	2.765
Crosswalk LOS	C	C	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	583	500	500
d_b, Bicycle Delay [s]	30.10	30.10	33.75	33.75
I_b,int, Bicycle LOS Score for Intersection	2.116	2.007	1.798	3.236
Bicycle LOS	B	B	A	C

Sequence

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



Intersection Level Of Service Report
Intersection 6: S. Meadows Pkwy / Wilbur May Pkwy

Control Type:	All-way stop	Delay (sec / veh):	26.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.866

Intersection Setup

Name	Wilbur May Pkwy		S. Meadows Pkwy		S. Meadows Pkwy	
Approach	Northbound		Westbound		Northeastbound	
Lane Configuration	1↯		↯↯		↯↯	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0
Entry Pocket Length [ft]	75.00	100.00	125.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Wilbur May Pkwy		S. Meadows Pkwy		S. Meadows Pkwy	
Base Volume Input [veh/h]	84	22	35	417	737	164
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.10	1.10	1.10	1.10	1.10	1.10
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	84	22	35	417	737	164
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	6	10	115	202	45
Total Analysis Volume [veh/h]	92	24	38	458	810	180
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	418	484	475	509	509	571	595
Degree of Utilization, x	0.22	0.05	0.08	0.45	0.45	0.87	0.83

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.83	0.16	0.26	2.30	2.30	9.66	8.72
95th-Percentile Queue Length [ft]	20.79	3.90	6.49	57.60	57.60	241.60	218.08
Approach Delay [s/veh]	13.08		15.09			34.27	
Approach LOS	B		C			D	
Intersection Delay [s/veh]	26.80						
Intersection LOS	D						

Intersection Level Of Service Report
Intersection 7: S. Meadows Pkwy / Echo Valley Pkwy

Control Type:	Two-way stop	Delay (sec / veh):	20.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.436

Intersection Setup

Name	Echo Valley Pkwy		S. Meadows Pkwy		S. Meadows Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	⇐⇐⇐		⇐⇐		⇐⇐	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	275.00	150.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Echo Valley Pkwy		S. Meadows Pkwy		S. Meadows Pkwy	
Base Volume Input [veh/h]	114	15	545	271	15	374
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.10	1.10	1.10	1.10	1.10	1.10
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	114	15	545	271	15	374
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	4	153	76	4	105
Total Analysis Volume [veh/h]	128	17	612	304	17	420
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.44	0.02	0.01	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	20.66	10.33	0.00	0.00	8.78	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.81	0.08	0.00	0.00	0.05	0.00
95th-Percentile Queue Length [ft/ln]	20.35	1.89	0.00	0.00	1.34	0.00
d_A, Approach Delay [s/veh]	19.45		0.00		0.34	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.98					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Veterans Pkwy / Long Meadow Dr

Control Type:	Two-way stop	Delay (sec / veh):	43.5
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.139

Intersection Setup

Name	Veterans Pkwy			Long Meadow Dr			Veterans Pkwy			Long Meadow Dr		
Approach	Southbound			Westbound			Northeastbound			Southeastbound		
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	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	250.00	100.00	250.00	75.00	100.00	100.00	175.00	100.00	100.00	75.00	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]	45.00			25.00			45.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Veterans Pkwy			Long Meadow Dr			Veterans Pkwy			Long Meadow Dr		
Base Volume Input [veh/h]	28	748	28	25	3	21	58	526	16	14	0	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
Total Hourly Volume [veh/h]	28	748	28	25	3	21	58	526	16	14	0	39
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
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]	8	201	8	7	1	6	16	141	4	4	0	10
Total Analysis Volume [veh/h]	30	804	30	27	3	23	62	566	17	15	0	42
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.21	0.03	0.03	0.08	0.01	0.00	0.14	0.00	0.07
d_M, Delay for Movement [s/veh]	8.76	0.00	0.00	40.23	41.86	10.69	9.78	0.00	0.00	43.54	42.17	11.48
Movement LOS	A	A	A	E	E	B	A	A	A	E	E	B
95th-Percentile Queue Length [veh/ln]	0.09	0.00	0.00	0.75	0.20	0.20	0.25	0.00	0.00	0.46	0.23	0.23
95th-Percentile Queue Length [ft/ln]	2.35	0.00	0.00	18.79	5.01	5.01	6.15	0.00	0.00	11.60	5.65	5.65
d_A, Approach Delay [s/veh]	0.30			27.50			0.94			19.91		
Approach LOS	A			D			A			C		
d_I, Intersection Delay [s/veh]	2.14											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 9: Double R Blvd / Double Diamond Pkwy

Control Type:	Signalized	Delay (sec / veh):	58.1
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.440

Intersection Setup

Name	Double Diamond Pkwy			Double Diamond Pkwy			Double R Blvd			Double R Blvd		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
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	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	200.00	100.00	200.00	275.00	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]	25.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Double Diamond Pkwy			Double Diamond Pkwy			Double R Blvd			Double R Blvd		
Base Volume Input [veh/h]	9	25	7	245	14	53	26	301	407	208	936	37
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 [%]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
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	4	0	0	28	0	0	122	0	0	19
Total Hourly Volume [veh/h]	9	25	3	245	14	25	26	301	285	208	936	18
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
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]	3	7	1	69	4	7	7	85	80	58	263	5
Total Analysis Volume [veh/h]	10	28	3	275	16	28	29	338	320	234	1052	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			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]	35.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	7	0	0	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	4	0	0	4	0	6	8	0	4	8	0
Maximum Green [s]	0	15	0	0	30	0	12	35	0	20	35	0
Amber [s]	0.0	3.4	0.0	0.0	4.1	0.0	3.9	4.8	0.0	3.9	4.8	0.0
All red [s]	0.0	1.5	0.0	0.0	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	0	35	0	0	35	0	20	35	0	15	30	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.5	0.0	3.0	3.0	0.0	2.5	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	22	0	0	21	0	0	12	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.9	0.0	0.0	3.6	0.0	3.4	4.3	0.0	3.4	4.3	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			Yes		No	Yes		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

Lane Group Calculations

Lane Group	C	L	C	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.90	5.60	5.60	5.40	6.30	6.30	5.40	6.30	6.30
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
l2, Clearance Lost Time [s]	2.90	3.60	3.60	3.40	4.30	4.30	3.40	4.30	4.30
g_i, Effective Green Time [s]	3	30	30	4	55	55	10	61	61
g / C, Green / Cycle	0.03	0.25	0.25	0.03	0.46	0.46	0.08	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.02	0.09	0.09	0.02	0.09	0.20	0.13	0.28	0.28
s, saturation flow rate [veh/h]	1846	1802	1773	1802	3603	1609	1802	1892	1880
c, Capacity [veh/h]	54	451	443	56	1641	733	145	955	949
d1, Uniform Delay [s]	57.83	37.06	37.06	57.23	19.64	22.21	55.18	20.58	20.58
k, delay calibration	0.04	0.50	0.50	0.11	0.50	0.50	0.22	0.40	0.40
l, 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]	7.84	2.20	2.24	7.09	0.28	1.89	290.90	1.91	1.92
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	0.76	0.36	0.36	0.51	0.21	0.44	1.62	0.56	0.56
d, Delay for Lane Group [s/veh]	65.67	39.25	39.30	64.32	19.92	24.10	346.08	22.48	22.51
Lane Group LOS	E	D	D	E	B	C	F	C	C
Critical Lane Group	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.36	4.14	4.08	0.96	2.78	6.21	15.97	10.22	10.17
50th-Percentile Queue Length [ft/ln]	34.08	103.40	102.05	23.95	69.58	155.20	399.15	255.57	254.27
95th-Percentile Queue Length [veh/ln]	2.45	7.44	7.35	1.72	5.01	10.29	25.84	15.47	15.40
95th-Percentile Queue Length [ft/ln]	61.35	186.12	183.68	43.10	125.25	257.35	646.04	386.66	385.03

Movement, Approach, & Intersection Results

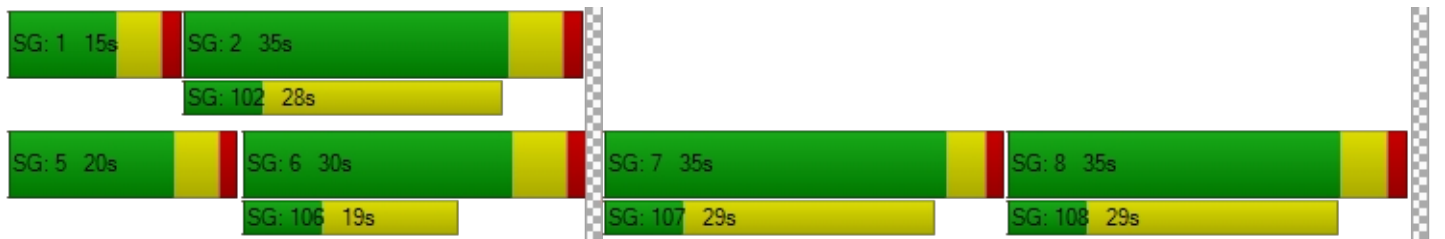
d_M, Delay for Movement [s/veh]	65.67	65.67	65.67	39.27	39.30	39.30	64.32	19.92	24.10	346.08	22.49	22.51
Movement LOS	E	E	E	D	D	D	E	B	C	F	C	C
d_A, Approach Delay [s/veh]	65.67			39.28			23.74			80.47		
Approach LOS	E			D			C			F		
d_I, Intersection Delay [s/veh]	58.07											
Intersection LOS	E											
Intersection V/C	0.440											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	1.787	2.392	3.163	2.846
Crosswalk LOS	A	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	502	490	478	395
d_b, Bicycle Delay [s]	33.68	34.20	34.73	38.64
I_b,int, Bicycle LOS Score for Intersection	1.634	2.132	2.227	2.653
Bicycle LOS	A	B	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 10: Damonte Ranch Pkwy / Double R Blvd

Control Type:	Signalized	Delay (sec / veh):	51.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.551

Intersection Setup

Name	Damonte Ranch Pkwy		Damonte Ranch Pkwy		Double R Blvd	
Approach	Northeastbound		Southwestbound		Southeastbound	
Lane Configuration	↔ ↑ ↑		↑ ↑		↔ ↔ ↔	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	1	1
Entry Pocket Length [ft]	415.00	100.00	100.00	100.00	225.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Damonte Ranch Pkwy		Damonte Ranch Pkwy		Double R Blvd	
Base Volume Input [veh/h]	560	961	633	217	416	772
Base Volume Adjustment Factor	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
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	87	0	232
Total Hourly Volume [veh/h]	560	961	633	130	416	540
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	152	261	172	35	113	147
Total Analysis Volume [veh/h]	609	1045	688	141	452	587
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing in	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		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]	0.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Overlap
Signal Group	7	4	8	0	2	1
Auxiliary Signal Groups						1,2,7
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	4	6	6	0	2	4
Maximum Green [s]	38	41	41	0	33	20
Amber [s]	3.9	4.8	4.8	0.0	3.0	3.9
All red [s]	1.5	1.5	1.5	0.0	1.0	1.5
Split [s]	40	75	35	0	30	15
Vehicle Extension [s]	3.0	3.0	3.0	0.0	1.0	3.0
Walk [s]	0	13	13	0	12	0
Pedestrian Clearance [s]	0	35	15	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	3.4	4.3	4.3	0.0	2.0	3.4
Minimum Recall	No	Yes	Yes		No	No
Maximum Recall	No	Yes	Yes		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	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
I, Upstream Filtering Factor	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	C	L	R
C, Cycle Length [s]	137	137	137	137	137	137
L, Total Lost Time per Cycle [s]	5.40	6.30	6.30	6.30	4.00	5.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.40	4.30	4.30	4.30	2.00	0.00
g_i, Effective Green Time [s]	38	84	41	41	33	88
g / C, Green / Cycle	0.28	0.62	0.30	0.30	0.24	0.65
(v / s)_i Volume / Saturation Flow Rate	0.18	0.21	0.16	0.16	0.13	0.21
s, saturation flow rate [veh/h]	3459	5094	3560	1716	3459	2813
c, Capacity [veh/h]	958	3134	1064	513	832	1816
d1, Uniform Delay [s]	43.51	12.77	39.89	40.17	45.49	145.37
k, delay calibration	0.11	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.71	0.29	1.81	4.02	0.21	0.04
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.64	0.33	0.52	0.54	0.54	0.32
d, Delay for Lane Group [s/veh]	44.22	13.05	41.70	44.19	45.69	145.41
Lane Group LOS	D	B	D	D	D	F
Critical Lane Group	Yes	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	8.95	4.94	7.84	8.19	6.62	16.51
50th-Percentile Queue Length [ft/ln]	223.82	123.50	195.89	204.84	165.40	412.64
95th-Percentile Queue Length [veh/ln]	13.86	8.58	12.43	12.89	10.83	23.17
95th-Percentile Queue Length [ft/ln]	346.50	214.62	310.65	322.20	270.86	579.21

Movement, Approach, & Intersection Results

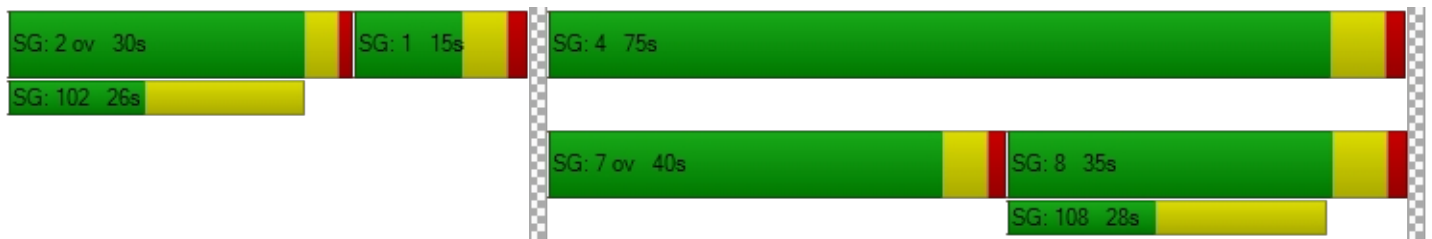
d_M, Delay for Movement [s/veh]	44.22	13.05	42.19	44.19	45.69	145.41
Movement LOS	D	B	D	D	D	F
d_A, Approach Delay [s/veh]	24.53		42.53		102.03	
Approach LOS	C		D		F	
d_I, Intersection Delay [s/veh]	51.63					
Intersection LOS	D					
Intersection V/C	0.551					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	16.0	17.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	45.07	44.20
I_p,int, Pedestrian LOS Score for Intersection	0.000	3.175	3.306
Crosswalk LOS	F	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1145	478	433
d_b, Bicycle Delay [s]	10.97	34.73	36.82
I_b,int, Bicycle LOS Score for Intersection	2.469	2.063	1.560
Bicycle LOS	B	B	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-






Intersection Level Of Service Report

Intersection 11: Steamboat Pkwy / Damonte Ranch Pkwy

Control Type:	Signalized	Delay (sec / veh):	3.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.428

Intersection Setup

Name	Damonte Ranch Pkwy		Damonte Ranch Pkwy		Steamboat Pkwy	
Approach	Northbound		Westbound		Southeastbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	2	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	250.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00		45.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Damonte Ranch Pkwy		Damonte Ranch Pkwy		Steamboat Pkwy	
Base Volume Input [veh/h]	3	8	2	710	1207	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	4	0	213	0	0
Total Hourly Volume [veh/h]	3	4	2	497	1207	9
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	1	140	339	3
Total Analysis Volume [veh/h]	3	4	2	558	1356	10
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing in	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
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]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Overlap	Protected	Permissive
Signal Group	2	0	3	8	1	6
Auxiliary Signal Groups				1,8		
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	4	0	4	4	6	6
Maximum Green [s]	15	0	15	15	30	15
Amber [s]	4.3	0.0	3.5	3.5	4.3	4.3
All red [s]	1.5	0.0	0.5	0.5	1.5	1.5
Split [s]	17	0	15	30	63	80
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	3.0
Walk [s]	7	0	7	5	0	7
Pedestrian Clearance [s]	4	0	18	10	0	21
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.8	0.0	2.0	2.0	3.8	3.8
Minimum Recall	No		No	No	Yes	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	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
I, Upstream Filtering Factor	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	C	C	L	R	L	C
C, Cycle Length [s]	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.80	5.80	4.00	5.80	5.80	5.80
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.80	3.80	2.00	0.00	3.80	3.80
g_i, Effective Green Time [s]	1	1	6	98	87	94
g / C, Green / Cycle	0.01	0.01	0.06	0.89	0.79	0.85
(v / s)_i Volume / Saturation Flow Rate	0.00	0.00	0.00	0.20	0.39	0.00
s, saturation flow rate [veh/h]	1885	1602	1795	2836	3486	3589
c, Capacity [veh/h]	14	12	104	2516	2765	3062
d1, Uniform Delay [s]	54.26	54.31	48.86	0.87	3.85	1.19
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.88	16.76	0.07	0.20	0.62	0.00
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.22	0.35	0.02	0.22	0.49	0.00
d, Delay for Lane Group [s/veh]	62.14	71.07	48.93	1.07	4.47	1.19
Lane Group LOS	E	E	D	A	A	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.11	0.16	0.05	0.07	3.78	0.01
50th-Percentile Queue Length [ft/ln]	2.76	4.03	1.32	1.78	94.59	0.18
95th-Percentile Queue Length [veh/ln]	0.20	0.29	0.09	0.13	6.81	0.01
95th-Percentile Queue Length [ft/ln]	4.96	7.26	2.37	3.20	170.26	0.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.14	71.07	48.93	1.07	4.47	1.19
Movement LOS	E	E	D	A	A	A
d_A, Approach Delay [s/veh]	67.25		1.24		4.45	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	3.75					
Intersection LOS	A					
Intersection V/C	0.428					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.55	44.55	44.55
I_p,int, Pedestrian LOS Score for Intersection	2.155	3.237	2.868
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	204	200	1349
d_b, Bicycle Delay [s]	44.37	44.55	5.83
I_b,int, Bicycle LOS Score for Intersection	1.569	1.560	2.687
Bicycle LOS	A	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 12: Veterans Pkwy / Steamboat Pkwy

Control Type:	Signalized	Delay (sec / veh):	32.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.612

Intersection Setup

Name	Veterans Pkwy			Veterans Pkwy			Steamboat Pkwy			Steamboat Pkwy		
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	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	200.00	100.00	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]	45.00			45.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Veterans Pkwy			Veterans Pkwy			Steamboat Pkwy			Steamboat Pkwy		
Base Volume Input [veh/h]	262	377	68	115	437	163	199	629	576	44	351	23
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 [%]	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
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	35	0	0	85	0	0	173	0	0	12
Total Hourly Volume [veh/h]	262	377	33	115	437	78	199	629	403	44	351	11
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	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]	68	98	9	30	114	20	52	164	105	11	91	3
Total Analysis Volume [veh/h]	273	393	34	120	455	81	207	655	420	46	366	11
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			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]	20.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	5	2	0	1	6	6	7	4	4	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	4	0	4	4	4	4	6	6	4	6	0
Maximum Green [s]	30	30	0	15	30	30	15	30	30	15	30	0
Amber [s]	3.9	4.8	0.0	3.9	4.8	4.8	3.9	4.8	4.8	3.2	4.8	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0
Split [s]	22	32	0	20	30	30	30	53	53	15	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	7	0	7	0
Pedestrian Clearance [s]	0	17	0	0	15	15	0	23	23	0	23	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]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.4	4.3	0.0	3.4	4.3	4.3	3.4	4.3	4.3	2.7	4.3	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	Yes	
Maximum Recall	No	No		No	No		Yes	Yes		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	R	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30
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	0.00
l2, Clearance Lost Time [s]	0.00	4.30	4.30	0.00	4.30	4.30	0.00	4.30	4.30	0.00	4.30	4.30
g_i, Effective Green Time [s]	40	27	27	40	18	18	67	59	59	67	47	47
g / C, Green / Cycle	0.34	0.23	0.23	0.34	0.15	0.15	0.56	0.49	0.49	0.56	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.20	0.11	0.11	0.10	0.13	0.05	0.17	0.35	0.26	0.05	0.10	0.10
s, saturation flow rate [veh/h]	1374	1889	1837	1199	3598	1606	1231	1889	1606	875	1889	1870
c, Capacity [veh/h]	436	428	416	396	542	242	707	933	793	364	736	729
d1, Uniform Delay [s]	32.48	40.54	40.55	29.06	49.56	45.59	13.53	23.54	20.82	16.76	24.85	24.86
k, delay calibration	0.22	0.11	0.11	0.23	0.11	0.11	0.50	0.50	0.50	0.11	0.11	0.11
l, 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
d2, Incremental Delay [s]	3.03	0.92	0.95	0.90	3.57	0.81	1.05	4.40	2.52	0.15	0.18	0.19
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.63	0.51	0.51	0.30	0.84	0.33	0.29	0.70	0.53	0.13	0.26	0.26
d, Delay for Lane Group [s/veh]	35.51	41.47	41.51	29.96	53.12	46.39	14.58	27.94	23.35	16.91	25.04	25.05
Lane Group LOS	D	D	D	C	D	D	B	C	C	B	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.35	5.54	5.40	2.49	6.72	2.17	2.91	14.93	8.38	0.56	3.66	3.64
50th-Percentile Queue Length [ft/ln]	158.75	138.43	135.01	62.23	167.88	54.14	72.81	373.23	209.46	14.05	91.52	90.92
95th-Percentile Queue Length [veh/ln]	10.48	9.40	9.21	4.48	10.96	3.90	5.24	21.27	13.13	1.01	6.59	6.55
95th-Percentile Queue Length [ft/ln]	262.07	234.90	230.29	112.01	274.12	97.45	131.06	531.65	328.14	25.28	164.73	163.66

Movement, Approach, & Intersection Results

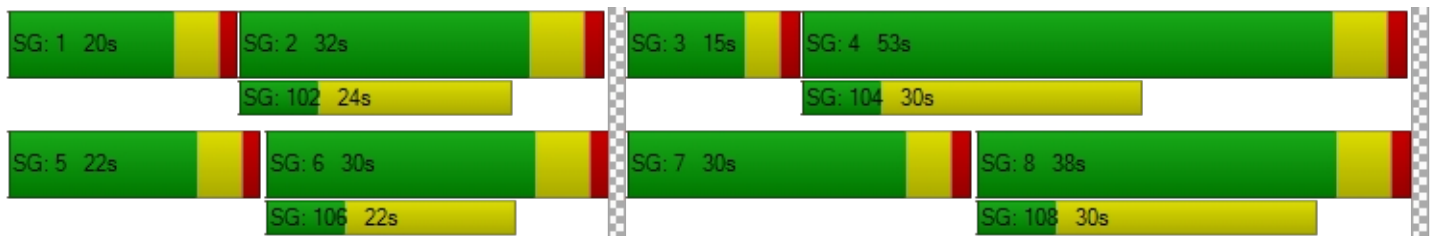
d_M, Delay for Movement [s/veh]	35.51	41.49	41.51	29.96	53.12	46.39	14.58	27.94	23.35	16.91	25.04	25.05
Movement LOS	D	D	D	C	D	D	B	C	C	B	C	C
d_A, Approach Delay [s/veh]	39.16			48.05			24.28			24.16		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	32.76											
Intersection LOS	C											
Intersection V/C	0.612											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	2.932	3.040	3.139	2.567
Crosswalk LOS	C	C	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	428	395	778	528
d_b, Bicycle Delay [s]	37.05	38.64	22.39	32.49
I_b,int, Bicycle LOS Score for Intersection	2.166	2.171	3.960	1.918
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 13: Rio Wrangler Pkwy / Steamboat Pkwy

Control Type:	All-way stop	Delay (sec / veh):	11.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.459

Intersection Setup

Name	Rio Wrangler Pkwy			Rio Wrangler Pkwy			Steamboat Pkwy			Steamboat Pkwy		
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	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	100.00	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]	45.00			45.00			45.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Rio Wrangler Pkwy			Rio Wrangler Pkwy			Steamboat Pkwy			Steamboat Pkwy		
Base Volume Input [veh/h]	162	12	1	1	6	92	184	28	306	2	9	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 [%]	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
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]	162	12	1	1	6	92	184	28	306	2	9	0
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
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]	46	3	0	0	2	26	52	8	86	1	3	0
Total Analysis Volume [veh/h]	182	13	1	1	7	103	207	31	344	2	10	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	533	581	602	599	654	750	532
Degree of Utilization, x	0.34	0.02	0.18	0.35	0.05	0.46	0.02

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.50	0.07	0.67	1.54	0.15	2.43	0.07
95th-Percentile Queue Length [ft]	37.52	1.85	16.76	38.38	3.73	60.73	1.73
Approach Delay [s/veh]	12.62		10.32	11.47			9.93
Approach LOS	B		B	B			A
Intersection Delay [s/veh]	11.56						
Intersection LOS	B						

Intersection Level Of Service Report

Intersection 14: Rio Wrangler Pkwy / McCauley Ranch Blvd

Control Type:	Two-way stop	Delay (sec / veh):	11.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name	Rio Wrangler Pkwy		Rio Wrangler Pkwy		MCCauley Ranch Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↩↪		↪↩		↩↪	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	110.00	100.00	125.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00		45.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Rio Wrangler Pkwy		Rio Wrangler Pkwy		MCCauley Ranch Blvd	
Base Volume Input [veh/h]	108	20	63	142	11	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.50	1.50	1.50	1.50	1.50	1.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	20	63	142	11	44
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	6	18	39	3	12
Total Analysis Volume [veh/h]	120	22	70	158	12	49
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.05	0.00	0.02	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	7.62	0.00	11.52	9.07
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.15	0.00	0.07	0.17
95th-Percentile Queue Length [ft/ln]	0.00	0.00	3.82	0.00	1.63	4.15
d_A, Approach Delay [s/veh]	0.00		2.34		9.56	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.59					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 15: S. Virginia St / Geiger Grade Rd

Control Type:	Signalized	Delay (sec / veh):	26.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.546

Intersection Setup

Name	Geiger Grade Rd			Mt. Rose Hwy			S. Virginia St			S. Virginia St		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
Lane Configuration	1 1 1			1 1 1 1			1 1 1 1			1 1 1 1		
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	1	2	0	1	2	0	1	2	0	0
Entry Pocket Length [ft]	350.00	100.00	700.00	725.00	100.00	250.00	525.00	100.00	100.00	600.00	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]	35.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Geiger Grade Rd			Mt. Rose Hwy			S. Virginia St			S. Virginia St		
Base Volume Input [veh/h]	99	353	482	130	501	61	33	253	131	938	472	146
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 [%]	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
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	145	0	0	32	0	0	68	0	0	76
Total Hourly Volume [veh/h]	99	353	337	130	501	29	33	253	63	938	472	70
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
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]	26	94	90	35	133	8	9	67	17	249	126	19
Total Analysis Volume [veh/h]	105	376	359	138	533	31	35	269	67	998	502	74
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	0	3	8	0	5	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	5	5	5	5
Maximum Green [s]	30	35	0	20	35	0	25	40	40	40	40	40
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	5.0	5.0	4.0	5.0	5.0
All red [s]	1.0	1.5	0.0	1.5	1.5	0.0	1.0	2.0	2.0	2.0	2.0	2.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	7
Pedestrian Clearance [s]	0	28	0	0	28	0	0	18	18	0	18	18
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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	3.5	0.0	3.5	3.5	0.0	3.0	5.0	5.0	4.0	5.0	5.0
Minimum Recall	No	No		No	No		No	Yes		No	Yes	
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	L	C	L	C	R	L	C	R
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	5.00	5.50	5.50	5.50	5.00	7.00	7.00	6.00	7.00	7.00
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
l2, Clearance Lost Time [s]	3.00	3.50	3.50	3.50	3.00	5.00	5.00	4.00	5.00	5.00
g_i, Effective Green Time [s]	6	14	5	14	3	7	7	25	30	30
g / C, Green / Cycle	0.08	0.19	0.07	0.18	0.03	0.09	0.09	0.34	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.06	0.10	0.04	0.15	0.01	0.05	0.04	0.29	0.10	0.05
s, saturation flow rate [veh/h]	1794	3586	3484	3586	3484	5131	1601	3484	5131	1601
c, Capacity [veh/h]	139	684	228	664	121	455	142	1171	2070	646
d1, Uniform Delay [s]	33.98	27.51	34.20	29.32	35.39	32.95	32.58	23.22	14.83	14.03
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.05	0.69	2.59	2.32	1.31	1.22	2.42	1.87	0.06	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	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
PF, progression factor	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	0.76	0.55	0.61	0.80	0.29	0.59	0.47	0.85	0.24	0.11
d, Delay for Lane Group [s/veh]	42.04	28.20	36.79	31.65	36.69	34.17	35.00	25.09	14.89	14.11
Lane Group LOS	D	C	D	C	D	C	C	C	B	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.11	2.96	1.23	4.42	0.31	1.51	1.17	7.49	1.66	0.70
50th-Percentile Queue Length [ft/ln]	52.72	73.92	30.64	110.41	7.87	37.79	29.36	187.30	41.44	17.56
95th-Percentile Queue Length [veh/ln]	3.80	5.32	2.21	7.86	0.57	2.72	2.11	11.98	2.98	1.26
95th-Percentile Queue Length [ft/ln]	94.90	133.06	55.16	196.57	14.16	68.03	52.85	299.53	74.59	31.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.04	28.20	0.00	36.79	31.65	0.00	36.69	34.17	35.00	25.09	14.89	14.11
Movement LOS	D	C		D	C		D	C	C	C	B	B
d_A, Approach Delay [s/veh]	31.22			32.70			34.56			21.32		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	26.91											
Intersection LOS	C											
Intersection V/C	0.546											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	69.38			69.38			69.38			69.38		
I_p,int, Pedestrian LOS Score for Intersection	2.887			2.879			3.143			3.319		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	438			438			500			500		
d_b, Bicycle Delay [s]	48.83			48.83			45.00			45.00		
I_b,int, Bicycle LOS Score for Intersection	1.956			2.113			1.801			2.467		
Bicycle LOS	A			B			A			B		

Sequence

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



MOVEMENT SUMMARY

 Site: Geiger/Veterans PM

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Geiger Grade											
3	L2	426	1.0	0.498	16.3	LOS C	2.3	59.1	0.71	0.78	29.1
8	T1	19	1.0	0.498	16.3	LOS C	2.3	59.1	0.71	0.78	29.2
18	R2	67	1.0	0.498	16.3	LOS C	2.3	59.1	0.71	0.78	28.3
Approach		511	1.0	0.498	16.3	LOS C	2.3	59.1	0.71	0.78	29.0
East: Veterans Pkwy											
1	L2	121	1.0	0.441	10.7	LOS B	1.7	43.7	0.53	0.56	32.7
6	T1	544	1.0	0.441	10.6	LOS B	1.7	43.7	0.52	0.54	33.0
16	R2	6	1.0	0.441	10.5	LOS B	1.7	41.6	0.51	0.53	32.3
Approach		671	1.0	0.441	10.6	LOS B	1.7	43.7	0.52	0.54	33.0
North: Private Access											
7	L2	31	1.0	0.254	10.6	LOS B	0.7	17.8	0.61	0.61	33.0
4	T1	33	1.0	0.254	10.6	LOS B	0.7	17.8	0.61	0.61	32.6
14	R2	67	1.0	0.254	10.6	LOS B	0.7	17.8	0.61	0.61	31.5
Approach		131	1.0	0.254	10.6	LOS B	0.7	17.8	0.61	0.61	32.1
West: Veterans Pkwy											
5	L2	80	1.0	0.798	21.3	LOS C	10.0	252.5	0.82	0.72	29.0
2	T1	660	1.0	0.798	21.3	LOS C	10.0	252.5	0.82	0.72	28.7
12	R2	737	1.0	0.795	21.0	LOS C	9.9	248.3	0.81	0.71	27.8
Approach		1478	1.0	0.798	21.1	LOS C	10.0	252.5	0.82	0.72	28.3
All Vehicles		2792	1.0	0.798	17.2	LOS C	10.0	252.5	0.72	0.68	29.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

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 HCM 2010).

Roundabout Capacity Model: US HCM 2010.

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 1: S. Virginia St / I-580 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	160.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.266

Intersection Setup

Name	S. Virginia St			S. Virginia St			North On-Ramp			North Off-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				r						r		
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	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	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]	45.00			45.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	S. Virginia St			S. Virginia St			North On-Ramp			North Off-Ramp		
Base Volume Input [veh/h]	0	1022	0	0	0	0	0	0	0	0	0	584
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	2.70	2.00	2.00	2.70	2.70	2.00	2.00	2.00	2.00	2.00	2.70
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	1022	0	0	0	0	0	0	0	0	0	584
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	269	0	0	0	0	0	0	0	0	0	154
Total Analysis Volume [veh/h]	0	1076	0	0	0	0	0	0	0	0	0	615
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	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	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.27
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	160.63
Movement LOS		A			A	A						F
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.28
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	631.97
d_A, Approach Delay [s/veh]	0.00			0.00			0.00			160.63		
Approach LOS	A			A			A			F		
d_I, Intersection Delay [s/veh]	58.42											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Double R Blvd / Sandhill Rd

Control Type:	Signalized	Delay (sec / veh):	12.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.391

Intersection Setup

Name	Double R Blvd			Double R Blvd			Sandhill Rd			Sandhill 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	0	0	0	1	0	0
Entry Pocket Length [ft]	150.00	100.00	100.00	150.00	100.00	100.00	100.00	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]	45.00			45.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Double R Blvd			Double R Blvd			Sandhill Rd			Sandhill Rd		
Base Volume Input [veh/h]	129	775	210	69	565	10	5	20	32	41	39	54
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 [%]	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90
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	112	0	0	5	0	0	17	0	0	28
Total Hourly Volume [veh/h]	129	775	98	69	565	5	5	20	15	41	39	26
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	34	204	26	18	149	1	1	5	4	11	10	7
Total Analysis Volume [veh/h]	136	816	103	73	595	5	5	21	16	43	41	27
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	70
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]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	16	22	0	16	22	0	0	32	0	0	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	11	0	0	21	0	0	21	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]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	L	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	49	49	4	46	46	5	5	5
g / C, Green / Cycle	0.11	0.70	0.70	0.06	0.66	0.66	0.07	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.09	0.28	0.28	0.05	0.18	0.18	0.06	0.04	0.04
s, saturation flow rate [veh/h]	1578	1657	1593	1578	1657	1652	683	1215	1549
c, Capacity [veh/h]	170	1164	1119	92	1083	1080	104	108	105
d1, Uniform Delay [s]	30.56	4.32	4.32	32.58	5.14	5.14	31.38	31.85	31.88
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11
l, 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]	8.44	1.04	1.08	13.75	0.64	0.64	2.53	2.35	6.58
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	0.80	0.40	0.40	0.79	0.28	0.28	0.41	0.40	0.65
d, Delay for Lane Group [s/veh]	39.00	5.36	5.40	46.33	5.77	5.78	33.91	34.20	38.46
Lane Group LOS	D	A	A	D	A	A	C	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.45	1.77	1.71	1.48	1.35	1.34	0.72	0.75	1.26
50th-Percentile Queue Length [ft/ln]	61.36	44.22	42.84	37.10	33.67	33.60	18.06	18.67	31.55
95th-Percentile Queue Length [veh/ln]	4.42	3.18	3.08	2.67	2.42	2.42	1.30	1.34	2.27
95th-Percentile Queue Length [ft/ln]	110.44	79.59	77.12	66.78	60.61	60.48	32.52	33.61	56.79

Movement, Approach, & Intersection Results

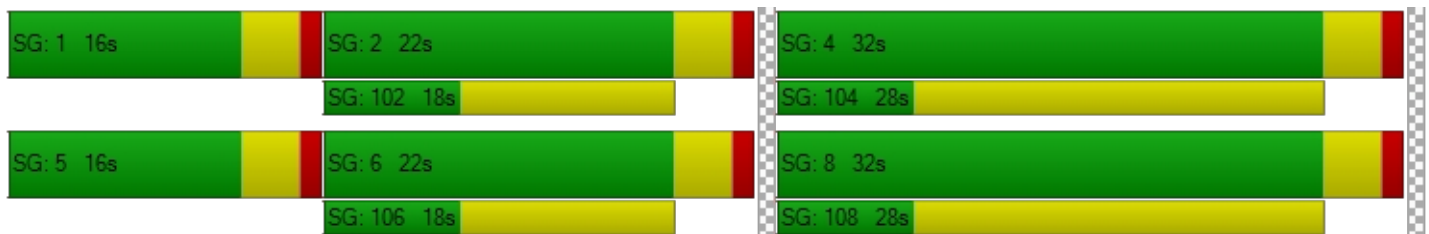
d_M, Delay for Movement [s/veh]	39.00	5.38	5.40	46.33	5.77	5.78	33.91	33.91	33.91	34.20	38.46	38.46
Movement LOS	D	A	A	D	A	A	C	C	C	C	D	D
d_A, Approach Delay [s/veh]	9.71			10.17			33.91			36.81		
Approach LOS	A			B			C			D		
d_I, Intersection Delay [s/veh]	12.02											
Intersection LOS	B											
Intersection V/C	0.391											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	3.044			2.755			1.865			2.136		
Crosswalk LOS	C			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	514			514			800			800		
d_b, Bicycle Delay [s]	19.31			19.31			12.60			12.60		
I_b,int, Bicycle LOS Score for Intersection	2.522			2.119			1.657			1.789		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report
Intersection 3: S. Meadows Pkwy / Gateway Dr

Control Type:	Signalized	Delay (sec / veh):	36.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.740

Intersection Setup

Name	Gateway Dr			Gateway Dr			S. Meadows Pkwy			S. Meadows Pkwy		
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	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	40.00	100.00	100.00	100.00	100.00	100.00	200.00	100.00	100.00	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]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Gateway Dr			Gateway Dr			S. Meadows Pkwy			S. Meadows Pkwy		
Base Volume Input [veh/h]	55	45	83	111	25	175	587	1581	30	72	1156	120
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 [%]	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
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	43	0	0	93	0	0	16	0	0	62
Total Hourly Volume [veh/h]	55	45	40	111	25	82	587	1581	14	72	1156	58
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	14	12	11	29	7	22	154	416	4	19	304	15
Total Analysis Volume [veh/h]	58	47	42	117	26	86	618	1664	15	76	1217	61
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	135
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	4	0	0	4	0	6	8	0	6	12	0
Maximum Green [s]	0	20	0	0	30	0	35	35	0	20	35	0
Amber [s]	0.0	3.0	0.0	0.0	3.4	0.0	3.9	4.8	0.0	3.2	4.1	0.0
All red [s]	0.0	1.5	0.0	0.0	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	0	45	0	0	45	0	45	65	0	25	45	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	8	0	0	8	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	29	0	0	28	0	0	14	0	0	16	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.5	0.0	0.0	2.9	0.0	3.4	4.3	0.0	2.7	3.6	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	Yes		No	Yes	
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

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	135	135	135	135	135	135	135	135	135	135
L, Total Lost Time per Cycle [s]	4.50	4.50	4.90	4.90	5.40	6.30	6.30	4.70	5.60	5.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.50	2.90	2.90	3.40	4.30	4.30	2.70	3.60	3.60
g_i, Effective Green Time [s]	25	25	25	25	49	87	87	7	46	46
g / C, Green / Cycle	0.19	0.19	0.18	0.18	0.36	0.65	0.65	0.05	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.04	0.05	0.16	0.05	0.35	0.31	0.31	0.04	0.24	0.24
s, saturation flow rate [veh/h]	1421	1725	919	1588	1780	3558	1860	1780	3558	1823
c, Capacity [veh/h]	59	319	216	289	645	2298	1201	97	1202	616
d1, Uniform Delay [s]	65.11	47.27	57.81	47.74	42.02	12.26	12.27	63.04	38.81	38.82
k, delay calibration	0.11	0.11	0.45	0.11	0.34	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	48.51	0.47	13.52	0.57	20.63	0.72	1.38	12.98	3.46	6.60
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
Rp, platoon ratio	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

Lane Group Results

X, volume / capacity	0.98	0.28	0.66	0.30	0.96	0.48	0.48	0.79	0.70	0.70
d, Delay for Lane Group [s/veh]	113.62	47.74	71.32	48.31	62.65	12.98	13.65	76.02	42.27	45.42
Lane Group LOS	F	D	E	D	E	B	B	E	D	D
Critical Lane Group	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.47	2.66	5.64	2.59	23.39	8.35	8.97	2.92	12.61	13.47
50th-Percentile Queue Length [ft/ln]	61.83	66.49	141.05	64.81	584.64	208.75	224.22	72.92	315.34	336.69
95th-Percentile Queue Length [veh/ln]	4.45	4.79	9.54	4.67	31.32	13.09	13.88	5.25	18.44	19.49
95th-Percentile Queue Length [ft/ln]	111.30	119.68	238.43	116.65	782.91	327.23	347.01	131.26	460.95	487.16

Movement, Approach, & Intersection Results

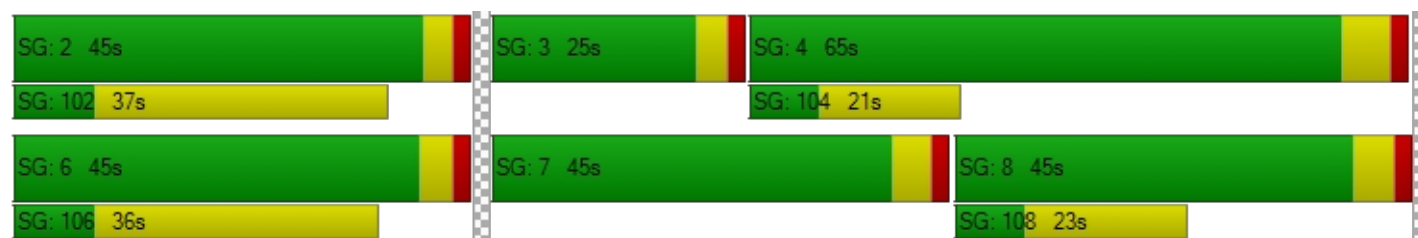
d_M, Delay for Movement [s/veh]	113.62	47.74	47.74	71.32	71.32	48.31	62.65	13.21	13.65	76.02	43.23	45.42
Movement LOS	F	D	D	E	E	D	E	B	B	E	D	D
d_A, Approach Delay [s/veh]	73.73			62.68			26.51			45.17		
Approach LOS	E			E			C			D		
d_I, Intersection Delay [s/veh]	36.57											
Intersection LOS	D											
Intersection V/C	0.740											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			12.0			12.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	56.95			56.95			56.03			56.03		
I_p,int, Pedestrian LOS Score for Intersection	2.108			2.393			3.325			3.401		
Crosswalk LOS	B			B			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			594			870			584		
d_b, Bicycle Delay [s]	33.08			33.36			21.56			33.85		
I_b,int, Bicycle LOS Score for Intersection	1.873			2.091			2.832			2.338		
Bicycle LOS	A			B			C			B		

Sequence

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



Intersection Level Of Service Report
Intersection 4: S. Meadows Pkwy / Double R Blvd

Control Type:	Signalized	Delay (sec / veh):	43.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.598

Intersection Setup

Name	Double R Blvd			Double R Blvd			S. Meadows Pkwy			S. Meadows Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
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	2	0	1	2	0	1	2	0	0	2	0	0
Entry Pocket Length [ft]	250.00	100.00	275.00	225.00	100.00	450.00	315.00	100.00	100.00	225.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
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	49.21
Speed [mph]	35.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Double R Blvd			Double R Blvd			S. Meadows Pkwy			S. Meadows Pkwy		
Base Volume Input [veh/h]	228	465	51	106	335	204	727	469	558	181	809	147
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 [%]	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70
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	25	0	0	61	0	0	123	0	0	54
Total Hourly Volume [veh/h]	228	465	26	106	335	143	727	469	558	181	809	147
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	60	122	7	28	88	38	191	123	147	48	213	39
Total Analysis Volume [veh/h]	240	489	27	112	353	151	765	494	587	191	852	155
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	135
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	5.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	6	0	4	6	0	6	10	0	6	10	0
Maximum Green [s]	25	30	0	25	30	0	35	35	0	16	35	0
Amber [s]	3.9	4.8	0.0	3.9	4.8	0.0	3.2	4.1	0.0	3.2	4.1	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	23	41	0	25	43	0	34	44	0	25	35	0
Vehicle Extension [s]	2.5	2.5	0.0	2.5	2.5	0.0	2.5	3.0	0.0	2.0	3.0	0.0
Walk [s]	0	8	0	0	8	0	0	7	0	0	9	0
Pedestrian Clearance [s]	0	25	0	0	25	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.4	4.3	0.0	3.4	4.3	0.0	2.7	3.6	0.0	2.7	3.6	0.0
Minimum Recall	No	No		No	No		Yes	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
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	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	135	135	135	135	135	135	135	135	135	135	135	135
L, Total Lost Time per Cycle [s]	5.40	6.30	6.30	5.40	6.30	6.30	4.70	5.60	5.60	4.70	5.60	5.60
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	0.00
l2, Clearance Lost Time [s]	3.40	4.30	4.30	3.40	4.30	4.30	2.70	3.60	3.60	2.70	3.60	3.60
g_i, Effective Green Time [s]	12	21	21	6	16	16	33	76	76	10	53	53
g / C, Green / Cycle	0.09	0.16	0.16	0.05	0.12	0.12	0.24	0.56	0.56	0.07	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.07	0.14	0.02	0.03	0.10	0.10	0.22	0.14	0.37	0.06	0.19	0.19
s, saturation flow rate [veh/h]	3439	3540	1581	3439	3540	1581	3439	3540	1581	3439	3540	1717
c, Capacity [veh/h]	296	553	247	166	420	188	840	1988	888	244	1375	667
d1, Uniform Delay [s]	60.66	55.78	48.91	63.22	58.27	58.00	49.63	15.09	20.66	61.75	31.26	31.28
k, delay calibration	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.50	0.50	0.04	0.50	0.50
l, 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
d2, Incremental Delay [s]	4.00	3.69	0.14	3.48	3.44	5.93	3.26	0.30	3.86	2.11	1.27	2.61
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.81	0.88	0.11	0.67	0.84	0.80	0.91	0.25	0.66	0.78	0.49	0.49
d, Delay for Lane Group [s/veh]	64.66	59.48	49.06	66.70	61.70	63.94	52.89	15.39	24.52	63.85	32.53	33.89
Lane Group LOS	E	E	D	E	E	E	D	B	C	E	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.19	8.38	0.79	1.98	6.12	5.35	12.80	3.90	13.38	3.28	8.54	8.56
50th-Percentile Queue Length [ft/ln]	104.70	209.53	19.85	49.52	152.96	133.72	320.03	97.56	334.46	82.05	213.53	213.93
95th-Percentile Queue Length [veh/ln]	7.54	13.13	1.43	3.57	10.18	9.14	18.67	7.02	19.38	5.91	13.33	13.35
95th-Percentile Queue Length [ft/ln]	188.45	328.23	35.73	89.14	254.38	228.55	466.73	175.61	484.42	147.69	333.35	333.86

Movement, Approach, & Intersection Results

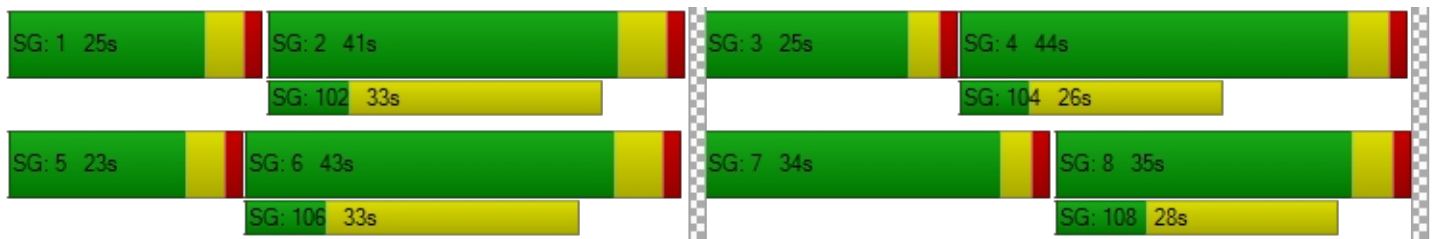
d_M, Delay for Movement [s/veh]	64.66	59.48	49.06	66.70	61.70	63.94	52.89	15.39	24.52	63.85	32.80	33.89
Movement LOS	E	E	D	E	E	E	D	B	C	E	C	C
d_A, Approach Delay [s/veh]	60.75			63.16			33.83			37.89		
Approach LOS	E			E			C			D		
d_I, Intersection Delay [s/veh]	43.63											
Intersection LOS	D											
Intersection V/C	0.598											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	13.0	12.0	12.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	56.95	55.13	56.03	56.03
I_p,int, Pedestrian LOS Score for Intersection	2.978	2.985	3.303	3.126
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	514	544	569	436
d_b, Bicycle Delay [s]	37.26	35.79	34.56	41.30
I_b,int, Bicycle LOS Score for Intersection	2.204	2.118	2.643	2.248
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 5: S. Meadows Pkwy / Double Diamond Pkwy

Control Type:	Signalized	Delay (sec / veh):	161.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.937

Intersection Setup

Name	S. Meadows Pkwy				S. Meadows Pkwy			Double Diamond Pkwy			Double Diamond Pkwy		
Approach	Northeastbound				Southwestbound			Northwestbound			Southeastbound		
Lane Configuration													
Turning Movement	U-tu	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	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	175.0	100.0	100.0	175.0	100.00	100.00	100.00	250.00	100.00	100.00	200.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	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	0.00
Speed [mph]	30.00				30.00			35.00			35.00		
Grade [%]	0.00				0.00			0.00			0.00		
Curb Present	No				No			No			No		
Crosswalk	Yes				Yes			Yes			Yes		

Volumes

Name	S. Meadows Pkwy				S. Meadows Pkwy			Double Diamond Pkwy			Double Diamond Pkwy		
	29	171	373	70	28	958	1167	205	321	43	239	94	45
Base Volume Input [veh/h]	29	171	373	70	28	958	1167	205	321	43	239	94	45
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40
Growth Factor	1.000	1.000	1.000	1.000	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	0
Site-Generated Trips [veh/h]	0	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	0
Pass-by Trips [veh/h]	0	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	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	36	0	0	350	0	0	22	0	0	23
Total Hourly Volume [veh/h]	29	171	373	34	28	958	817	205	321	21	239	94	22
Peak Hour Factor	0.950	0.950	0.950	0.950	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	45	98	9	7	252	215	54	84	6	63	25	6
Total Analysis Volume [veh/h]	31	180	393	36	29	1008	860	216	338	22	252	99	23
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	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0				0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0				0			0			0		
v_co, Outbound Pedestrian Volume crossing	0				0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0				0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0				0			0			0		
Bicycle Volume [bicycles/h]	0				0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Prote	Permi	Unsig	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups													
Lead / Lag	-	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	6	0	6	6	0	4	6	0	4	6	0
Maximum Green [s]	0	35	35	0	16	35	0	25	30	0	25	30	0
Amber [s]	0.0	3.2	4.1	0.0	3.2	4.1	0.0	3.3	4.2	0.0	3.3	4.2	0.0
All red [s]	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	2.5	3.0	0.0	2.0	3.0	0.0	2.5	2.5	0.0	2.5	2.5	0.0
Walk [s]	0	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	19	0	0	18	0	0	20	0	0	17	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	0.0
Rest In Walk			No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.7	3.6	0.0	2.7	3.6	0.0	2.8	3.7	0.0	2.8	3.7	0.0
Minimum Recall		No	Yes		No	Yes		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	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	97	97	97	97	97	97	97	97	97	97	97
L, Total Lost Time per Cycle [s]	4.70	5.60	4.70	5.60	5.60	4.80	5.70	5.70	4.80	5.70	5.70
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]	2.70	3.60	2.70	3.60	3.60	2.80	3.70	3.70	2.80	3.70	3.70
g_i, Effective Green Time [s]	14	45	3	35	35	14	12	12	16	14	14
g / C, Green / Cycle	0.14	0.47	0.03	0.36	0.36	0.14	0.12	0.12	0.16	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.12	0.11	0.02	0.51	0.58	0.12	0.10	0.10	0.14	0.05	0.01
s, saturation flow rate [veh/h]	1775	3549	1775	1864	1602	1775	1864	1824	1775	1864	1584
c, Capacity [veh/h]	250	1657	60	671	577	254	227	223	290	265	226
d1, Uniform Delay [s]	40.73	15.53	46.10	31.09	31.09	40.64	41.50	41.52	39.65	37.74	36.27
k, delay calibration	0.08	0.11	0.04	0.50	0.50	0.08	0.08	0.08	0.08	0.08	0.08
l, 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]	5.84	0.07	2.21	189.98	280.86	6.00	4.78	4.96	6.02	0.65	0.15
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	0.85	0.24	0.48	1.40	1.61	0.85	0.80	0.80	0.87	0.37	0.10
d, Delay for Lane Group [s/veh]	46.57	15.61	48.31	221.07	311.95	46.64	46.29	46.48	45.67	38.39	36.41
Lane Group LOS	D	B	D	F	F	D	D	D	D	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.26	2.55	0.72	50.47	57.92	5.34	4.44	4.37	6.20	2.14	0.48
50th-Percentile Queue Length [ft/ln]	131.52	63.77	17.98	1261.64	1448.11	133.47	110.94	109.26	154.88	53.48	11.90
95th-Percentile Queue Length [veh/ln]	9.02	4.59	1.29	75.58	90.05	9.13	7.89	7.80	10.28	3.85	0.86
95th-Percentile Queue Length [ft/ln]	225.56	114.79	32.37	1889.53	2251.21	228.21	197.32	194.97	256.92	96.26	21.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.57	46.57	15.61	0.00	48.31	227.07	311.95	46.64	46.38	46.48	45.67	38.39	36.41
Movement LOS	D	D	B		D	F	F	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	26.42				262.81			46.48			43.17		
Approach LOS	C				F			D			D		
d_I, Intersection Delay [s/veh]	161.53												
Intersection LOS	F												
Intersection V/C	0.937												

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0		11.0		11.0		11.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	49.50		49.50		49.50		49.50	
l_p,int, Pedestrian LOS Score for Intersection	2.883		3.384		2.383		2.830	
Crosswalk LOS	C		C		B		C	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	583		583		500		500	
d_b, Bicycle Delay [s]	30.10		30.10		33.75		33.75	
l_b,int, Bicycle LOS Score for Intersection	1.909		3.413		2.053		2.215	
Bicycle LOS	A		C		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 6: S. Meadows Pkwy / Wilbur May Pkwy

Control Type:	All-way stop	Delay (sec / veh):	459.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.619

Intersection Setup

Name	Wilbur May Pkwy		S. Meadows Pkwy		S. Meadows Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↵		↵	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	1	0
Entry Pocket Length [ft]	75.00	100.00	100.00	100.00	125.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Wilbur May Pkwy		S. Meadows Pkwy		S. Meadows Pkwy	
Base Volume Input [veh/h]	290	334	497	158	322	1861
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.80	2.80	2.80	2.80	2.80	2.80
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	290	334	497	158	322	1861
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	88	131	42	85	490
Total Analysis Volume [veh/h]	305	352	523	166	339	1959
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	305	352	345	345	356	980	980
Degree of Utilization, x	1.07	1.12	1.16	1.13	0.95	2.62	2.62

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	12.08	14.13	14.82	14.17	10.29	80.27	80.27
95th-Percentile Queue Length [ft]	301.98	353.25	370.38	354.16	257.19	2006.65	2006.65
Approach Delay [s/veh]	117.61		133.84		654.82		
Approach LOS	F		F		F		
Intersection Delay [s/veh]	459.46						
Intersection LOS	F						

Intersection Level Of Service Report
Intersection 7: S. Meadows Pkwy / Echo Valley Pkwy

Control Type:	Signalized	Delay (sec / veh):	27.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.708

Intersection Setup

Name	Echo Valley Pkwy						S. Meadows Pkwy			S. Meadows Pkwy		
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	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	275.00	100.00	275.00	150.00	100.00	150.00
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]	25.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Echo Valley Pkwy						S. Meadows Pkwy			S. Meadows Pkwy		
Base Volume Input [veh/h]	246	0	95	158	0	429	152	625	54	15	1508	101
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 [%]	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80
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	49	0	0	129	0	0	28	0	0	53
Total Hourly Volume [veh/h]	246	0	46	158	0	300	152	625	26	15	1508	48
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	65	0	12	42	0	79	40	164	7	4	397	13
Total Analysis Volume [veh/h]	259	0	48	166	0	316	160	658	27	16	1587	51
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			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]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Unsigna	Protecte	Permiss	Unsigna	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	32	0	9	32	0	16	70	0	9	63	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	21	0	0	14	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	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	R	L	C	L	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
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
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	24	15	15	24	15	14	82	2	70	70
g / C, Green / Cycle	0.20	0.12	0.12	0.20	0.12	0.12	0.69	0.02	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.19	0.00	0.03	0.12	0.00	0.10	0.21	0.01	0.50	0.04
s, saturation flow rate [veh/h]	1363	1672	1421	1363	1672	1593	3184	1593	3184	1421
c, Capacity [veh/h]	352	204	174	352	204	186	2182	28	1865	833
d1, Uniform Delay [s]	47.32	0.00	47.84	43.46	0.00	52.03	7.48	58.53	20.52	10.67
k, delay calibration	0.27	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.34	0.00	0.85	0.98	0.00	10.94	0.36	17.92	5.11	0.14
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
Rp, platoon ratio	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

Lane Group Results

X, volume / capacity	0.74	0.00	0.28	0.47	0.00	0.86	0.30	0.58	0.85	0.06
d, Delay for Lane Group [s/veh]	54.66	0.00	48.69	44.44	0.00	62.97	7.84	76.46	25.63	10.81
Lane Group LOS	D	A	D	D	A	E	A	E	C	B
Critical Lane Group	No	No	Yes	Yes	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.17	0.00	1.36	4.52	0.00	5.25	3.17	0.62	18.25	0.60
50th-Percentile Queue Length [ft/ln]	204.27	0.00	34.06	112.98	0.00	131.22	79.19	15.41	456.20	14.96
95th-Percentile Queue Length [veh/ln]	12.86	0.00	2.45	8.01	0.00	9.01	5.70	1.11	25.25	1.08
95th-Percentile Queue Length [ft/ln]	321.47	0.00	61.30	200.14	0.00	225.15	142.55	27.73	631.35	26.93

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.66	0.00	48.69	44.44	0.00	0.00	62.97	7.84	0.00	76.46	25.63	10.81
Movement LOS	D	A	D	D	A		E	A		E	C	B
d_A, Approach Delay [s/veh]	53.72			44.44			18.62			25.67		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	27.69											
Intersection LOS	C											
Intersection V/C	0.708											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.250	3.170	3.106
Crosswalk LOS	F	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	467	467	1100	983
d_b, Bicycle Delay [s]	35.27	35.27	12.15	15.50
I_b,int, Bicycle LOS Score for Intersection	2.147	1.834	2.234	2.968
Bicycle LOS	B	A	B	C

Sequence

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



Intersection Level Of Service Report
Intersection 8: Veterans Pkwy / Long Meadow Dr

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Veterans Pkwy			Long Meadow Dr			Veterans Pkwy			Long Meadow Dr		
Approach	Southbound			Westbound			Northeastbound			Southeastbound		
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	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	250.00	100.00	250.00	75.00	100.00	100.00	175.00	100.00	100.00	75.00	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]	45.00			25.00			45.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Veterans Pkwy			Long Meadow Dr			Veterans Pkwy			Long Meadow Dr		
Base Volume Input [veh/h]	99	1418	15	129	5	110	58	1589	148	15	5	116
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 [%]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
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]	99	1418	15	129	5	110	58	1589	148	15	5	116
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	26	373	4	34	1	29	15	418	39	4	1	31
Total Analysis Volume [veh/h]	104	1493	16	136	5	116	61	1673	156	16	5	122
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.33	0.01	0.00	0.00	1.65	0.43	0.14	0.02	0.00	0.00	1.86	0.35
d_M, Delay for Movement [s/veh]	21.61	0.00	0.00	10000.0	1776.11	602.30	14.67	0.00	0.00	10000.0	1990.06	658.15
Movement LOS	C	A	A	F	F	F	B	A	A	F	F	F
95th-Percentile Queue Length [veh/ln]	1.38	0.00	0.00	19.60	11.72	11.72	0.49	0.00	0.00	3.65	12.51	12.51
95th-Percentile Queue Length [ft/ln]	34.44	0.00	0.00	490.05	292.95	292.95	12.17	0.00	0.00	91.14	312.70	312.70
d_A, Approach Delay [s/veh]	1.39			5598.24			0.47			1749.97		
Approach LOS	A			F			A			F		
d_I, Intersection Delay [s/veh]	433.55											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 9: Double R Blvd / Double Diamond Pkwy

Control Type:	Signalized	Delay (sec / veh):	27.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.524

Intersection Setup

Name	Double Diamond Pkwy			Double Diamond Pkwy			Double R Blvd			Double R Blvd		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
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	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	200.00	100.00	200.00	275.00	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]	25.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Double Diamond Pkwy			Double Diamond Pkwy			Double R Blvd			Double R Blvd		
Base Volume Input [veh/h]	5	0	6	574	5	167	11	1023	176	30	564	5
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 [%]	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
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	3	0	0	87	0	0	92	0	0	3
Total Hourly Volume [veh/h]	5	0	3	574	5	80	11	1023	84	30	564	2
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	1	0	1	151	1	21	3	269	22	8	148	1
Total Analysis Volume [veh/h]	5	0	3	604	5	84	12	1077	88	32	594	2
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			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]	115.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	7	0	0	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	4	0	0	4	0	6	8	0	4	8	0
Maximum Green [s]	0	15	0	0	30	0	12	35	0	20	35	0
Amber [s]	0.0	3.4	0.0	0.0	4.1	0.0	3.9	4.8	0.0	3.9	4.8	0.0
All red [s]	0.0	1.5	0.0	0.0	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	0	35	0	0	35	0	20	35	0	15	30	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.5	0.0	3.0	3.0	0.0	2.5	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	22	0	0	21	0	0	12	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.9	0.0	0.0	3.6	0.0	3.4	4.3	0.0	3.4	4.3	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	Yes		No	Yes	
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

Lane Group Calculations

Lane Group	C	L	C	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.90	5.60	5.60	5.40	6.30	6.30	5.40	6.30	6.30
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
l2, Clearance Lost Time [s]	2.90	3.60	3.60	3.40	4.30	4.30	3.40	4.30	4.30
g_i, Effective Green Time [s]	1	26	26	2	68	68	3	68	68
g / C, Green / Cycle	0.01	0.22	0.22	0.02	0.56	0.56	0.02	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.00	0.20	0.20	0.01	0.30	0.06	0.02	0.16	0.16
s, saturation flow rate [veh/h]	1700	1777	1727	1777	3552	1586	1777	1865	1863
c, Capacity [veh/h]	15	390	379	30	2000	893	42	1063	1062
d1, Uniform Delay [s]	59.22	45.55	45.60	58.34	16.42	12.12	58.21	13.21	13.21
k, delay calibration	0.04	0.08	0.08	0.11	0.50	0.50	0.08	0.50	0.50
l, 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]	10.91	5.90	6.29	8.10	1.04	0.22	18.23	0.66	0.66
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	0.54	0.90	0.90	0.39	0.54	0.10	0.76	0.28	0.28
d, Delay for Lane Group [s/veh]	70.12	51.44	51.89	66.44	17.47	12.34	76.44	13.87	13.87
Lane Group LOS	E	D	D	E	B	B	E	B	B
Critical Lane Group	Yes	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.29	10.64	10.45	0.42	8.76	1.08	1.16	4.01	4.00
50th-Percentile Queue Length [ft/ln]	7.23	266.07	261.13	10.53	219.06	26.90	28.97	100.20	100.11
95th-Percentile Queue Length [veh/ln]	0.52	15.99	15.75	0.76	13.62	1.94	2.09	7.21	7.21
95th-Percentile Queue Length [ft/ln]	13.01	399.83	393.64	18.95	340.42	48.42	52.14	180.36	180.19

Movement, Approach, & Intersection Results

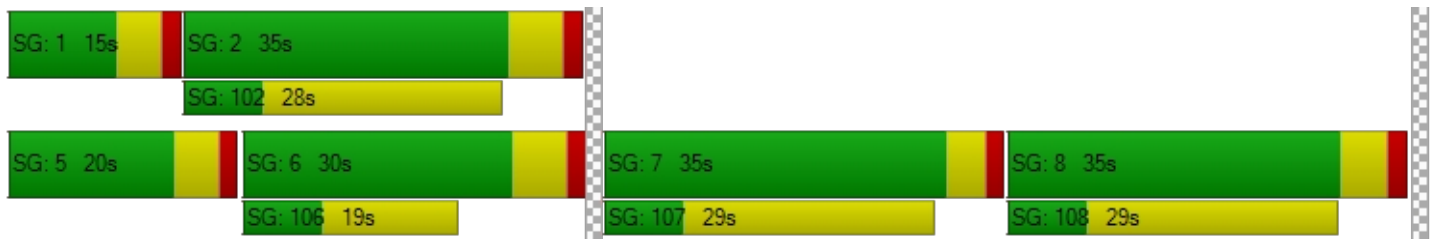
d_M, Delay for Movement [s/veh]	70.12	70.12	70.12	51.63	51.89	51.89	66.44	17.47	12.34	76.44	13.87	13.87
Movement LOS	E	E	E	D	D	D	E	B	B	E	B	B
d_A, Approach Delay [s/veh]	70.12			51.67			17.58			17.06		
Approach LOS	E			D			B			B		
d_I, Intersection Delay [s/veh]	27.04											
Intersection LOS	C											
Intersection V/C	0.524											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	1.746	2.454	3.200	2.869
Crosswalk LOS	A	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	502	490	478	395
d_b, Bicycle Delay [s]	33.68	34.20	34.73	38.64
I_b,int, Bicycle LOS Score for Intersection	1.578	2.847	2.607	2.080
Bicycle LOS	A	C	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 10: Damonte Ranch Pkwy / Double R Blvd

Control Type:	Signalized	Delay (sec / veh):	117.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.966

Intersection Setup

Name	Steamboat Pkwy			Damonte Ranch Pkwy			Northwestbound			Double R Blvd		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
Lane Configuration	1 0 0			2 0 0			1 0 0			1 0 2		
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	2	0	0	1	0	0	1	0	2
Entry Pocket Length [ft]	150.00	100.00	100.00	415.00	100.00	100.00	250.00	100.00	100.00	225.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	2	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	49.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			45.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Steamboat Pkwy			Damonte Ranch Pkwy						Double R Blvd		
Base Volume Input [veh/h]	11	1632	404	586	565	130	130	170	20	237	172	757
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	121	0	0	68	0	0	11	0	0	227
Total Hourly Volume [veh/h]	11	1632	283	586	565	62	130	170	9	237	172	530
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	3	429	74	154	149	16	34	45	2	62	45	139
Total Analysis Volume [veh/h]	12	1718	298	617	595	65	137	179	9	249	181	558
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		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing in		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			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]	75.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												1,6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lag	-	-
Minimum Green [s]	4	6	0	4	6	0	4	4	0	4	6	6
Maximum Green [s]	30	41	0	38	41	0	30	33	0	20	30	30
Amber [s]	3.9	4.8	0.0	3.9	4.8	0.0	3.9	4.8	0.0	3.9	4.8	4.8
All red [s]	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	1.5
Split [s]	10	44	0	23	57	0	37	40	0	13	16	16
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	1.0	0.0	3.0	3.0	3.0
Walk [s]	0	13	0	0	7	0	0	13	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	35	0	0	20	0	0	0	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.4	4.3	0.0	3.4	4.3	0.0	3.4	4.3	0.0	3.4	4.3	4.3
Minimum Recall	No	Yes		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	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	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.40	6.30	6.30	5.40	6.30	6.30	5.40	6.30	5.40	6.30	5.40
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]	3.40	4.30	4.30	3.40	4.30	4.30	3.40	4.30	3.40	4.30	3.85
g_i, Effective Green Time [s]	1	38	38	18	54	54	11	14	27	30	55
g / C, Green / Cycle	0.01	0.31	0.31	0.15	0.45	0.45	0.09	0.12	0.23	0.25	0.46
(v / s)_i Volume / Saturation Flow Rate	0.01	0.38	0.38	0.18	0.12	0.12	0.08	0.10	0.07	0.10	0.20
s, saturation flow rate [veh/h]	1781	3560	1733	3459	3560	1777	1781	1854	3459	1870	2813
c, Capacity [veh/h]	20	1113	542	514	1603	800	166	216	786	468	1291
d1, Uniform Delay [s]	59.08	41.24	41.24	51.08	20.69	20.69	53.42	52.13	38.62	37.36	174.41
k, delay calibration	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.04	0.11	0.11	0.11
l, 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]	26.76	104.58	117.85	94.06	0.09	0.18	9.68	4.19	0.23	0.52	0.24
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	0.61	1.21	1.23	1.20	0.27	0.27	0.82	0.87	0.32	0.39	0.43
d, Delay for Lane Group [s/veh]	85.84	145.82	159.09	145.14	20.78	20.87	63.10	56.32	38.85	37.88	174.65
Lane Group LOS	F	F	F	F	C	C	E	E	D	D	F
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.51	32.37	33.51	14.23	3.73	3.75	4.50	5.81	3.00	4.36	15.45
50th-Percentile Queue Length [ft/ln]	12.74	809.34	837.76	355.63	93.20	93.64	112.62	145.25	75.04	109.03	386.18
95th-Percentile Queue Length [veh/ln]	0.92	46.89	48.64	22.09	6.71	6.74	7.99	9.76	5.40	7.79	21.89
95th-Percentile Queue Length [ft/ln]	22.94	1172.25	1216.06	552.33	167.76	168.55	199.64	244.08	135.08	194.65	547.32

Movement, Approach, & Intersection Results

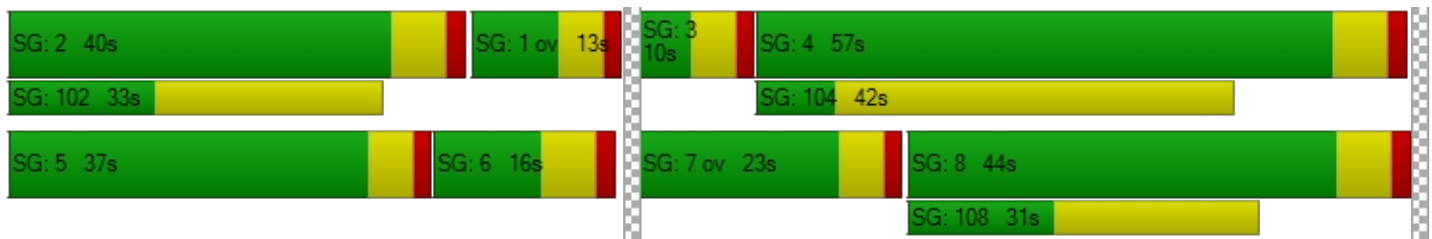
d_M, Delay for Movement [s/veh]	85.84	148.66	159.09	145.14	20.80	20.87	63.10	56.32	56.32	38.85	37.88	174.65
Movement LOS	F	F	F	F	C	C	E	E	E	D	D	F
d_A, Approach Delay [s/veh]	149.82			80.88			59.18			115.37		
Approach LOS	F			F			E			F		
d_I, Intersection Delay [s/veh]	117.01											
Intersection LOS	F											
Intersection V/C	0.966											

Other Modes

g_Walk,mi, Effective Walk Time [s]	17.0	0.0	11.0	17.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.20	0.00	49.50	44.20
I_p,int, Pedestrian LOS Score for Intersection	3.274	0.000	2.185	3.434
Crosswalk LOS	C	F	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	628	845	562	162
d_b, Bicycle Delay [s]	28.22	20.01	31.03	50.69
I_b,int, Bicycle LOS Score for Intersection	2.742	2.299	2.114	3.564
Bicycle LOS	B	B	B	D

Sequence

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







Intersection Level Of Service Report

Intersection 11: Steamboat Pkwy / Damonte Ranch Pkwy

Control Type:	Signalized	Delay (sec / veh):	18.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.317

Intersection Setup

Name	Damonte Ranch Pkwy			Damonte Ranch Pkwy			Steamboat Pkwy			Steamboat Pkwy		
Approach	Northbound			Westbound			Northeastbound			Southeastbound		
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	2	0	0
Entry Pocket Length [ft]	150.00	100.00	100.00	150.00	100.00	100.00	150.00	100.00	100.00	250.00	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]	45.00			45.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Damonte Ranch Pkwy			Damonte Ranch Pkwy						Steamboat Pkwy		
Base Volume Input [veh/h]	10	80	59	14	203	1729	20	182	10	671	121	10
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	3.00	3.00	3.00	2.00	3.00	2.00	2.00	2.00	3.00	3.00	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	31	0	0	518	0	0	5	0	0	5
Total Hourly Volume [veh/h]	10	80	28	14	203	1211	20	182	5	671	121	5
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	3	21	7	4	53	319	5	48	1	177	32	1
Total Analysis Volume [veh/h]	11	84	29	15	214	1275	21	192	5	706	127	5
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			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]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	3	8	8	7	4	0	1	6	0
Auxiliary Signal Groups						1,8						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	4	0	4	4	4	4	4	0	6	4	0
Maximum Green [s]	20	30	0	20	30	30	20	30	0	30	30	0
Amber [s]	3.5	4.3	0.0	3.5	3.5	3.5	3.5	3.5	0.0	4.3	3.5	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	1.5	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	9	41	0	30	50	50	17	37	0	12	44	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	5	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	20	30	30	0	26	0	0	18	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]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.8	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.8	3.0	0.0
Minimum Recall	No	No		No	No	No	No	No		Yes	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	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	R	L	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.80	5.80	5.00	5.00	5.80	5.00	5.00	5.80	5.00	5.00
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]	3.00	3.80	3.80	3.00	3.00	0.00	3.00	3.00	3.80	3.00	3.00
g_i, Effective Green Time [s]	1	6	6	2	21	95	2	21	69	76	76
g / C, Green / Cycle	0.01	0.05	0.05	0.01	0.17	0.79	0.02	0.18	0.58	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.01	0.03	0.03	0.01	0.11	0.46	0.01	0.11	0.21	0.04	0.04
s, saturation flow rate [veh/h]	1781	1855	1699	1767	1870	2791	1781	1862	3431	1855	1830
c, Capacity [veh/h]	19	93	85	24	327	2216	31	332	1982	1170	1154
d1, Uniform Delay [s]	59.09	55.86	55.98	58.88	46.17	4.69	58.64	45.32	13.48	8.50	8.50
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.11	0.50	0.11	0.11
l, 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]	23.63	6.34	8.16	22.89	2.23	1.09	22.85	1.69	0.50	0.02	0.02
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	0.57	0.61	0.65	0.62	0.66	0.58	0.68	0.59	0.36	0.06	0.06
d, Delay for Lane Group [s/veh]	82.72	62.20	64.14	81.77	48.40	5.78	81.49	47.02	13.98	8.52	8.52
Lane Group LOS	F	E	E	F	D	A	F	D	B	A	A
Critical Lane Group	No	No	Yes	No	No	Yes	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.45	1.82	1.82	0.60	5.99	4.19	0.83	5.56	5.00	0.64	0.63
50th-Percentile Queue Length [ft/ln]	11.32	45.52	45.46	14.95	149.78	104.71	20.79	138.93	125.06	15.98	15.78
95th-Percentile Queue Length [veh/ln]	0.81	3.28	3.27	1.08	10.01	7.54	1.50	9.42	8.67	1.15	1.14
95th-Percentile Queue Length [ft/ln]	20.37	81.93	81.82	26.91	250.14	188.48	37.42	235.58	216.76	28.77	28.40

Movement, Approach, & Intersection Results

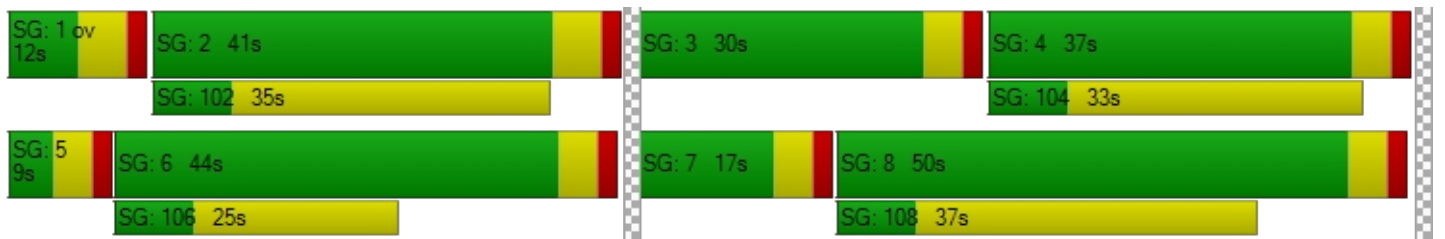
d_M, Delay for Movement [s/veh]	82.72	62.82	64.14	81.77	48.40	5.78	81.49	47.02	47.02	13.98	8.52	8.52
Movement LOS	F	E	E	F	D	A	F	D	D	B	A	A
d_A, Approach Delay [s/veh]	64.90			12.60			50.34			13.12		
Approach LOS	E			B			D			B		
d_I, Intersection Delay [s/veh]	18.25											
Intersection LOS	B											
Intersection V/C	0.317											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	2.448	3.930	2.110	3.060
Crosswalk LOS	B	D	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	587	750	533	650
d_b, Bicycle Delay [s]	29.96	23.44	32.27	27.34
I_b,int, Bicycle LOS Score for Intersection	1.687	4.896	1.928	2.255
Bicycle LOS	A	E	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 12: Veterans Pkwy / Steamboat Pkwy

Control Type:	Signalized	Delay (sec / veh):	126.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.932

Intersection Setup

Name	Veterans Pkwy			Veterans Pkwy			Damonte Ranch Pkwy			Steamboat Pkwy		
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	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	200.00	100.00	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]	45.00			45.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Veterans Pkwy			Veterans Pkwy			Damonte Ranch Pkwy			Steamboat Pkwy		
Base Volume Input [veh/h]	572	928	45	547	768	403	192	483	208	141	1149	170
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 [%]	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10
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	23	0	0	121	0	0	62	0	0	88
Total Hourly Volume [veh/h]	572	928	22	547	768	282	192	483	146	141	1149	82
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	151	244	6	144	202	74	51	127	38	37	302	22
Total Analysis Volume [veh/h]	602	977	23	576	808	297	202	508	154	148	1209	86
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			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]	115.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Overlap	ProtPer	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	5	2	0	1	6	6	7	4	4	3	8	0
Auxiliary Signal Groups						6,7			4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	4	0	4	4	4	4	6	6	4	6	0
Maximum Green [s]	30	30	0	15	30	30	15	30	30	15	30	0
Amber [s]	3.9	4.8	0.0	3.9	4.8	4.8	3.9	4.8	4.8	3.2	4.8	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0
Split [s]	32	37	0	25	30	30	20	38	38	20	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	7	0	7	0
Pedestrian Clearance [s]	0	17	0	0	15	15	0	23	23	0	23	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]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.4	4.3	0.0	3.4	4.3	4.3	3.4	4.3	4.3	2.7	4.3	0.0
Minimum Recall	No	No		No	No	No	No	No	No	No	No	
Maximum Recall	No	No		No	No	No	No	Yes	Yes	No	No	
Pedestrian Recall	No	No		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	R	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.30	6.30	6.30	6.30	6.30	5.40	6.30	6.30	5.40	6.30	6.30	6.30
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	0.00
l2, Clearance Lost Time [s]	0.00	4.30	4.30	0.00	4.30	0.00	0.00	4.30	0.00	0.00	4.30	4.30
g_i, Effective Green Time [s]	56	35	35	56	24	45	52	39	72	52	32	32
g / C, Green / Cycle	0.46	0.29	0.29	0.46	0.20	0.37	0.43	0.32	0.60	0.43	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.48	0.27	0.27	0.60	0.23	0.19	0.23	0.27	0.10	0.14	0.35	0.35
s, saturation flow rate [veh/h]	1260	1853	1839	957	3529	1575	891	1853	1575	1072	1853	1811
c, Capacity [veh/h]	542	544	540	386	694	585	361	598	940	326	490	479
d1, Uniform Delay [s]	36.73	41.06	41.11	37.82	48.21	29.22	26.61	37.92	10.81	25.90	44.15	44.15
k, delay calibration	0.50	0.46	0.46	0.50	0.11	0.23	0.50	0.50	0.50	0.45	0.50	0.50
l, 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
d2, Incremental Delay [s]	72.51	21.90	22.57	235.32	77.42	1.47	6.14	14.04	0.37	4.08	163.51	166.87
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	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	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	1.00

Lane Group Results

X, volume / capacity	1.11	0.92	0.92	1.49	1.16	0.51	0.56	0.85	0.16	0.45	1.33	1.34
d, Delay for Lane Group [s/veh]	109.24	62.96	63.68	273.14	125.62	30.69	32.75	51.96	11.18	29.98	207.66	211.02
Lane Group LOS	F	E	E	F	F	C	C	D	B	C	F	F
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	22.12	17.03	17.06	32.28	17.50	6.60	4.28	16.12	1.90	2.93	36.52	36.13
50th-Percentile Queue Length [ft/ln]	553.02	425.85	426.49	806.93	437.38	164.97	107.08	403.01	47.51	73.24	913.08	903.18
95th-Percentile Queue Length [veh/ln]	32.13	23.80	23.83	52.21	26.29	10.81	7.68	22.70	3.42	5.27	54.17	53.75
95th-Percentile Queue Length [ft/ln]	803.25	595.07	595.83	1305.21	657.13	270.30	191.93	567.62	85.52	131.83	1354.32	1343.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	109.24	63.31	63.68	273.14	125.62	30.69	32.75	51.96	11.18	29.98	209.21	211.02
Movement LOS	F	E	E	F	F	C	C	D	B	C	F	F
d_A, Approach Delay [s/veh]	80.58			159.40			40.20			190.93		
Approach LOS	F			F			D			F		
d_I, Intersection Delay [s/veh]	126.53											
Intersection LOS	F											
Intersection V/C	0.932											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	3.236			3.488			3.254			3.419		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	512			395			528			528		
d_b, Bicycle Delay [s]	33.23			38.64			32.49			32.49		
I_b,int, Bicycle LOS Score for Intersection	2.900			3.046			3.088			2.823		
Bicycle LOS	C			C			C			C		

Sequence





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



Intersection Level Of Service Report
Intersection 13: Rio Wrangler Pkwy / Steamboat Pkwy

Control Type:	All-way stop	Delay (sec / veh):	273.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.083

Intersection Setup

Name	Rio Wrangler Pkwy			Rio Wrangler Pkwy			Steamboat Pkwy			Steamboat Pkwy		
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	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	100.00	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]	45.00			45.00			45.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Rio Wrangler Pkwy			Rio Wrangler Pkwy			Steamboat Pkwy			Steamboat Pkwy		
Base Volume Input [veh/h]	539	121	2	7	290	546	198	15	537	10	30	5
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 [%]	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70
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]	539	121	2	7	290	546	198	15	537	10	30	5
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	142	32	1	2	76	144	52	4	141	3	8	1
Total Analysis Volume [veh/h]	567	127	2	7	305	575	208	16	565	11	32	5
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	567	414	887	425	451	565	343
Degree of Utilization, x	1.45	0.31	2.08	0.49	0.04	1.14	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	29.19	1.31	62.94	2.62	0.11	19.58	0.48
95th-Percentile Queue Length [ft]	729.73	32.68	1573.44	65.53	2.75	489.59	12.05
Approach Delay [s/veh]	197.92		514.66	84.58		15.20	
Approach LOS	F		F	F		C	
Intersection Delay [s/veh]	273.44						
Intersection LOS	F						

Intersection Level Of Service Report
Intersection 14: Rio Wrangler Pkwy / McCauley Ranch Blvd

Control Type:	Two-way stop	Delay (sec / veh):	80.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.483

Intersection Setup

Name	Rio Wrangler Pkwy		Rio Wrangler Pkwy		MCCauley Ranch Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↵↻		↻↵		↻↵	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	110.00	100.00	125.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00		30.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Rio Wrangler Pkwy		Rio Wrangler Pkwy		MCCauley Ranch Blvd	
Base Volume Input [veh/h]	329	95	339	439	40	308
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.50	4.50	4.50	4.50	4.50	4.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	329	95	339	439	40	308
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	87	25	89	116	11	81
Total Analysis Volume [veh/h]	346	100	357	462	42	324
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.32	0.00	0.48	0.47
d_M, Delay for Movement [s/veh]	0.00	0.00	9.83	0.00	80.29	14.72
Movement LOS	A	A	A	A	F	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	1.42	0.00	2.05	2.51
95th-Percentile Queue Length [ft/ln]	0.00	0.00	35.44	0.00	51.37	62.73
d_A, Approach Delay [s/veh]	0.00		4.28		22.24	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	7.14					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 15: S. Virginia St / Geiger Grade Rd

Control Type:	Signalized	Delay (sec / veh):	33.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.578

Intersection Setup

Name	Geiger Grade Rd			Mt. Rose Hwy			S. Virginia St			S. Virginia St		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
Lane Configuration	1 1 1			1 1 1 1			1 1 1 1			1 1 1 1		
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	1	2	0	1	2	0	1	2	0	0
Entry Pocket Length [ft]	350.00	100.00	700.00	725.00	100.00	250.00	525.00	100.00	100.00	600.00	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]	35.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Geiger Grade Rd			Mt. Rose Hwy			S. Virginia St			S. Virginia St		
Base Volume Input [veh/h]	193	716	1548	160	345	43	96	801	199	483	226	231
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 [%]	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10
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	464	0	0	22	0	0	103	0	0	69
Total Hourly Volume [veh/h]	193	716	1084	160	345	21	96	801	96	483	226	162
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	51	188	285	42	91	6	25	211	25	127	59	43
Total Analysis Volume [veh/h]	203	754	1141	168	363	22	101	843	101	508	238	171
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	0	3	8	0	5	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	5	5	5	5
Maximum Green [s]	30	35	0	20	35	0	25	40	40	40	40	40
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	5.0	5.0	4.0	5.0	5.0
All red [s]	1.0	1.5	0.0	1.5	1.5	0.0	1.0	2.0	2.0	2.0	2.0	2.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	7
Pedestrian Clearance [s]	0	28	0	0	28	0	0	18	18	0	18	18
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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	3.5	0.0	3.5	3.5	0.0	3.0	5.0	5.0	4.0	5.0	5.0
Minimum Recall	No	No		No	No		No	Yes		No	Yes	
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	L	C	L	C	R	L	C	R
C, Cycle Length [s]	86	86	86	86	86	86	86	86	86	86
L, Total Lost Time per Cycle [s]	5.00	5.50	5.50	5.50	5.00	7.00	7.00	6.00	7.00	7.00
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
l2, Clearance Lost Time [s]	3.00	3.50	3.50	3.50	3.00	5.00	5.00	4.00	5.00	5.00
g_i, Effective Green Time [s]	12	21	6	16	5	18	18	16	31	31
g / C, Green / Cycle	0.14	0.25	0.07	0.19	0.05	0.21	0.21	0.18	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.12	0.21	0.05	0.10	0.03	0.17	0.06	0.15	0.05	0.11
s, saturation flow rate [veh/h]	1765	3529	3428	3529	3428	5049	1575	3428	5049	1575
c, Capacity [veh/h]	246	880	253	669	181	1085	339	629	1803	563
d1, Uniform Delay [s]	36.09	30.90	38.90	31.57	39.86	31.91	28.40	33.77	18.71	20.00
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.81	2.54	2.96	0.69	2.66	1.23	0.49	2.53	0.03	0.30
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
Rp, platoon ratio	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

Lane Group Results

X, volume / capacity	0.82	0.86	0.66	0.54	0.56	0.78	0.30	0.81	0.13	0.30
d, Delay for Lane Group [s/veh]	42.90	33.44	41.86	32.26	42.52	33.14	28.89	36.30	18.75	20.30
Lane Group LOS	D	C	D	C	D	C	C	D	B	C
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.47	7.43	1.75	3.26	1.06	5.25	1.69	4.98	0.99	2.31
50th-Percentile Queue Length [ft/ln]	111.82	185.64	43.63	81.58	26.49	131.35	42.18	124.54	24.73	57.85
95th-Percentile Queue Length [veh/ln]	7.94	11.89	3.14	5.87	1.91	9.01	3.04	8.64	1.78	4.16
95th-Percentile Queue Length [ft/ln]	198.54	297.36	78.54	146.84	47.69	225.33	75.92	216.05	44.52	104.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.90	33.44	0.00	41.86	32.26	0.00	42.52	33.14	28.89	36.30	18.75	20.30
Movement LOS	D	C		D	C		D	C	C	D	B	C
d_A, Approach Delay [s/veh]	35.44			35.29			33.64			28.76		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	33.10											
Intersection LOS	C											
Intersection V/C	0.578											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.838	2.933	3.253	3.271
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	778	889	889
d_b, Bicycle Delay [s]	16.81	16.81	13.89	13.89
I_b,int, Bicycle LOS Score for Intersection	2.349	1.998	2.191	2.102
Bicycle LOS	B	A	B	B

Sequence

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



MOVEMENT SUMMARY

 Site: Geiger/Veterans AM

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Geiger Grade											
3	L2	1307	2.0	1.314	172.4	LOS F	76.1	1933.8	1.00	3.72	10.0
8	T1	122	2.0	1.314	172.4	LOS F	76.1	1933.8	1.00	3.72	9.9
18	R2	248	2.0	1.314	172.4	LOS F	76.1	1933.8	1.00	3.72	9.8
Approach		1678	2.0	1.314	172.4	LOS F	76.1	1933.8	1.00	3.72	10.0
East: Veterans Pkwy											
1	L2	80	2.0	1.309	180.1	LOS F	51.0	1296.4	1.00	3.62	9.7
6	T1	1109	2.0	1.309	179.1	LOS F	53.6	1362.2	1.00	3.70	9.7
16	R2	29	2.0	1.309	178.2	LOS F	53.6	1362.2	1.00	3.77	9.6
Approach		1219	2.0	1.309	179.1	LOS F	53.6	1362.2	1.00	3.70	9.7
North: Private Access											
7	L2	106	2.0	1.819	412.2	LOS F	79.3	2013.9	1.00	4.57	4.9
4	T1	132	2.0	1.819	412.2	LOS F	79.3	2013.9	1.00	4.57	4.9
14	R2	281	2.0	1.819	412.2	LOS F	79.3	2013.9	1.00	4.57	4.8
Approach		519	2.0	1.819	412.2	LOS F	79.3	2013.9	1.00	4.57	4.8
West: Veterans Pkwy											
5	L2	86	2.0	0.545	11.3	LOS B	3.2	80.9	0.52	0.40	32.9
2	T1	396	2.0	0.545	11.3	LOS B	3.2	80.9	0.52	0.40	32.6
12	R2	512	2.0	0.545	11.3	LOS B	3.2	80.9	0.52	0.40	31.6
Approach		994	2.0	0.545	11.3	LOS B	3.2	80.9	0.52	0.40	32.1
All Vehicles		4409	2.0	1.819	166.2	LOS F	79.3	2013.9	0.89	3.07	10.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

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 HCM 2010).

Roundabout Capacity Model: US HCM 2010.

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 1: S. Virginia St / I-580 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	387.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.776

Intersection Setup

Name	S. Virginia St			S. Virginia St			North On-Ramp			North Off-Ramp		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				r						r		
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	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	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]	45.00			45.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	S. Virginia St			S. Virginia St			North On-Ramp			North Off-Ramp		
Base Volume Input [veh/h]	0	1470	0	0	0	0	0	0	0	0	0	579
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	1.30	2.00	2.00	1.30	1.30	2.00	2.00	2.00	2.00	2.00	1.30
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	1470	0	0	0	0	0	0	0	0	0	579
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	387	0	0	0	0	0	0	0	0	0	152
Total Analysis Volume [veh/h]	0	1547	0	0	0	0	0	0	0	0	0	609
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	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	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.78
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	387.15
Movement LOS		A			A	A						F
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.10
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	977.42
d_A, Approach Delay [s/veh]	0.00			0.00			0.00			387.15		
Approach LOS	A			A			A			F		
d_I, Intersection Delay [s/veh]	109.36											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Double R Blvd / Sandhill Rd

Control Type:	Signalized	Delay (sec / veh):	14.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.512

Intersection Setup

Name	Double R Blvd			Double R Blvd			Sandhill Rd			Sandhill 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	0	0	0	1	0	0
Entry Pocket Length [ft]	150.00	100.00	100.00	150.00	100.00	100.00	100.00	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]	45.00			45.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Double R Blvd			Double R Blvd			Sandhill Rd			Sandhill Rd		
Base Volume Input [veh/h]	110	870	37	32	1143	20	10	21	127	91	25	131
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 [%]	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
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	20	0	0	10	0	0	67	0	0	68
Total Hourly Volume [veh/h]	110	870	17	32	1143	10	10	21	60	91	25	63
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	29	229	4	8	301	3	3	6	16	24	7	17
Total Analysis Volume [veh/h]	116	916	18	34	1203	11	11	22	63	96	26	66
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	80
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]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	26	39	0	9	22	0	0	32	0	0	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	11	0	0	21	0	0	21	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]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	53	53	3	48	48	13	13	13
g / C, Green / Cycle	0.09	0.66	0.66	0.03	0.60	0.60	0.16	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.07	0.28	0.28	0.02	0.36	0.36	0.07	0.08	0.06
s, saturation flow rate [veh/h]	1613	1694	1682	1613	1694	1688	1464	1189	1503
c, Capacity [veh/h]	146	1117	1110	54	1021	1018	280	160	236
d1, Uniform Delay [s]	35.67	6.40	6.40	38.20	9.85	9.85	30.34	33.52	30.28
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11
l, 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]	9.48	1.16	1.17	11.79	2.56	2.57	0.72	3.61	1.05
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	0.80	0.42	0.42	0.64	0.60	0.60	0.34	0.60	0.39
d, Delay for Lane Group [s/veh]	45.15	7.56	7.57	49.99	12.41	12.42	31.06	37.12	31.32
Lane Group LOS	D	A	A	D	B	B	C	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.46	2.94	2.93	0.80	5.71	5.70	1.66	1.91	1.60
50th-Percentile Queue Length [ft/ln]	61.62	73.57	73.14	19.94	142.76	142.42	41.45	47.72	40.01
95th-Percentile Queue Length [veh/ln]	4.44	5.30	5.27	1.44	9.63	9.61	2.98	3.44	2.88
95th-Percentile Queue Length [ft/ln]	110.91	132.43	131.65	35.90	240.73	240.28	74.60	85.90	72.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.15	7.56	7.57	49.99	12.41	12.42	31.06	31.06	31.06	37.12	31.32	31.32
Movement LOS	D	A	A	D	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	11.72			13.44			31.06			34.29		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	14.91											
Intersection LOS	B											
Intersection V/C	0.512											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	3.189			3.001			1.989			2.163		
Crosswalk LOS	C			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	875			450			700			700		
d_b, Bicycle Delay [s]	12.66			24.03			16.90			16.90		
I_b,int, Bicycle LOS Score for Intersection	2.442			2.597			1.829			1.982		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report
Intersection 3: S. Meadows Pkwy / Gateway Dr

Control Type:	Signalized	Delay (sec / veh):	53.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.846

Intersection Setup

Name	Gateway Dr			Gateway Dr			S. Meadows Pkwy			S. Meadows Pkwy		
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	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	40.00	100.00	100.00	100.00	100.00	100.00	200.00	100.00	100.00	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]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Gateway Dr			Gateway Dr			S. Meadows Pkwy			S. Meadows Pkwy		
Base Volume Input [veh/h]	85	43	58	266	38	528	365	1492	40	83	1696	119
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 [%]	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
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	30	0	0	158	0	0	21	0	0	62
Total Hourly Volume [veh/h]	85	43	28	266	38	370	365	1492	19	83	1696	57
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	22	11	7	70	10	97	96	393	5	22	446	15
Total Analysis Volume [veh/h]	89	45	29	280	40	389	384	1571	20	87	1785	60
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	135
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	4	0	0	4	0	6	8	0	6	12	0
Maximum Green [s]	0	20	0	0	30	0	35	35	0	20	35	0
Amber [s]	0.0	3.0	0.0	0.0	3.4	0.0	3.9	4.8	0.0	3.2	4.1	0.0
All red [s]	0.0	1.5	0.0	0.0	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	0	45	0	0	45	0	45	70	0	20	45	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	8	0	0	8	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	29	0	0	28	0	0	14	0	0	16	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.5	0.0	0.0	2.9	0.0	3.4	4.3	0.0	2.7	3.6	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	Yes		No	Yes	
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

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	135	135	135	135	135	135	135	135	135	135
L, Total Lost Time per Cycle [s]	4.50	4.50	4.90	4.90	5.40	6.30	6.30	4.70	5.60	5.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.50	2.90	2.90	3.40	4.30	4.30	2.70	3.60	3.60
g_i, Effective Green Time [s]	30	30	30	30	31	81	81	8	58	58
g / C, Green / Cycle	0.23	0.23	0.22	0.22	0.23	0.60	0.60	0.06	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.06	0.04	0.29	0.24	0.21	0.29	0.29	0.05	0.34	0.34
s, saturation flow rate [veh/h]	1412	1764	1091	1604	1797	3592	1874	1797	3592	1855
c, Capacity [veh/h]	59	399	293	358	410	2148	1121	110	1549	800
d1, Uniform Delay [s]	65.13	42.21	57.69	52.44	51.16	15.38	15.39	62.53	33.02	33.05
k, delay calibration	0.11	0.11	0.44	0.50	0.31	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	250.82	0.22	75.88	72.95	22.38	0.79	1.51	11.98	4.07	7.67
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
Rp, platoon ratio	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

Lane Group Results

X, volume / capacity	1.52	0.19	1.09	1.09	0.94	0.49	0.49	0.79	0.79	0.79
d, Delay for Lane Group [s/veh]	315.95	42.43	133.57	125.39	73.54	16.17	16.90	74.51	37.09	40.72
Lane Group LOS	F	D	F	F	E	B	B	E	D	D
Critical Lane Group	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.69	2.06	16.40	19.44	15.17	9.04	9.67	3.30	17.61	19.03
50th-Percentile Queue Length [ft/ln]	142.16	51.56	409.95	486.09	379.14	226.03	241.79	82.50	440.19	475.86
95th-Percentile Queue Length [veh/ln]	10.24	3.71	24.17	27.96	21.55	13.97	14.77	5.94	24.49	26.19
95th-Percentile Queue Length [ft/ln]	255.90	92.80	604.13	699.03	538.81	349.31	369.30	148.50	612.23	654.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	315.95	42.43	42.43	133.57	133.57	125.39	73.54	16.42	16.90	74.51	38.25	40.72
Movement LOS	F	D	D	F	F	F	E	B	B	E	D	D
d_A, Approach Delay [s/veh]	191.78			129.08			27.53			39.96		
Approach LOS	F			F			C			D		
d_I, Intersection Delay [s/veh]	53.22											
Intersection LOS	D											
Intersection V/C	0.846											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	12.0	12.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	56.95	56.95	56.03	56.03
I_p,int, Pedestrian LOS Score for Intersection	2.100	2.568	3.436	3.734
Crosswalk LOS	B	B	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	594	944	584
d_b, Bicycle Delay [s]	33.08	33.36	18.83	33.85
I_b,int, Bicycle LOS Score for Intersection	1.878	2.990	2.657	2.656
Bicycle LOS	A	C	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 4: S. Meadows Pkwy / Double R Blvd

Control Type:	Signalized	Delay (sec / veh):	58.2
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.751

Intersection Setup

Name	Double R Blvd			Double R Blvd			S. Meadows Pkwy			S. Meadows Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
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	2	0	1	2	0	1	2	0	0	2	0	0
Entry Pocket Length [ft]	250.00	100.00	275.00	225.00	100.00	450.00	315.00	100.00	100.00	225.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
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	49.21
Speed [mph]	35.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Double R Blvd			Double R Blvd			S. Meadows Pkwy			S. Meadows Pkwy		
Base Volume Input [veh/h]	569	452	189	431	683	535	476	1080	358	142	712	104
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 [%]	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
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	96	0	0	161	0	0	0	0	0	0
Total Hourly Volume [veh/h]	569	452	93	431	683	374	476	1080	358	142	712	104
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	150	119	24	113	180	98	125	284	94	37	187	27
Total Analysis Volume [veh/h]	599	476	98	454	719	394	501	1137	377	149	749	109
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	135
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	6	0	4	6	0	6	10	0	6	10	0
Maximum Green [s]	25	30	0	25	30	0	35	35	0	16	35	0
Amber [s]	3.9	4.8	0.0	3.9	4.8	0.0	3.2	4.1	0.0	3.2	4.1	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	24	41	0	24	41	0	35	50	0	20	35	0
Vehicle Extension [s]	2.5	2.5	0.0	2.5	2.5	0.0	2.5	3.0	0.0	2.0	3.0	0.0
Walk [s]	0	8	0	0	8	0	0	7	0	0	9	0
Pedestrian Clearance [s]	0	25	0	0	25	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.4	4.3	0.0	3.4	4.3	0.0	2.7	3.6	0.0	2.7	3.6	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		Yes	Yes		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	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	137	137	137	137	137	137	137	137	137	137	137	137
L, Total Lost Time per Cycle [s]	5.40	6.30	6.30	5.40	6.30	6.30	4.70	5.60	5.60	4.70	5.60	5.60
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	0.00
l2, Clearance Lost Time [s]	3.40	4.30	4.30	3.40	4.30	4.30	2.70	3.60	3.60	2.70	3.60	3.60
g_i, Effective Green Time [s]	25	36	36	19	30	30	35	52	52	8	25	25
g / C, Green / Cycle	0.18	0.27	0.27	0.14	0.22	0.22	0.26	0.38	0.38	0.06	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.17	0.13	0.06	0.13	0.20	0.25	0.14	0.29	0.29	0.04	0.16	0.16
s, saturation flow rate [veh/h]	3495	3598	1606	3495	3598	1606	3495	3598	1661	3495	3598	1770
c, Capacity [veh/h]	636	952	425	475	787	351	892	1373	634	201	661	325
d1, Uniform Delay [s]	55.39	42.74	39.49	58.86	52.33	53.59	44.43	36.76	37.03	63.66	54.37	54.43
k, delay calibration	0.08	0.08	0.08	0.08	0.08	0.48	0.50	0.50	0.50	0.04	0.11	0.16
l, 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
d2, Incremental Delay [s]	5.97	0.30	0.20	9.01	3.57	84.48	2.56	3.81	8.50	2.04	3.64	10.51
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.94	0.50	0.23	0.96	0.91	1.12	0.56	0.75	0.76	0.74	0.87	0.87
d, Delay for Lane Group [s/veh]	61.36	43.04	39.69	67.87	55.90	138.08	46.98	40.57	45.53	65.70	58.01	64.94
Lane Group LOS	E	D	D	E	E	F	D	D	D	E	E	E
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	10.67	6.87	2.62	8.43	12.47	20.33	7.71	15.49	15.47	2.61	9.89	10.42
50th-Percentile Queue Length [ft/ln]	266.70	171.72	65.56	210.85	311.77	508.22	192.68	387.13	386.72	65.26	247.34	260.57
95th-Percentile Queue Length [veh/ln]	16.02	11.17	4.72	13.20	18.26	29.52	12.26	21.94	21.92	4.70	15.05	15.72
95th-Percentile Queue Length [ft/ln]	400.61	279.17	118.00	329.93	456.55	738.04	306.50	548.47	547.97	117.47	376.30	392.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	61.36	43.04	39.69	67.87	55.90	138.08	46.98	41.04	45.53	65.70	59.63	64.94
Movement LOS	E	D	D	E	E	F	D	D	D	E	E	E
d_A, Approach Delay [s/veh]	52.11			80.03			43.36			61.10		
Approach LOS	D			F			D			E		
d_I, Intersection Delay [s/veh]	58.22											
Intersection LOS	E											
Intersection V/C	0.751											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	13.0	12.0	12.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	56.95	55.13	56.03	56.03
I_p,int, Pedestrian LOS Score for Intersection	3.111	3.156	3.165	3.100
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	514	514	658	436
d_b, Bicycle Delay [s]	37.26	37.26	30.40	41.30
I_b,int, Bicycle LOS Score for Intersection	2.607	2.985	2.668	2.113
Bicycle LOS	B	C	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 5: S. Meadows Pkwy / Double Diamond Pkwy

Control Type:	Signalized	Delay (sec / veh):	152.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.960

Intersection Setup

Name	S. Meadows Pkwy				S. Meadows Pkwy			Double Diamond Pkwy			Double Diamond Pkwy		
Approach	Northeastbound				Southwestbound			Northwestbound			Southeastbound		
Lane Configuration													
Turning Movement	U-tu	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	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	175.0	100.0	100.0	175.0	100.00	100.00	100.00	250.00	100.00	100.00	200.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	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	0.00
Speed [mph]	30.00				30.00			35.00			35.00		
Grade [%]	0.00				0.00			0.00			0.00		
Curb Present	No				No			No			No		
Crosswalk	Yes				Yes			Yes			Yes		

Volumes

Name	S. Meadows Pkwy				S. Meadows Pkwy			Double Diamond Pkwy			Double Diamond Pkwy		
	55	149	899	335	8	534	460	115	189	8	909	451	237
Base Volume Input [veh/h]	55	149	899	335	8	534	460	115	189	8	909	451	237
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Growth Factor	1.000	1.000	1.000	1.000	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	0
Site-Generated Trips [veh/h]	0	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	0
Pass-by Trips [veh/h]	0	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	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	101	0	0	138	0	0	4	0	0	71
Total Hourly Volume [veh/h]	55	149	899	234	8	534	322	115	189	4	909	451	166
Peak Hour Factor	0.950	0.950	0.950	0.950	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	39	237	62	2	141	85	30	50	1	239	119	44
Total Analysis Volume [veh/h]	58	157	946	246	8	562	339	121	199	4	957	475	175
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	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0				0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0				0			0			0		
v_co, Outbound Pedestrian Volume crossing	0				0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0				0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0				0			0			0		
Bicycle Volume [bicycles/h]	0				0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Prote	Permi	Unsig	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	7	4	0	3	8	0	5	2	0	1	6	0
Auxiliary Signal Groups													
Lead / Lag	-	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	6	0	6	6	0	4	6	0	4	6	0
Maximum Green [s]	0	35	35	0	16	35	0	25	30	0	25	30	0
Amber [s]	0.0	3.2	4.1	0.0	3.2	4.1	0.0	3.3	4.2	0.0	3.3	4.2	0.0
All red [s]	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	2.5	3.0	0.0	3.0	3.0	0.0	2.5	2.5	0.0	2.5	2.5	0.0
Walk [s]	0	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	19	0	0	18	0	0	20	0	0	17	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	0.0
Rest In Walk			No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.7	3.6	0.0	2.7	3.6	0.0	2.8	3.7	0.0	2.8	3.7	0.0
Minimum Recall		No	Yes		No	Yes		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	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	96	96	96	96	96	96	96	96	96	96	96
L, Total Lost Time per Cycle [s]	4.70	5.60	4.70	5.60	5.60	4.80	5.70	5.70	4.80	5.70	5.70
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]	2.70	3.60	2.70	3.60	3.60	2.80	3.70	3.70	2.80	3.70	3.70
g_i, Effective Green Time [s]	14	40	1	27	27	8	9	9	25	26	26
g / C, Green / Cycle	0.14	0.41	0.01	0.29	0.29	0.09	0.10	0.10	0.26	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.12	0.26	0.00	0.25	0.25	0.07	0.05	0.05	0.53	0.25	0.11
s, saturation flow rate [veh/h]	1798	3595	1798	1888	1653	1798	1888	1875	1798	1888	1605
c, Capacity [veh/h]	253	1489	22	539	472	153	186	184	467	515	438
d1, Uniform Delay [s]	40.39	22.43	47.23	32.99	33.00	43.23	41.40	41.41	35.68	34.06	28.61
k, delay calibration	0.08	0.11	0.11	0.21	0.21	0.08	0.08	0.08	0.50	0.26	0.08
l, 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]	5.89	0.45	10.12	9.75	10.97	6.64	1.86	1.89	480.56	15.33	0.44
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	0.85	0.64	0.37	0.89	0.89	0.79	0.55	0.55	2.05	0.92	0.40
d, Delay for Lane Group [s/veh]	46.28	22.89	57.35	42.74	43.96	49.87	43.26	43.30	516.24	49.38	29.05
Lane Group LOS	D	C	E	D	D	D	D	D	F	D	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.32	8.29	0.25	11.90	10.59	3.05	2.35	2.35	72.77	12.56	3.26
50th-Percentile Queue Length [ft/ln]	132.93	207.33	6.25	297.58	264.69	76.26	58.83	58.64	1819.31	313.89	81.52
95th-Percentile Queue Length [veh/ln]	9.10	13.02	0.45	17.56	15.92	5.49	4.24	4.22	114.43	18.37	5.87
95th-Percentile Queue Length [ft/ln]	227.47	325.40	11.25	439.03	398.10	137.28	105.90	105.56	2860.79	459.17	146.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.28	46.28	22.89	0.00	57.35	42.92	43.96	49.87	43.28	43.30	516.24	49.38	29.05
Movement LOS	D	D	C		E	D	D	D	D	D	F	D	C
d_A, Approach Delay [s/veh]	27.22				43.44			45.74			325.19		
Approach LOS	C				D			D			F		
d_I, Intersection Delay [s/veh]	152.08												
Intersection LOS	F												
Intersection V/C	0.960												

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	2.892	3.087	2.381	2.986
Crosswalk LOS	C	C	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	583	500	500
d_b, Bicycle Delay [s]	30.10	30.10	33.75	33.75
I_b,int, Bicycle LOS Score for Intersection	2.388	2.423	1.830	4.328
Bicycle LOS	B	B	A	E

Sequence

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



Intersection Level Of Service Report
Intersection 6: S. Meadows Pkwy / Wilbur May Pkwy

Control Type:	All-way stop	Delay (sec / veh):	340.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.169

Intersection Setup

Name	Wilbur May Pkwy		S. Meadows Pkwy		S. Meadows Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↩↩		↩		↩	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	1	0
Entry Pocket Length [ft]	75.00	100.00	100.00	100.00	125.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Wilbur May Pkwy		S. Meadows Pkwy		S. Meadows Pkwy	
Base Volume Input [veh/h]	85	76	1636	180	236	917
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.10	1.10	1.10	1.10	1.10	1.10
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	76	1636	180	236	917
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	20	431	47	62	241
Total Analysis Volume [veh/h]	89	80	1722	189	248	965
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	311	346	956	956	438	483	483
Degree of Utilization, x	0.29	0.23	2.17	2.13	0.57	1.03	1.03

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.16	0.88	69.52	68.64	3.42	14.48	14.48
95th-Percentile Queue Length [ft]	28.91	21.95	1738.08	1716.09	85.45	361.90	361.90
Approach Delay [s/veh]	17.60		543.30		66.71		
Approach LOS	C		F		F		
Intersection Delay [s/veh]	340.76						
Intersection LOS	F						

Intersection Level Of Service Report
Intersection 7: S. Meadows Pkwy / Echo Valley Pkwy

Control Type:	Signalized	Delay (sec / veh):	32.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.689

Intersection Setup

Name	Echo Valley Pkwy						S. Meadows Pkwy			S. Meadows Pkwy		
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	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	275.00	100.00	275.00	150.00	100.00	150.00
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]	25.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Echo Valley Pkwy						S. Meadows Pkwy			S. Meadows Pkwy		
	125	0	17	183	0	303	470	944	298	17	725	208
Base Volume Input [veh/h]	125	0	17	183	0	303	470	944	298	17	725	208
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 [%]	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
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	9	0	0	91	0	0	89	0	0	62
Total Hourly Volume [veh/h]	125	0	8	183	0	212	470	944	209	17	725	146
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	33	0	2	48	0	56	124	248	55	4	191	38
Total Analysis Volume [veh/h]	132	0	8	193	0	223	495	994	220	18	763	154
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			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]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Unsigna	ProtPer	Permiss	Permiss	Protecte	Permiss	Unsigna	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	6	0	4	6	0	4	6	0	4	6	0
Maximum Green [s]	25	35	0	25	35	0	25	35	0	25	35	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	9	33	0	17	41	0	40	61	0	9	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	21	0	0	14	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	2.5	2.5	0.0	2.5	2.5	0.0	2.5	2.5	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	L	C	R	L	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
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
l2, Clearance Lost Time [s]	0.00	2.50	0.00	2.50	2.50	2.50	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	28	11	28	19	19	35	76	2	43	43
g / C, Green / Cycle	0.24	0.09	0.24	0.16	0.16	0.30	0.64	0.02	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.09	0.00	0.12	0.00	0.14	0.28	0.28	0.01	0.21	0.10
s, saturation flow rate [veh/h]	1518	1883	1622	1883	1601	1794	3586	1794	3586	1601
c, Capacity [veh/h]	448	177	472	303	257	529	2283	27	1280	572
d1, Uniform Delay [s]	37.83	0.00	39.27	0.00	49.11	41.22	10.96	58.80	31.51	27.45
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.19	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.36	0.00	0.57	0.00	8.60	12.86	0.61	24.54	2.05	1.16
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
Rp, platoon ratio	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

Lane Group Results

X, volume / capacity	0.29	0.00	0.41	0.00	0.87	0.94	0.44	0.67	0.60	0.27
d, Delay for Lane Group [s/veh]	38.19	0.00	39.84	0.00	57.71	54.08	11.56	83.34	33.56	28.60
Lane Group LOS	D	A	D	A	E	D	B	F	C	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.30	0.00	4.96	0.00	7.12	15.83	6.38	0.72	9.25	3.31
50th-Percentile Queue Length [ft/ln]	82.41	0.00	124.01	0.00	177.90	395.69	159.49	18.12	231.21	82.68
95th-Percentile Queue Length [veh/ln]	5.93	0.00	8.61	0.00	11.49	22.35	10.52	1.30	14.24	5.95
95th-Percentile Queue Length [ft/ln]	148.34	0.00	215.33	0.00	287.27	558.80	263.05	32.62	355.90	148.83

Movement, Approach, & Intersection Results

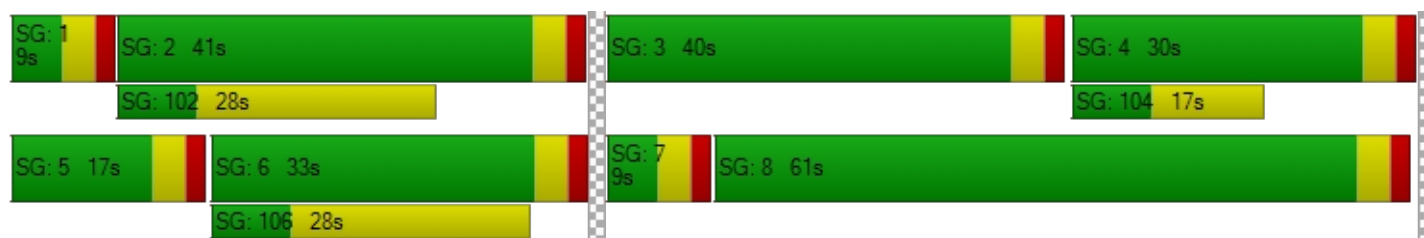
d_M, Delay for Movement [s/veh]	38.19	0.00	0.00	39.84	0.00	57.71	54.08	11.56	0.00	83.34	33.56	28.60
Movement LOS	D	A		D	A	E	D	B		F	C	C
d_A, Approach Delay [s/veh]	38.19			49.42			25.70			33.70		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	32.09											
Intersection LOS	C											
Intersection V/C	0.689											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.571	3.011	2.999
Crosswalk LOS	F	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	475	608	942	425
d_b, Bicycle Delay [s]	34.88	29.05	16.80	37.21
I_b,int, Bicycle LOS Score for Intersection	1.777	2.396	2.788	2.382
Bicycle LOS	A	B	C	B

Sequence

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



**Intersection Level Of Service Report
Intersection 8: Veterans Pkwy / Long Meadow Dr**

Control Type:	Two-way stop	Delay (sec / veh):	3,599.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	7.667

Intersection Setup

Name	Veterans Pkwy			Long Meadow Dr			Veterans Pkwy			Long Meadow Dr		
Approach	Southbound			Westbound			Northeastbound			Southeastbound		
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	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	250.00	100.00	250.00	75.00	100.00	100.00	175.00	100.00	100.00	75.00	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]	45.00			25.00			45.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Veterans Pkwy			Long Meadow Dr			Veterans Pkwy			Long Meadow Dr		
Base Volume Input [veh/h]	77	1580	30	90	4	56	69	1117	59	15	0	45
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]	77	1580	30	90	4	56	69	1117	59	15	0	45
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	20	416	8	24	1	15	18	294	16	4	0	12
Total Analysis Volume [veh/h]	81	1663	32	95	4	59	73	1176	62	16	0	47
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.02	0.00	7.67	0.57	0.14	0.19	0.01	0.00	3.29	0.00	0.15
d_M, Delay for Movement [s/veh]	12.54	0.00	0.00	3599.35	581.05	78.04	16.60	0.00	0.00	2425.46	543.32	18.55
Movement LOS	B	A	A	F	F	F	C	A	A	F	F	C
95th-Percentile Queue Length [veh/ln]	0.50	0.00	0.00	13.06	3.48	3.48	0.69	0.00	0.00	3.24	0.52	0.52
95th-Percentile Queue Length [ft/ln]	12.62	0.00	0.00	326.38	87.10	87.10	17.35	0.00	0.00	81.06	13.07	13.07
d_A, Approach Delay [s/veh]	0.57			2208.02			0.92			629.82		
Approach LOS	A			F			A			F		
d_I, Intersection Delay [s/veh]	118.13											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 9: Double R Blvd / Double Diamond Pkwy

Control Type:	Signalized	Delay (sec / veh):	55.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.587

Intersection Setup

Name	Double Diamond Pkwy			Double Diamond Pkwy			Double R Blvd			Double R Blvd		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
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	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	200.00	100.00	200.00	275.00	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]	25.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Double Diamond Pkwy			Double Diamond Pkwy			Double R Blvd			Double R Blvd		
Base Volume Input [veh/h]	10	30	10	270	15	55	39	651	447	228	1582	40
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 [%]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
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	5	0	0	29	0	0	134	0	0	21
Total Hourly Volume [veh/h]	10	30	5	270	15	26	39	651	313	228	1582	19
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	3	8	1	71	4	7	10	171	82	60	416	5
Total Analysis Volume [veh/h]	11	32	5	284	16	27	41	685	329	240	1665	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			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]	35.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	7	0	0	8	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	4	0	0	4	0	6	8	0	4	8	0
Maximum Green [s]	0	15	0	0	30	0	12	35	0	20	35	0
Amber [s]	0.0	3.4	0.0	0.0	4.1	0.0	3.9	4.8	0.0	3.9	4.8	0.0
All red [s]	0.0	1.5	0.0	0.0	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	0	34	0	0	35	0	12	35	0	16	39	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.5	0.0	3.0	3.0	0.0	2.5	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	22	0	0	21	0	0	12	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.9	0.0	0.0	3.6	0.0	3.4	4.3	0.0	3.4	4.3	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			Yes		No	Yes		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

Lane Group Calculations

Lane Group	C	L	C	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.90	5.60	5.60	5.40	6.30	6.30	5.40	6.30	6.30
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
l2, Clearance Lost Time [s]	2.90	3.60	3.60	3.40	4.30	4.30	3.40	4.30	4.30
g_i, Effective Green Time [s]	4	30	30	5	53	53	11	59	59
g / C, Green / Cycle	0.03	0.25	0.25	0.04	0.44	0.44	0.09	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.03	0.09	0.09	0.02	0.19	0.20	0.13	0.45	0.45
s, saturation flow rate [veh/h]	1838	1802	1775	1802	3603	1609	1802	1892	1885
c, Capacity [veh/h]	64	451	444	68	1591	710	160	932	928
d1, Uniform Delay [s]	57.42	37.15	37.16	56.86	23.12	23.54	54.67	27.85	27.94
k, delay calibration	0.04	0.50	0.50	0.11	0.50	0.50	0.23	0.50	0.50
l, 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]	6.51	2.28	2.32	8.28	0.85	2.17	238.61	13.76	14.18
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	0.75	0.37	0.37	0.60	0.43	0.46	1.50	0.90	0.91
d, Delay for Lane Group [s/veh]	63.92	39.43	39.48	65.14	23.97	25.71	293.28	41.61	42.12
Lane Group LOS	E	D	D	E	C	C	F	D	D
Critical Lane Group	Yes	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.57	4.25	4.20	1.35	6.55	6.65	15.34	23.81	23.97
50th-Percentile Queue Length [ft/ln]	39.27	106.29	104.98	33.83	163.68	166.16	383.55	595.30	599.15
95th-Percentile Queue Length [veh/ln]	2.83	7.63	7.56	2.44	10.74	10.87	24.70	31.81	31.99
95th-Percentile Queue Length [ft/ln]	70.69	190.83	188.96	60.89	268.59	271.87	617.53	795.37	799.87

Movement, Approach, & Intersection Results

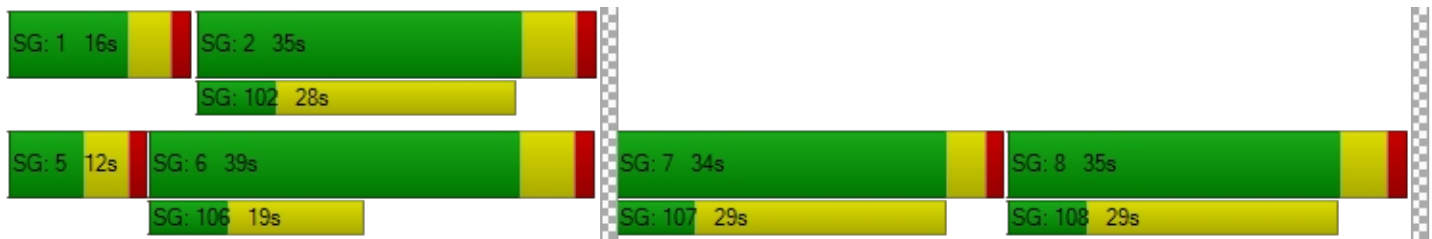
d_M, Delay for Movement [s/veh]	63.92	63.92	63.92	39.45	39.48	39.48	65.14	23.97	25.71	293.28	41.86	42.12
Movement LOS	E	E	E	D	D	D	E	C	C	F	D	D
d_A, Approach Delay [s/veh]	63.92			39.46			26.11			73.21		
Approach LOS	E			D			C			E		
d_I, Intersection Delay [s/veh]	54.98											
Intersection LOS	D											
Intersection V/C	0.587											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	1.797	2.409	3.456	3.133
Crosswalk LOS	A	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	485	490	478	545
d_b, Bicycle Delay [s]	34.43	34.20	34.73	31.76
I_b,int, Bicycle LOS Score for Intersection	1.647	2.147	2.541	3.165
Bicycle LOS	A	B	B	C

Sequence

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



Intersection Level Of Service Report
Intersection 10: Damonte Ranch Pkwy / Double R Blvd

Control Type:	Signalized	Delay (sec / veh):	74.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.756

Intersection Setup

Name	Steamboat Pkwy			Damonte Ranch Pkwy			Northwestbound			Double R Blvd		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
Lane Configuration	T T T			T T T T			T T			T T T T		
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	2	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	415.00	100.00	100.00	250.00	100.00	100.00	225.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	2	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	49.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			45.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Steamboat Pkwy			Damonte Ranch Pkwy						Double R Blvd		
Base Volume Input [veh/h]	13	945	361	727	1301	88	97	127	22	706	122	1073
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	108	0	0	46	0	0	11	0	0	322
Total Hourly Volume [veh/h]	13	945	253	727	1301	42	97	127	11	706	122	751
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	3	249	67	191	342	11	26	33	3	186	32	198
Total Analysis Volume [veh/h]	14	995	266	765	1369	44	102	134	12	743	128	791
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			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]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												1,6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	6	0	4	6	0	4	4	0	4	6	6
Maximum Green [s]	30	41	0	38	41	0	30	33	0	20	30	30
Amber [s]	3.9	4.8	0.0	3.9	4.8	0.0	3.9	4.8	0.0	3.9	4.8	4.8
All red [s]	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	1.5
Split [s]	10	38	0	21	49	0	13	40	0	21	48	48
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	13	0	0	7	0	0	13	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	35	0	0	20	0	0	0	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.4	4.3	0.0	3.4	4.3	0.0	3.4	4.3	0.0	3.4	4.3	4.3
Minimum Recall	No	No		No	Yes		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	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	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.40	6.30	6.30	5.40	6.30	6.30	5.40	6.30	5.40	6.30	5.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.40	4.30	4.30	3.40	4.30	4.30	3.40	4.30	3.40	4.30	0.00
g_i, Effective Green Time [s]	2	38	38	31	68	68	14	12	16	14	64
g / C, Green / Cycle	0.01	0.32	0.32	0.26	0.57	0.57	0.11	0.10	0.13	0.11	0.53
(v / s)_i Volume / Saturation Flow Rate	0.01	0.24	0.24	0.22	0.26	0.26	0.07	0.08	0.21	0.07	0.28
s, saturation flow rate [veh/h]	1781	3560	1675	3459	3560	1840	1417	1843	3459	1870	2813
c, Capacity [veh/h]	23	1130	532	904	2015	1042	197	178	450	212	1498
d1, Uniform Delay [s]	58.97	36.83	36.85	42.05	15.30	15.32	52.81	53.23	52.22	50.63	14.60
k, delay calibration	0.11	0.11	0.22	0.11	0.50	0.50	0.11	0.11	0.15	0.11	0.28
l, 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]	24.55	1.07	4.46	2.30	0.76	1.48	2.11	9.11	296.67	2.74	0.75
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	0.62	0.76	0.76	0.85	0.46	0.46	0.52	0.82	1.65	0.60	0.53
d, Delay for Lane Group [s/veh]	83.52	37.90	41.30	44.35	16.06	16.80	54.93	62.34	348.89	53.37	15.36
Lane Group LOS	F	D	D	D	B	B	D	E	F	D	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.58	11.38	11.23	10.63	7.07	7.56	3.11	4.77	25.10	3.73	5.81
50th-Percentile Queue Length [ft/ln]	14.45	284.47	280.80	265.85	176.82	188.93	77.75	119.24	627.44	93.32	145.26
95th-Percentile Queue Length [veh/ln]	1.04	16.91	16.73	15.98	11.43	12.07	5.60	8.35	39.62	6.72	9.76
95th-Percentile Queue Length [ft/ln]	26.00	422.78	418.20	399.55	285.86	301.64	139.95	208.78	990.44	167.98	244.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	83.52	38.37	41.30	44.35	16.30	16.80	54.93	62.34	62.34	348.89	53.37	15.36
Movement LOS	F	D	D	D	B	B	D	E	E	F	D	B
d_A, Approach Delay [s/veh]	39.48			26.16			59.29			167.39		
Approach LOS	D			C			E			F		
d_I, Intersection Delay [s/veh]	74.63											
Intersection LOS	E											
Intersection V/C	0.756											

Other Modes

g_Walk,mi, Effective Walk Time [s]	17.0	0.0	11.0	17.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.20	0.00	49.50	44.20
I_p,int, Pedestrian LOS Score for Intersection	3.317	0.000	2.129	3.742
Crosswalk LOS	C	F	B	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	528	712	562	695
d_b, Bicycle Delay [s]	32.49	24.90	31.03	25.55
I_b,int, Bicycle LOS Score for Intersection	2.320	2.783	1.987	4.833
Bicycle LOS	B	C	A	E

Sequence

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







Intersection Level Of Service Report

Intersection 11: Steamboat Pkwy / Damonte Ranch Pkwy

Control Type:	Signalized	Delay (sec / veh):	20.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.608

Intersection Setup

Name	Damonte Ranch Pkwy			Damonte Ranch Pkwy			Steamboat Pkwy			Steamboat Pkwy		
Approach	Northbound			Westbound			Northeastbound			Southeastbound		
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	2	0	0
Entry Pocket Length [ft]	150.00	100.00	100.00	150.00	100.00	100.00	150.00	100.00	100.00	250.00	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]	45.00			45.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Damonte Ranch Pkwy			Damonte Ranch Pkwy						Steamboat Pkwy		
	10	98	90	13	135	916	15	128	10	1568	178	10
Base Volume Input [veh/h]	10	98	90	13	135	916	15	128	10	1568	178	10
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	1.00	1.00	1.00	2.00	1.00	2.00	2.00	2.00	1.00	1.00	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	47	0	0	275	0	0	5	0	0	5
Total Hourly Volume [veh/h]	10	98	43	13	135	641	15	128	5	1568	178	5
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	3	26	11	3	36	169	4	34	1	413	47	1
Total Analysis Volume [veh/h]	11	103	45	14	142	675	16	135	5	1651	187	5
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			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]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	3	8	8	7	4	0	1	6	0
Auxiliary Signal Groups						1,8						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	4	0	4	4	4	4	4	0	6	4	0
Maximum Green [s]	20	30	0	20	30	30	20	30	0	30	30	0
Amber [s]	3.5	4.3	0.0	3.5	3.5	3.5	3.5	3.5	0.0	4.3	3.5	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	1.5	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	9	41	0	29	58	58	9	38	0	12	44	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	5	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	18	30	30	0	26	0	0	18	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]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.8	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.8	3.0	0.0
Minimum Recall	No	No		No	No	No	No	No		Yes	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	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	R	L	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.80	5.80	5.00	5.00	5.80	5.00	5.00	5.80	5.00	5.00
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]	3.00	3.80	3.80	3.00	3.00	0.00	3.00	3.00	3.80	3.00	3.00
g_i, Effective Green Time [s]	1	7	7	2	13	94	2	13	76	84	84
g / C, Green / Cycle	0.01	0.06	0.06	0.01	0.11	0.79	0.01	0.11	0.64	0.70	0.70
(v / s)_i Volume / Saturation Flow Rate	0.01	0.04	0.04	0.01	0.08	0.24	0.01	0.08	0.47	0.05	0.05
s, saturation flow rate [veh/h]	1781	1885	1700	1795	1870	2836	1781	1858	3486	1885	1868
c, Capacity [veh/h]	19	116	104	23	205	2229	26	206	2213	1317	1305
d1, Uniform Delay [s]	59.09	55.08	55.25	58.93	51.51	3.61	58.84	51.32	15.20	5.74	5.75
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.11	0.50	0.11	0.11
l, 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]	23.63	6.02	8.14	21.96	4.18	0.35	22.25	3.91	2.34	0.02	0.02
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	0.57	0.65	0.70	0.60	0.69	0.30	0.62	0.68	0.75	0.07	0.07
d, Delay for Lane Group [s/veh]	82.72	61.10	63.39	80.89	55.69	3.96	81.08	55.23	17.54	5.77	5.77
Lane Group LOS	F	E	E	F	E	A	F	E	B	A	A
Critical Lane Group	No	No	Yes	No	No	Yes	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.45	2.37	2.35	0.56	4.25	1.68	0.64	4.28	14.89	0.71	0.71
50th-Percentile Queue Length [ft/ln]	11.32	59.15	58.65	13.93	106.33	42.03	16.06	106.90	372.28	17.70	17.68
95th-Percentile Queue Length [veh/ln]	0.81	4.26	4.22	1.00	7.64	3.03	1.16	7.67	21.22	1.27	1.27
95th-Percentile Queue Length [ft/ln]	20.37	106.46	105.57	25.07	190.88	75.66	28.92	191.69	530.49	31.86	31.82

Movement, Approach, & Intersection Results

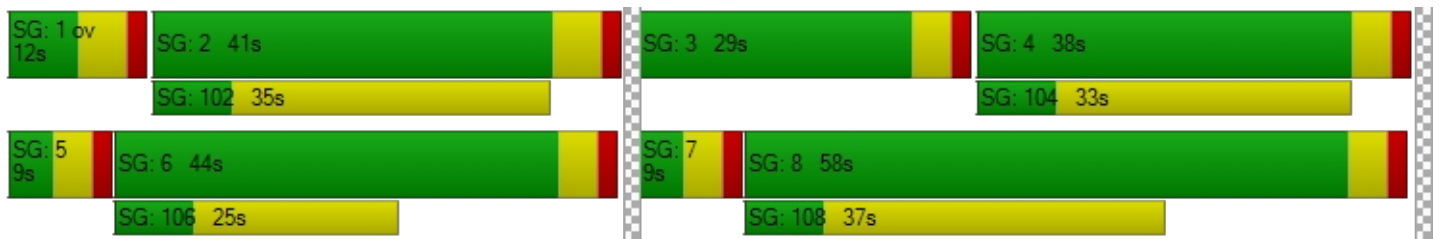
d_M, Delay for Movement [s/veh]	82.72	61.72	63.39	80.89	55.69	3.96	81.08	55.23	55.23	17.54	5.77	5.77
Movement LOS	F	E	E	F	E	A	F	E	E	B	A	A
d_A, Approach Delay [s/veh]	63.65			14.09			57.88			16.32		
Approach LOS	E			B			E			B		
d_I, Intersection Delay [s/veh]	20.38											
Intersection LOS	C											
Intersection V/C	0.608											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	2.502	3.585	2.066	3.089
Crosswalk LOS	B	D	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	587	883	550	650
d_b, Bicycle Delay [s]	29.96	18.70	31.54	27.34
I_b,int, Bicycle LOS Score for Intersection	1.730	3.385	1.825	3.084
Bicycle LOS	A	C	A	C

Sequence

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



Intersection Level Of Service Report
Intersection 12: Veterans Pkwy / Steamboat Pkwy

Control Type:	Signalized	Delay (sec / veh):	100.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.989

Intersection Setup

Name	Veterans Pkwy			Veterans Pkwy			Damonte Ranch Pkwy			Steamboat Pkwy		
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	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	200.00	100.00	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]	45.00			45.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Veterans Pkwy			Veterans Pkwy			Damonte Ranch Pkwy			Steamboat Pkwy		
Base Volume Input [veh/h]	300	716	123	282	837	253	345	1041	743	92	599	65
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 [%]	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
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	64	0	0	76	0	0	223	0	0	34
Total Hourly Volume [veh/h]	300	716	59	282	837	177	345	1041	520	92	599	31
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	79	188	16	74	220	47	91	274	137	24	158	8
Total Analysis Volume [veh/h]	316	754	62	297	881	186	363	1096	547	97	631	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			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]	20.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Overlap	ProtPer	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	5	2	0	1	6	6	7	4	4	3	8	0
Auxiliary Signal Groups						6,7			4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	4	0	4	4	4	4	6	6	4	6	0
Maximum Green [s]	30	30	0	15	30	30	15	30	30	15	30	0
Amber [s]	3.9	4.8	0.0	3.9	4.8	4.8	3.9	4.8	4.8	3.2	4.8	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0
Split [s]	22	32	0	20	30	30	30	53	53	15	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	7	0	7	0
Pedestrian Clearance [s]	0	17	0	0	15	15	0	23	23	0	23	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]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.4	4.3	0.0	3.4	4.3	4.3	3.4	4.3	4.3	2.7	4.3	0.0
Minimum Recall	No	Yes		No	Yes	Yes	No	No	No	No	Yes	
Maximum Recall	No	No		No	No	No	Yes	Yes	Yes	No	No	
Pedestrian Recall	No	No		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	R	L	C	R	L	C	C
C, Cycle Length [s]	126	126	126	126	126	126	126	126	126	126	126	126
L, Total Lost Time per Cycle [s]	6.30	6.30	6.30	6.30	6.30	5.40	6.30	6.30	5.40	6.30	6.30	6.30
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	0.00
l2, Clearance Lost Time [s]	0.00	4.30	4.30	0.00	4.30	0.00	0.00	4.30	0.00	0.00	4.30	4.30
g_i, Effective Green Time [s]	63	43	43	63	30	51	50	46	79	50	30	30
g / C, Green / Cycle	0.50	0.34	0.34	0.50	0.24	0.41	0.40	0.36	0.63	0.40	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.26	0.22	0.22	0.30	0.24	0.12	0.31	0.58	0.34	0.16	0.18	0.18
s, saturation flow rate [veh/h]	1205	1889	1840	995	3598	1606	1152	1889	1606	589	1889	1857
c, Capacity [veh/h]	535	645	628	459	860	656	418	686	1012	135	450	443
d1, Uniform Delay [s]	26.33	34.86	34.87	22.58	47.75	24.81	31.83	39.95	13.02	42.95	44.24	44.25
k, delay calibration	0.47	0.34	0.34	0.50	0.11	0.11	0.50	0.50	0.50	0.50	0.22	0.22
l, 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
d2, Incremental Delay [s]	4.44	3.36	3.46	6.87	20.98	0.23	20.88	275.31	2.07	28.12	4.98	5.09
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.59	0.64	0.64	0.65	1.02	0.28	0.87	1.60	0.54	0.72	0.74	0.74
d, Delay for Lane Group [s/veh]	30.77	38.21	38.32	29.45	68.73	25.04	52.70	315.26	15.09	71.07	49.22	49.33
Lane Group LOS	C	D	D	C	F	C	D	F	B	E	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.00	10.88	10.62	5.83	15.48	3.63	10.61	73.31	8.88	2.87	10.16	10.00
50th-Percentile Queue Length [ft/ln]	149.93	271.95	265.42	145.73	387.06	90.74	265.21	1832.68	222.08	71.84	253.92	250.07
95th-Percentile Queue Length [veh/ln]	10.01	16.29	15.96	9.79	22.25	6.53	15.95	112.06	13.77	5.17	15.38	15.19
95th-Percentile Queue Length [ft/ln]	250.33	407.17	399.01	244.72	556.20	163.33	398.74	2801.62	344.28	129.31	384.58	379.75

Movement, Approach, & Intersection Results

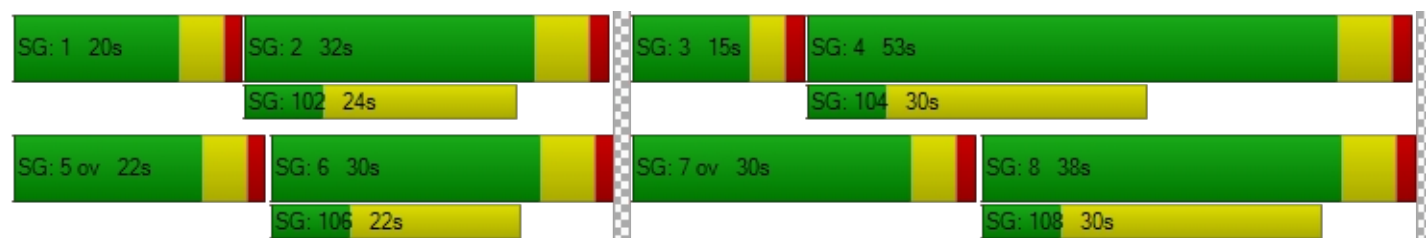
d_M, Delay for Movement [s/veh]	30.77	38.26	38.32	29.45	68.73	25.04	52.70	315.26	15.09	71.07	49.27	49.33
Movement LOS	C	D	D	C	F	C	D	F	B	E	D	D
d_A, Approach Delay [s/veh]	36.18			54.22			185.90			52.05		
Approach LOS	D			D			F			D		
d_I, Intersection Delay [s/veh]	100.22											
Intersection LOS	F											
Intersection V/C	0.989											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	3.318			3.346			3.457			3.002		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	428			395			778			528		
d_b, Bicycle Delay [s]	37.05			38.64			22.39			32.49		
I_b,int, Bicycle LOS Score for Intersection	2.546			2.748			5.237			2.215		
Bicycle LOS	B			B			F			B		

Sequence

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



Intersection Level Of Service Report
Intersection 13: Rio Wrangler Pkwy / Steamboat Pkwy

Control Type:	All-way stop	Delay (sec / veh):	75.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.258

Intersection Setup

Name	Rio Wrangler Pkwy			Rio Wrangler Pkwy			Steamboat Pkwy			Steamboat Pkwy		
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	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	100.00	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]	45.00			45.00			45.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Rio Wrangler Pkwy			Rio Wrangler Pkwy			Steamboat Pkwy			Steamboat Pkwy		
Base Volume Input [veh/h]	169	200	3	5	140	271	537	30	442	5	10	5
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 [%]	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
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]	169	200	3	5	140	271	537	30	442	5	10	5
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	53	1	1	37	71	141	8	116	1	3	1
Total Analysis Volume [veh/h]	178	211	3	5	147	285	565	32	465	5	11	5
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	390	413	448	565	480	531	353
Degree of Utilization, x	0.46	0.52	0.98	1.26	0.07	0.88	0.06

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.32	2.90	12.17	23.51	0.21	9.73	0.19
95th-Percentile Queue Length [ft]	57.96	72.41	304.24	587.76	5.34	243.33	4.73
Approach Delay [s/veh]	20.01		65.53	102.00		13.86	
Approach LOS	C		F	F		B	
Intersection Delay [s/veh]	75.88						
Intersection LOS	F						

Intersection Level Of Service Report
Intersection 14: Rio Wrangler Pkwy / McCauley Ranch Blvd

Control Type:	Two-way stop	Delay (sec / veh):	16.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.050

Intersection Setup

Name	Rio Wrangler Pkwy		Rio Wrangler Pkwy		MCCauley Ranch Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↕↔		↔↕		↔↔	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	110.00	100.00	125.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00		30.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Rio Wrangler Pkwy		Rio Wrangler Pkwy		MCCauley Ranch Blvd	
Base Volume Input [veh/h]	222	25	128	275	15	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.50	1.50	1.50	1.50	1.50	1.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	222	25	128	275	15	84
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	7	34	72	4	22
Total Analysis Volume [veh/h]	234	26	135	289	16	88
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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





Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.10	0.00	0.05	0.11
d_M, Delay for Movement [s/veh]	0.00	0.00	8.07	0.00	16.79	10.01
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.34	0.00	0.16	0.37
95th-Percentile Queue Length [ft/ln]	0.00	0.00	8.62	0.00	3.92	9.15
d_A, Approach Delay [s/veh]	0.00		2.57		11.05	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.84					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 15: S. Virginia St / Geiger Grade Rd

Control Type:	Signalized	Delay (sec / veh):	137.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.974

Intersection Setup

Name	Geiger Grade Rd			Mt. Rose Hwy			S. Virginia St			S. Virginia St		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
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	1	2	0	1	2	0	1	2	0	0
Entry Pocket Length [ft]	350.00	100.00	700.00	725.00	100.00	250.00	525.00	100.00	100.00	600.00	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]	35.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Geiger Grade Rd			Mt. Rose Hwy			S. Virginia St			S. Virginia St		
Base Volume Input [veh/h]	158	660	863	261	938	109	59	437	211	1683	809	293
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 [%]	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
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	259	0	0	57	0	0	63	0	0	88
Total Hourly Volume [veh/h]	158	660	604	261	938	52	59	437	148	1683	809	205
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	42	174	159	69	247	14	16	115	39	443	213	54
Total Analysis Volume [veh/h]	166	695	636	275	987	55	62	460	156	1772	852	216
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	0	3	8	0	5	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	5	5	5	5
Maximum Green [s]	30	35	0	20	35	0	25	40	40	40	40	40
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	5.0	5.0	4.0	5.0	5.0
All red [s]	1.0	1.5	0.0	1.5	1.5	0.0	1.0	2.0	2.0	2.0	2.0	2.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	7
Pedestrian Clearance [s]	0	28	0	0	28	0	0	18	18	0	18	18
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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	3.5	0.0	3.5	3.5	0.0	3.0	5.0	5.0	4.0	5.0	5.0
Minimum Recall	No	No		No	No		No	Yes		No	Yes	
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	L	C	L	C	R	L	C	R
C, Cycle Length [s]	128	128	128	128	128	128	128	128	128	128
L, Total Lost Time per Cycle [s]	5.00	5.50	5.50	5.50	5.00	7.00	7.00	6.00	7.00	7.00
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
l2, Clearance Lost Time [s]	3.00	3.50	3.50	3.50	3.00	5.00	5.00	4.00	5.00	5.00
g_i, Effective Green Time [s]	14	36	12	35	5	16	16	40	52	52
g / C, Green / Cycle	0.11	0.28	0.10	0.27	0.04	0.12	0.12	0.31	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.09	0.19	0.08	0.28	0.02	0.09	0.10	0.51	0.17	0.13
s, saturation flow rate [veh/h]	1794	3586	3484	3586	3484	5131	1601	3484	5131	1601
c, Capacity [veh/h]	197	1006	340	976	123	637	199	1084	2092	653
d1, Uniform Delay [s]	56.15	41.27	56.83	46.77	60.89	54.16	54.63	44.27	27.03	26.06
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.30	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.47	0.86	4.62	16.10	3.15	1.57	6.68	288.10	0.13	0.29
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
Rp, platoon ratio	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

Lane Group Results

X, volume / capacity	0.84	0.69	0.81	1.01	0.50	0.72	0.79	1.63	0.41	0.33
d, Delay for Lane Group [s/veh]	65.63	42.13	61.45	62.87	64.04	55.73	61.31	332.37	27.16	26.36
Lane Group LOS	E	D	E	F	E	E	E	F	C	C
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.76	9.84	4.49	17.19	1.03	4.76	5.15	59.89	6.00	4.44
50th-Percentile Queue Length [ft/ln]	143.99	245.90	112.30	429.87	25.69	118.90	128.86	1497.28	150.02	110.88
95th-Percentile Queue Length [veh/ln]	9.70	14.98	7.97	24.16	1.85	8.33	8.88	92.38	10.02	7.89
95th-Percentile Queue Length [ft/ln]	242.39	374.49	199.20	603.92	46.24	208.32	221.95	2309.56	250.46	197.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.63	42.13	0.00	61.45	62.87	0.00	64.04	55.73	61.31	332.37	27.16	26.36
Movement LOS	E	D		E	F		E	E	E	F	C	C
d_A, Approach Delay [s/veh]	46.66			62.56			57.77			217.54		
Approach LOS	D			E			E			F		
d_I, Intersection Delay [s/veh]	137.58											
Intersection LOS	F											
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 [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	69.38			69.38			69.38			69.38		
I_p,int, Pedestrian LOS Score for Intersection	3.208			3.107			3.252			3.597		
Crosswalk LOS	C			C			C			D		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	438			438			500			500		
d_b, Bicycle Delay [s]	48.83			48.83			45.00			45.00		
I_b,int, Bicycle LOS Score for Intersection	2.270			2.601			1.967			3.170		
Bicycle LOS	B			B			A			C		

Sequence

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



MOVEMENT SUMMARY

 **Site: Geiger/Veterans PM**

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed mph
		Total veh/h	HV %				Vehicles veh	Distance ft			
South: Geiger Grade											
3	L2	839	2.0	1.108	98.7	LOS F	31.0	788.3	1.00	2.36	14.5
8	T1	145	2.0	1.108	98.7	LOS F	31.0	788.3	1.00	2.36	14.5
18	R2	213	2.0	1.108	98.7	LOS F	31.0	788.3	1.00	2.36	14.2
Approach		1197	2.0	1.108	98.7	LOS F	31.0	788.3	1.00	2.36	14.5
East: Veterans Pkwy											
1	L2	381	2.0	1.203	135.5	LOS F	39.8	1010.1	1.00	3.07	11.9
6	T1	812	2.0	1.203	134.3	LOS F	41.4	1050.9	1.00	3.14	12.0
16	R2	36	2.0	1.203	133.8	LOS F	41.4	1050.9	1.00	3.16	11.8
Approach		1228	2.0	1.203	134.6	LOS F	41.4	1050.9	1.00	3.12	11.9
North: Private Access											
7	L2	162	2.0	1.947	465.6	LOS F	98.3	2497.3	1.00	5.09	4.4
4	T1	226	2.0	1.947	465.6	LOS F	98.3	2497.3	1.00	5.09	4.4
14	R2	214	2.0	1.947	465.6	LOS F	98.3	2497.3	1.00	5.09	4.4
Approach		602	2.0	1.947	465.6	LOS F	98.3	2497.3	1.00	5.09	4.4
West: Veterans Pkwy											
5	L2	291	2.0	2.109	520.1	LOS F	240.8	6117.4	1.00	6.72	4.0
2	T1	988	2.0	2.109	520.1	LOS F	240.8	6117.4	1.00	6.72	4.0
12	R2	1441	2.0	2.109	520.1	LOS F	240.8	6117.4	1.00	6.72	3.9
Approach		2720	2.0	2.109	520.1	LOS F	240.8	6117.4	1.00	6.72	3.9
All Vehicles		5747	2.0	2.109	344.3	LOS F	240.8	6117.4	1.00	4.87	5.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

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 HCM 2010).

Roundabout Capacity Model: US HCM 2010.

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.

The results of iterative calculations indicate a somewhat unstable solution. See the Diagnostics section in the Detailed Output report.

Intersection Level Of Service Report
Intersection 1: S. Virginia St / I-580 North Ramps

Control Type:	Signalized	Delay (sec / veh):	25.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.641

Intersection Setup

Name	S. Virginia St		S. Virginia St		North Off-Ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑				↗	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No				No	
Crosswalk	No		No		No	

Volumes

Name	S. Virginia St		S. Virginia St		North Off-Ramp	
Base Volume Input [veh/h]	1022	0	0	0	0	584
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.70	2.00	2.00	2.70	2.00	2.70
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	175
Total Hourly Volume [veh/h]	1022	0	0	0	0	409
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	269	0	0	0	0	108
Total Analysis Volume [veh/h]	1076	0	0	0	0	431
Presence of On-Street Parking	No	No			No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing in	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
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]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	0	0	4
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	-	-
Minimum Green [s]	5	0	0	0	0	5
Maximum Green [s]	50	0	0	0	0	30
Amber [s]	3.5	0.0	0.0	0.0	0.0	3.5
All red [s]	1.5	0.0	0.0	0.0	0.0	1.5
Split [s]	50	0	0	0	0	40
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	3.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No					No
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	3.0	0.0	0.0	0.0	0.0	3.0
Minimum Recall	No					No
Maximum Recall	Yes					No
Pedestrian Recall	No					No
Detector Location [ft]	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
I, Upstream Filtering Factor	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	C	R
C, Cycle Length [s]	90	90
L, Total Lost Time per Cycle [s]	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00
g_i, Effective Green Time [s]	51	29
g / C, Green / Cycle	0.57	0.32
(v / s)_i Volume / Saturation Flow Rate	0.34	0.30
s, saturation flow rate [veh/h]	3186	1422
c, Capacity [veh/h]	1814	455
d1, Uniform Delay [s]	12.60	29.89
k, delay calibration	0.50	0.36
l, Upstream Filtering Factor	1.00	1.00
d2, Incremental Delay [s]	1.43	25.31
d3, Initial Queue Delay [s]	0.00	0.00
Rp, platoon ratio	1.00	1.00
PF, progression factor	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.95
d, Delay for Lane Group [s/veh]	14.03	55.20
Lane Group LOS	B	E
Critical Lane Group	Yes	Yes
50th-Percentile Queue Length [veh/ln]	6.22	11.50
50th-Percentile Queue Length [ft/ln]	155.50	287.58
95th-Percentile Queue Length [veh/ln]	10.31	17.07
95th-Percentile Queue Length [ft/ln]	257.75	426.63

Intersection Level Of Service Report
Intersection 5: S. Meadows Pkwy / Double Diamond Pkwy

Control Type:	Signalized	Delay (sec / veh):	37.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.394

Intersection Setup

Name	S. Meadows Pkwy				S. Meadows Pkwy			Double Diamond Pkwy			Double Diamond Pkwy		
Approach	Northeastbound				Southwestbound			Northwestbound			Southeastbound		
Lane Configuration	[Diagram]				[Diagram]			[Diagram]			[Diagram]		
Turning Movement	U-tu	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	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	0	1	1	0	0	2	0	0
Entry Pocket Length [ft]	175.0	100.0	100.0	175.0	100.00	100.00	200.00	250.00	100.00	100.00	200.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	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	0.00
Speed [mph]	30.00				30.00			35.00			35.00		
Grade [%]	0.00				0.00			0.00			0.00		
Curb Present	No				No			No			No		
Crosswalk	Yes				Yes			Yes			Yes		

Volumes

Name	S. Meadows Pkwy				S. Meadows Pkwy			Double Diamond Pkwy			Double Diamond Pkwy		
	29	171	373	70	28	958	1167	205	321	43	239	94	45
Base Volume Input [veh/h]	29	171	373	70	28	958	1167	205	321	43	239	94	45
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40
Growth Factor	1.000	1.000	1.000	1.000	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	0
Site-Generated Trips [veh/h]	0	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	0
Pass-by Trips [veh/h]	0	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	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	36	0	0	350	0	0	22	0	0	23
Total Hourly Volume [veh/h]	29	171	373	34	28	958	817	205	321	21	239	94	22
Peak Hour Factor	0.950	0.950	0.950	0.950	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	45	98	9	7	252	215	54	84	6	63	25	6
Total Analysis Volume [veh/h]	31	180	393	36	29	1008	860	216	338	22	252	99	23
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	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0				0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0				0			0			0		
v_co, Outbound Pedestrian Volume crossing	0				0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0				0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0				0			0			0		
Bicycle Volume [bicycles/h]	0				0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Prote	Permi	Unsig	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	7	4	0	3	8	8	5	2	0	1	6	0
Auxiliary Signal Groups							1,8						
Lead / Lag	-	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	6	0	6	6	6	4	6	0	4	6	0
Maximum Green [s]	0	35	35	0	16	35	35	25	30	0	25	30	0
Amber [s]	0.0	3.2	4.1	0.0	3.2	4.1	4.1	3.3	4.2	0.0	3.3	4.2	0.0
All red [s]	0.0	1.5	1.5	0.0	1.5	1.5	1.5	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	2.5	3.0	0.0	2.0	3.0	3.0	2.5	2.5	0.0	2.5	2.5	0.0
Walk [s]	0	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	19	0	0	18	18	0	20	0	0	17	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	0.0
Rest In Walk			No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.7	3.6	0.0	2.7	3.6	3.6	2.8	3.7	0.0	2.8	3.7	0.0
Minimum Recall		No	Yes		No	Yes	Yes	No	No		No	No	
Maximum Recall		No	No		No	No	No	No	No		No	No	
Pedestrian Recall		No	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	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	107	107	107	107	107	107	107	107	107	107	107
L, Total Lost Time per Cycle [s]	4.70	5.60	4.70	5.60	4.80	4.80	5.70	5.70	4.80	5.70	5.70
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]	2.70	3.60	2.70	3.60	0.00	2.80	3.70	3.70	2.80	3.70	3.70
g_i, Effective Green Time [s]	15	45	3	33	64	15	13	13	25	23	23
g / C, Green / Cycle	0.14	0.42	0.03	0.31	0.60	0.14	0.12	0.12	0.23	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.12	0.11	0.02	0.28	0.54	0.12	0.10	0.10	0.07	0.05	0.01
s, saturation flow rate [veh/h]	1775	3549	1775	3549	1584	1775	1864	1824	3447	1864	1584
c, Capacity [veh/h]	246	1488	58	1113	950	250	223	218	806	397	337
d1, Uniform Delay [s]	45.02	20.27	50.83	35.17	18.71	44.93	45.90	45.92	33.83	34.97	33.60
k, delay calibration	0.08	0.11	0.04	0.11	0.50	0.08	0.08	0.08	0.08	0.08	0.08
l, 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]	6.47	0.09	2.46	3.13	13.66	6.67	5.37	5.58	0.16	0.24	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	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	0.86	0.26	0.50	0.91	0.90	0.87	0.82	0.82	0.31	0.25	0.07
d, Delay for Lane Group [s/veh]	51.49	20.36	53.29	38.30	32.37	51.60	51.27	51.50	34.00	35.22	33.67
Lane Group LOS	D	C	D	D	C	D	D	D	C	D	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	5.87	3.19	0.80	12.78	20.48	5.96	4.96	4.89	2.68	2.14	0.48
50th-Percentile Queue Length [ft/ln]	146.74	79.71	20.00	319.55	511.99	149.12	124.01	122.13	67.03	53.51	11.94
95th-Percentile Queue Length [veh/ln]	9.84	5.74	1.44	18.65	27.90	9.97	8.61	8.51	4.83	3.85	0.86
95th-Percentile Queue Length [ft/ln]	246.07	143.47	36.01	466.14	697.54	249.26	215.32	212.75	120.66	96.32	21.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.49	51.49	20.36	0.00	53.29	38.30	32.37	51.60	51.38	51.50	34.00	35.22	33.67
Movement LOS	D	D	C		D	D	C	D	D	D	C	D	C
d_A, Approach Delay [s/veh]	31.24			35.85			51.47			34.30			
Approach LOS	C			D			D			C			
d_I, Intersection Delay [s/veh]	37.48												
Intersection LOS	D												
Intersection V/C	0.394												

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	2.883	3.442	2.383	2.902
Crosswalk LOS	C	C	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	583	500	500
d_b, Bicycle Delay [s]	30.10	30.10	33.75	33.75
I_b,int, Bicycle LOS Score for Intersection	1.909	3.413	2.053	2.215
Bicycle LOS	A	C	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 6: S. Meadows Pkwy / Wilbur May Pkwy

Control Type:	Signalized	Delay (sec / veh):	27.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.807

Intersection Setup

Name	Wilbur May Pkwy		S. Meadows Pkwy		S. Meadows Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	⇐⇐		⇐⇐		⇐⇐⇐	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	1	0
Entry Pocket Length [ft]	75.00	100.00	100.00	100.00	125.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Wilbur May Pkwy		S. Meadows Pkwy		S. Meadows Pkwy	
Base Volume Input [veh/h]	290	334	497	158	322	1861
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.80	2.80	2.80	2.80	2.80	2.80
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	100	0	82	0	0
Total Hourly Volume [veh/h]	290	234	497	76	322	1861
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	62	131	20	85	490
Total Analysis Volume [veh/h]	305	246	523	80	339	1959
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing in	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		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]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	3	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	43	0	18	0	59	77
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	15	0	9	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	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
I, Upstream Filtering Factor	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	R	C	C	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	26	26	55	55	28	86
g / C, Green / Cycle	0.21	0.21	0.46	0.46	0.23	0.72
(v / s)_i Volume / Saturation Flow Rate	0.19	0.17	0.18	0.19	0.21	0.62
s, saturation flow rate [veh/h]	1593	1421	1672	1597	1593	3184
c, Capacity [veh/h]	340	303	762	728	368	2293
d1, Uniform Delay [s]	45.91	44.89	21.66	21.88	45.07	12.21
k, delay calibration	0.16	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.59	5.43	1.54	1.74	9.79	4.33
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.81	0.40	0.41	0.92	0.85
d, Delay for Lane Group [s/veh]	57.50	50.32	23.20	23.62	54.86	16.54
Lane Group LOS	E	D	C	C	D	B
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	9.81	7.33	5.85	5.94	10.70	17.22
50th-Percentile Queue Length [ft/ln]	245.20	183.25	146.37	148.45	267.41	430.53
95th-Percentile Queue Length [veh/ln]	14.94	11.77	9.82	9.93	16.06	24.03
95th-Percentile Queue Length [ft/ln]	373.60	294.25	245.57	248.35	401.50	600.67

Movement, Approach, & Intersection Results

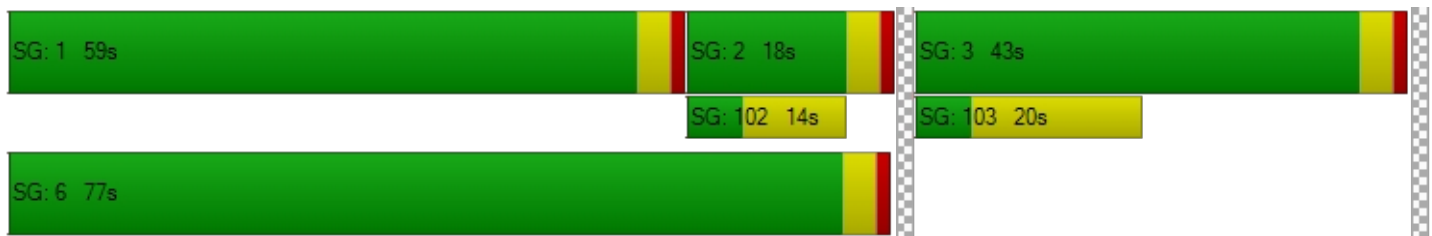
d_M, Delay for Movement [s/veh]	57.50	50.32	23.38	23.62	54.86	16.54
Movement LOS	E	D	C	C	D	B
d_A, Approach Delay [s/veh]	54.29		23.41		22.19	
Approach LOS	D		C		C	
d_I, Intersection Delay [s/veh]	27.53					
Intersection LOS	C					
Intersection V/C	0.807					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34
I_p,int, Pedestrian LOS Score for Intersection	2.534	3.102	3.036
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	650	233	1217
d_b, Bicycle Delay [s]	27.34	46.82	9.20
I_b,int, Bicycle LOS Score for Intersection	1.560	2.125	3.455
Bicycle LOS	A	B	C

Sequence

Ring 1	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Veterans Pkwy / Long Meadow Dr

Control Type:	Signalized	Delay (sec / veh):	51.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.683

Intersection Setup

Name	Veterans Pkwy			Veterans Pkwy			Long Meadow Dr			Long Meadow Dr		
Approach	Northbound			Southbound			Westbound			Southeastbound		
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	1	1	0	0	1	0	0
Entry Pocket Length [ft]	175.00	100.00	100.00	250.00	100.00	250.00	75.00	100.00	100.00	75.00	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]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Veterans Pkwy			Veterans Pkwy			Long Meadow Dr			Long Meadow Dr		
Base Volume Input [veh/h]	58	1589	148	99	1418	15	129	5	110	15	5	116
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 [%]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	58	1589	148	99	1418	15	129	5	110	15	5	116
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	15	418	39	26	373	4	34	1	29	4	1	31
Total Analysis Volume [veh/h]	61	1673	156	104	1493	16	136	5	116	16	5	122
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			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]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.5	3.5	0.0	3.5	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0
Split [s]	37	75	0	13	51	0	0	32	0	0	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	15	0	0	20	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]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C
C, Cycle Length [s]	66	66	66	66	66	66	66	66	66	66
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	30	30	5	32	32	16	16	16	16
g / C, Green / Cycle	0.05	0.45	0.45	0.08	0.48	0.48	0.24	0.24	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.03	0.50	0.51	0.06	0.43	0.01	0.11	0.08	0.01	0.08
s, saturation flow rate [veh/h]	1744	1831	1777	1744	3486	1556	1237	1566	1244	1566
c, Capacity [veh/h]	89	832	807	136	1677	749	283	377	289	377
d1, Uniform Delay [s]	30.82	18.02	18.02	29.86	15.55	8.98	27.38	20.63	24.49	20.71
k, delay calibration	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.99	62.72	74.15	8.70	1.81	0.01	1.26	0.49	0.08	0.52
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
Rp, platoon ratio	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

Lane Group Results

X, volume / capacity	0.69	1.10	1.13	0.77	0.89	0.02	0.48	0.32	0.06	0.34
d, Delay for Lane Group [s/veh]	39.81	80.74	92.17	38.56	17.37	9.00	28.64	21.11	24.57	21.24
Lane Group LOS	D	F	F	D	B	A	C	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.10	24.35	26.20	1.81	8.22	0.10	2.10	1.53	0.22	1.61
50th-Percentile Queue Length [ft/ln]	27.47	608.72	654.98	45.17	205.58	2.47	52.54	38.22	5.44	40.32
95th-Percentile Queue Length [veh/ln]	1.98	34.77	37.73	3.25	12.93	0.18	3.78	2.75	0.39	2.90
95th-Percentile Queue Length [ft/ln]	49.44	869.18	943.31	81.30	323.15	4.45	94.57	68.80	9.80	72.57

Movement, Approach, & Intersection Results

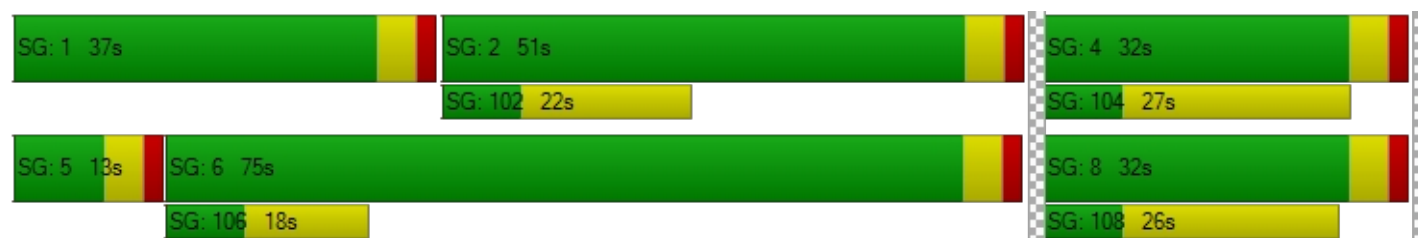
d_M, Delay for Movement [s/veh]	39.81	85.91	92.17	38.56	17.37	9.00	28.64	21.11	21.11	24.57	21.24	21.24
Movement LOS	D	F	F	D	B	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	84.94			18.65			25.10			21.61		
Approach LOS	F			B			C			C		
d_I, Intersection Delay [s/veh]	51.28											
Intersection LOS	D											
Intersection V/C	0.683											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	3.572			3.323			2.095			2.015		
Crosswalk LOS	D			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1167			767			450			450		
d_b, Bicycle Delay [s]	10.42			22.82			36.04			36.04		
I_b,int, Bicycle LOS Score for Intersection	3.119			2.890			1.984			1.796		
Bicycle LOS	C			C			A			A		

Sequence

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



Intersection Level Of Service Report
Intersection 10: Damonte Ranch Pkwy / Double R Blvd

Control Type:	Signalized	Delay (sec / veh):	76.5
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.821

Intersection Setup

Name	Steamboat Pkwy			Damonte Ranch Pkwy			Northwestbound			Double R Blvd		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
Lane Configuration	1 1 1 1			1 1 1 1			1 1			1 1 1 1		
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	1	2	0	0	1	0	0	1	0	2
Entry Pocket Length [ft]	150.00	100.00	150.00	415.00	100.00	100.00	250.00	100.00	100.00	225.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	49.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			45.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Steamboat Pkwy			Damonte Ranch Pkwy						Double R Blvd		
Base Volume Input [veh/h]	11	1632	404	586	565	130	130	170	20	237	172	757
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	121	0	0	68	0	0	11	0	0	227
Total Hourly Volume [veh/h]	11	1632	283	586	565	62	130	170	9	237	172	530
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	3	429	74	154	149	16	34	45	2	62	45	139
Total Analysis Volume [veh/h]	12	1718	298	617	595	65	137	179	9	249	181	558
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		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing in		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			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]	75.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												1,6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lag	-	-
Minimum Green [s]	4	6	0	4	6	0	4	4	0	4	6	6
Maximum Green [s]	30	41	0	38	41	0	30	33	0	20	30	30
Amber [s]	3.9	4.8	0.0	3.9	4.8	0.0	3.9	4.8	0.0	3.9	4.8	4.8
All red [s]	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	1.5
Split [s]	11	43	0	26	58	0	21	40	0	11	30	30
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	1.0	0.0	3.0	3.0	3.0
Walk [s]	0	13	0	0	7	0	0	13	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	35	0	0	20	0	0	0	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.4	4.3	0.0	3.4	4.3	0.0	3.4	4.3	0.0	3.4	4.3	4.3
Minimum Recall	No	Yes		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	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	R	L	C	C	L	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.40	6.30	6.30	5.40	6.30	6.30	5.40	6.30	5.40	6.30	5.85
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]	3.40	4.30	4.30	3.40	4.30	4.30	3.40	4.30	3.40	4.30	0.00
g_i, Effective Green Time [s]	1	37	37	26	62	62	11	14	20	23	56
g / C, Green / Cycle	0.01	0.31	0.31	0.22	0.51	0.51	0.09	0.12	0.16	0.19	0.47
(v / s)_i Volume / Saturation Flow Rate	0.01	0.34	0.19	0.18	0.12	0.12	0.08	0.10	0.07	0.10	0.20
s, saturation flow rate [veh/h]	1781	5094	1589	3459	3560	1777	1781	1854	3459	1870	2813
c, Capacity [veh/h]	20	1566	489	748	1825	911	164	216	571	354	1309
d1, Uniform Delay [s]	59.08	41.56	35.43	44.87	16.27	16.28	53.56	52.13	45.08	43.67	172.63
k, delay calibration	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.04	0.11	0.11	0.11
l, 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]	26.76	54.27	5.59	2.38	0.07	0.14	10.42	4.19	0.53	1.15	0.23
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	0.61	1.10	0.61	0.83	0.24	0.24	0.83	0.87	0.44	0.51	0.43
d, Delay for Lane Group [s/veh]	85.84	95.83	41.02	47.25	16.34	16.41	63.99	56.32	45.60	44.82	172.86
Lane Group LOS	F	F	D	D	B	B	E	E	D	D	F
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.51	23.11	8.18	8.71	3.20	3.22	4.54	5.81	3.30	4.82	15.36
50th-Percentile Queue Length [ft/ln]	12.74	577.63	204.39	217.76	80.03	80.40	113.47	145.25	82.45	120.38	383.93
95th-Percentile Queue Length [veh/ln]	0.92	32.86	12.86	13.55	5.76	5.79	8.03	9.76	5.94	8.41	21.78
95th-Percentile Queue Length [ft/ln]	22.94	821.45	321.62	338.77	144.06	144.72	200.82	244.08	148.41	210.34	544.61

Movement, Approach, & Intersection Results

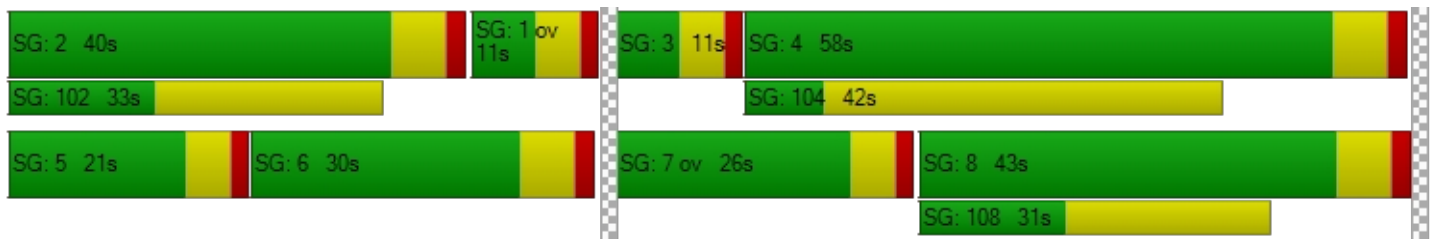
d_M, Delay for Movement [s/veh]	85.84	95.83	41.02	47.25	16.36	16.41	63.99	56.32	56.32	45.60	44.82	172.86
Movement LOS	F	F	D	D	B	B	E	E	E	D	D	F
d_A, Approach Delay [s/veh]	87.72			31.29			59.55			117.33		
Approach LOS	F			C			E			F		
d_I, Intersection Delay [s/veh]	76.47											
Intersection LOS	E											
Intersection V/C	0.821											

Other Modes

g_Walk,mi, Effective Walk Time [s]	17.0	0.0	11.0	17.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.20	0.00	49.50	44.20
I_p,int, Pedestrian LOS Score for Intersection	3.357	0.000	2.185	3.434
Crosswalk LOS	C	F	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	612	862	562	395
d_b, Bicycle Delay [s]	28.91	19.44	31.03	38.64
I_b,int, Bicycle LOS Score for Intersection	2.742	2.299	2.114	3.564
Bicycle LOS	B	B	B	D

Sequence

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



Intersection Level Of Service Report
Intersection 12: Veterans Pkwy / Steamboat Pkwy

Control Type:	Signalized	Delay (sec / veh):	48.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.805

Intersection Setup

Name	Veterans Pkwy			Veterans Pkwy			Damonte Ranch Pkwy			Steamboat Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	LTL			LTL			LTL			LTL		
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	2	0	0	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	200.00	100.00	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]	45.00			45.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Veterans Pkwy			Veterans Pkwy			Damonte Ranch Pkwy			Steamboat Pkwy		
Base Volume Input [veh/h]	572	928	45	547	768	403	192	483	208	141	1149	170
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 [%]	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10
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	23	0	0	121	0	0	62	0	0	88
Total Hourly Volume [veh/h]	572	928	22	547	768	282	192	483	146	141	1149	82
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	151	244	6	144	202	74	51	127	38	37	302	22
Total Analysis Volume [veh/h]	602	977	23	576	808	297	202	508	154	148	1209	86
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			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]	115.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Overlap	ProtPer	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	5	2	0	1	6	6	7	4	4	3	8	0
Auxiliary Signal Groups						6,7			4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	4	0	4	4	4	4	6	6	4	6	0
Maximum Green [s]	30	30	0	15	30	30	15	30	30	15	30	0
Amber [s]	3.9	4.8	0.0	3.9	4.8	4.8	3.9	4.8	4.8	3.2	4.8	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0
Split [s]	32	35	0	26	29	29	10	45	45	14	49	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	7	0	7	0
Pedestrian Clearance [s]	0	17	0	0	15	15	0	23	23	0	23	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]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.4	4.3	0.0	3.4	4.3	4.3	3.4	4.3	4.3	2.7	4.3	0.0
Minimum Recall	No	No		No	No	No	No	No	No	No	No	
Maximum Recall	No	No		No	No	No	No	Yes	Yes	No	No	
Pedestrian Recall	No	No		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	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.30	6.30	6.30	6.30	6.30	5.40	6.30	6.30	5.40	6.30	6.30	6.30
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	0.00
l2, Clearance Lost Time [s]	0.00	4.30	4.30	0.00	4.30	0.00	0.00	4.30	0.00	0.00	4.30	4.30
g_i, Effective Green Time [s]	54	33	33	54	30	42	54	41	65	54	43	43
g / C, Green / Cycle	0.45	0.28	0.28	0.45	0.25	0.35	0.45	0.34	0.54	0.45	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.28	0.27	0.27	0.30	0.23	0.19	0.30	0.14	0.10	0.14	0.34	0.05
s, saturation flow rate [veh/h]	2153	1853	1839	1890	3529	1575	682	3529	1575	1061	3529	1575
c, Capacity [veh/h]	784	511	507	666	883	553	243	1207	859	468	1255	560
d1, Uniform Delay [s]	26.42	43.15	43.20	30.67	43.77	31.13	28.67	30.35	13.76	20.75	37.90	26.35
k, delay calibration	0.11	0.46	0.46	0.50	0.11	0.22	0.50	0.50	0.50	0.46	0.50	0.50
l, 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
d2, Incremental Delay [s]	1.62	33.61	34.59	13.88	4.29	1.62	27.00	1.08	0.46	1.62	17.98	0.58
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.77	0.98	0.98	0.86	0.92	0.54	0.83	0.42	0.18	0.32	0.96	0.15
d, Delay for Lane Group [s/veh]	28.04	76.75	77.80	44.55	48.06	32.75	55.67	31.43	14.22	22.37	55.88	26.93
Lane Group LOS	C	E	E	D	D	C	E	C	B	C	E	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.62	18.90	18.95	6.44	11.75	6.85	5.35	5.83	2.21	2.67	20.03	1.76
50th-Percentile Queue Length [ft/ln]	140.47	472.58	473.87	161.11	293.64	171.36	133.83	145.87	55.20	66.87	500.73	44.04
95th-Percentile Queue Length [veh/ln]	9.51	26.03	26.09	10.61	17.37	11.15	9.15	9.80	3.97	4.81	27.37	3.17
95th-Percentile Queue Length [ft/ln]	237.65	650.83	652.37	265.19	434.15	278.70	228.69	244.90	99.37	120.37	684.22	79.28

Movement, Approach, & Intersection Results

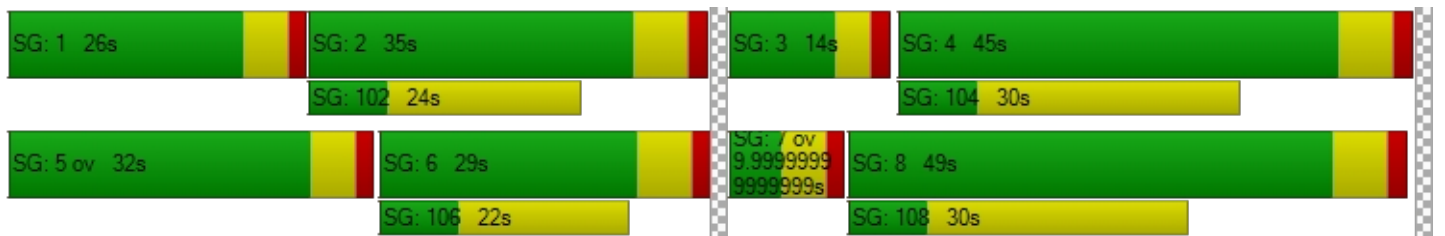
d_M, Delay for Movement [s/veh]	28.04	77.26	77.80	44.55	48.06	32.75	55.67	31.43	14.22	22.37	55.88	26.93
Movement LOS	C	E	E	D	D	C	E	C	B	C	E	C
d_A, Approach Delay [s/veh]	58.77			44.15			34.03			50.72		
Approach LOS	E			D			C			D		
d_I, Intersection Delay [s/veh]	48.47											
Intersection LOS	D											
Intersection V/C	0.805											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	3.257	3.546	3.364	3.336
Crosswalk LOS	C	D	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	478	378	645	712
d_b, Bicycle Delay [s]	34.73	39.45	27.54	24.90
I_b,int, Bicycle LOS Score for Intersection	2.900	3.046	2.324	2.823
Bicycle LOS	C	C	B	C

Sequence

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



Intersection Level Of Service Report
Intersection 13: Rio Wrangler Pkwy / Steamboat Pkwy

Control Type:	Signalized	Delay (sec / veh):	27.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.677

Intersection Setup

Name	Rio Wrangler Pkwy			Rio Wrangler Pkwy			Steamboat Pkwy			Steamboat Pkwy		
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	0	0	1	1	0	0	0	0	0
Entry Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	100.00	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]	45.00			45.00			45.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Rio Wrangler Pkwy			Rio Wrangler Pkwy			Steamboat Pkwy			Steamboat Pkwy		
Base Volume Input [veh/h]	539	121	2	7	290	546	198	15	537	10	30	5
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 [%]	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70
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	1	0	0	164	0	0	161	0	0	3
Total Hourly Volume [veh/h]	539	121	1	7	290	382	198	15	376	10	30	2
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	142	32	0	2	76	101	52	4	99	3	8	1
Total Analysis Volume [veh/h]	567	127	1	7	305	402	208	16	396	11	32	2
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
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]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	ProtPer	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	2	3	8	8	7	4	0
Auxiliary Signal Groups						2,3			1,8			
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	5	5	5	5	0	5	0
Maximum Green [s]	30	30	0	0	30	30	30	30	30	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	23	63	0	0	40	40	18	47	47	0	29	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	7	0	7	0
Pedestrian Clearance [s]	0	11	0	0	24	24	0	15	15	0	15	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]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	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	R	L	C	R	C
C, Cycle Length [s]	86	86	86	86	86	86	86	86
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	0.00	0.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	29	51	18	41	27	27	60	4
g / C, Green / Cycle	0.34	0.59	0.21	0.47	0.31	0.31	0.70	0.05
(v / s)_i Volume / Saturation Flow Rate	0.32	0.07	0.17	0.26	0.13	0.01	0.25	0.05
s, saturation flow rate [veh/h]	1757	1842	1833	1568	1660	1844	1568	914
c, Capacity [veh/h]	601	1096	421	742	585	575	1098	93
d1, Uniform Delay [s]	27.50	7.58	32.64	16.07	23.12	20.56	5.16	41.50
k, delay calibration	0.40	0.11	0.11	0.26	0.11	0.11	0.25	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	21.42	0.05	2.58	1.46	0.37	0.02	0.46	3.82
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.12	0.74	0.54	0.36	0.03	0.36	0.48
d, Delay for Lane Group [s/veh]	48.92	7.63	35.22	17.53	23.49	20.58	5.62	45.32
Lane Group LOS	D	A	D	B	C	C	A	D
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	13.75	0.86	6.09	5.18	3.09	0.21	2.04	1.05
50th-Percentile Queue Length [ft/ln]	343.71	21.39	152.13	129.56	77.37	5.27	50.91	26.33
95th-Percentile Queue Length [veh/ln]	19.83	1.54	10.13	8.92	5.57	0.38	3.67	1.90
95th-Percentile Queue Length [ft/ln]	495.73	38.49	253.27	222.90	139.27	9.48	91.64	47.39

Movement, Approach, & Intersection Results

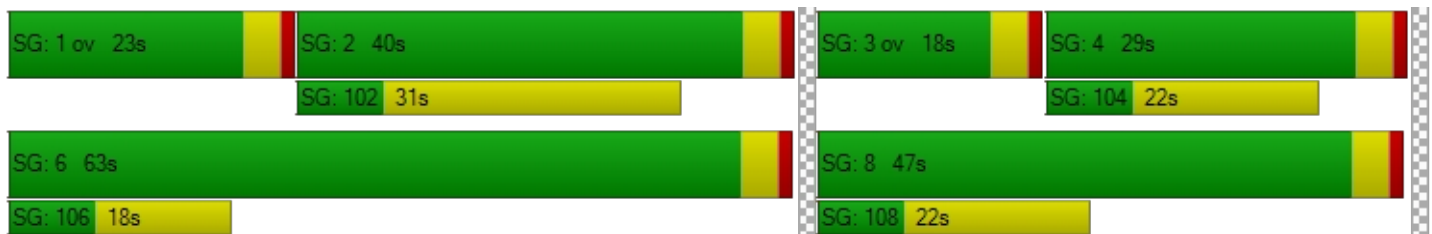
d_M, Delay for Movement [s/veh]	48.92	7.63	7.63	35.22	35.22	17.53	23.49	20.58	5.62	45.32	45.32	45.32
Movement LOS	D	A	A	D	D	B	C	C	A	D	D	D
d_A, Approach Delay [s/veh]	41.31			25.26			12.00			45.32		
Approach LOS	D			C			B			D		
d_I, Intersection Delay [s/veh]	27.11											
Intersection LOS	C											
Intersection V/C	0.677											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.55	44.55	44.55	44.55
I_p,int, Pedestrian LOS Score for Intersection	2.732	2.797	3.081	1.768
Crosswalk LOS	B	C	C	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1073	655	782	455
d_b, Bicycle Delay [s]	11.82	24.89	20.40	32.84
I_b,int, Bicycle LOS Score for Intersection	2.708	3.008	2.848	1.639
Bicycle LOS	B	C	C	A

Sequence

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



Intersection Level Of Service Report

Intersection 14: Rio Wrangler Pkwy / McCauley Ranch Blvd

Control Type:	Signalized	Delay (sec / veh):	18.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.601

Intersection Setup

Name	Rio Wrangler Pkwy		Rio Wrangler Pkwy		MCCauley Ranch Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↔		↔↑		↔↔	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	110.00	100.00	125.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00		30.00		25.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Rio Wrangler Pkwy		Rio Wrangler Pkwy		MCCauley Ranch Blvd	
Base Volume Input [veh/h]	329	95	339	439	40	308
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.50	4.50	4.50	4.50	4.50	4.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	329	95	339	439	40	308
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	87	25	89	116	11	81
Total Analysis Volume [veh/h]	346	100	357	462	42	324
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing in	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
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]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal Group	6	0	5	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	5	0	5	5	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.5	0.0	3.5	3.5	3.5	0.0
All red [s]	1.5	0.0	1.5	1.5	1.5	0.0
Split [s]	27	0	17	44	16	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	15	0	0	17	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	0.0	3.0	3.0	3.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	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
I, Upstream Filtering Factor	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	C	R	L	C	L	R
C, Cycle Length [s]	55	55	55	55	55	55
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	13	13	14	31	14	14
g / C, Green / Cycle	0.23	0.23	0.25	0.57	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.19	0.06	0.20	0.25	0.02	0.21
s, saturation flow rate [veh/h]	1832	1558	1745	1832	1745	1558
c, Capacity [veh/h]	428	364	428	1043	438	391
d1, Uniform Delay [s]	20.09	17.42	19.85	6.89	15.95	19.66
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.69	0.41	4.30	0.30	0.09	4.57
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.28	0.83	0.44	0.10	0.83
d, Delay for Lane Group [s/veh]	23.79	17.82	24.15	7.19	16.05	24.23
Lane Group LOS	C	B	C	A	B	C
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.94	0.92	4.42	2.40	0.39	4.12
50th-Percentile Queue Length [ft/ln]	98.61	22.98	110.57	59.96	9.82	103.00
95th-Percentile Queue Length [veh/ln]	7.10	1.65	7.87	4.32	0.71	7.42
95th-Percentile Queue Length [ft/ln]	177.50	41.36	196.80	107.92	17.67	185.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.79	17.82	24.15	7.19	16.05	24.23
Movement LOS	C	B	C	A	B	C
d_A, Approach Delay [s/veh]	22.45		14.58		23.29	
Approach LOS	C		B		C	
d_I, Intersection Delay [s/veh]	18.69					
Intersection LOS	B					
Intersection V/C	0.601					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	0.00	20.01
I_p,int, Pedestrian LOS Score for Intersection	2.381	0.000	2.141
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	1300	367
d_b, Bicycle Delay [s]	12.03	3.68	20.01
I_b,int, Bicycle LOS Score for Intersection	2.296	2.911	1.560
Bicycle LOS	B	C	A

Sequence





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



Intersection Level Of Service Report
Intersection 15: S. Virginia St / Geiger Grade Rd

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):	0.528

Intersection Setup

Name	Geiger Grade Rd			Mt. Rose Hwy			S. Virginia St			S. Virginia St		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
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	2	0	1	2	0	1	2	0	0
Entry Pocket Length [ft]	350.00	100.00	100.00	725.00	100.00	250.00	525.00	100.00	100.00	600.00	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]	35.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Geiger Grade Rd			Mt. Rose Hwy			S. Virginia St			S. Virginia St		
Base Volume Input [veh/h]	193	716	1548	160	345	43	96	801	199	483	226	231
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 [%]	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10
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	464	0	0	22	0	0	103	0	0	69
Total Hourly Volume [veh/h]	193	716	1084	160	345	21	96	801	96	483	226	162
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	51	188	285	42	91	6	25	211	25	127	59	43
Total Analysis Volume [veh/h]	203	754	1141	168	363	22	101	843	101	508	238	171
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	0	3	8	0	5	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	5	5	5	5
Maximum Green [s]	30	35	0	20	35	0	25	40	40	40	40	40
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	5.0	5.0	4.0	5.0	5.0
All red [s]	1.0	1.5	0.0	1.5	1.5	0.0	1.0	2.0	2.0	2.0	2.0	2.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	7
Pedestrian Clearance [s]	0	28	0	0	28	0	0	18	18	0	18	18
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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	3.5	0.0	3.5	3.5	0.0	3.0	5.0	5.0	4.0	5.0	5.0
Minimum Recall	No	No		No	No		No	Yes		No	Yes	
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	L	C	L	C	R	L	C	R
C, Cycle Length [s]	78	78	78	78	78	78	78	78	78	78
L, Total Lost Time per Cycle [s]	5.00	5.50	5.50	5.50	5.00	7.00	7.00	6.00	7.00	7.00
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
l2, Clearance Lost Time [s]	3.00	3.50	3.50	3.50	3.00	5.00	5.00	4.00	5.00	5.00
g_i, Effective Green Time [s]	11	20	6	15	4	17	17	11	25	25
g / C, Green / Cycle	0.14	0.25	0.08	0.19	0.06	0.22	0.22	0.14	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.12	0.21	0.05	0.10	0.03	0.17	0.06	0.10	0.05	0.11
s, saturation flow rate [veh/h]	1765	3529	3428	3529	3428	5049	1575	5142	5049	1575
c, Capacity [veh/h]	250	896	261	687	196	1113	347	725	1601	500
d1, Uniform Delay [s]	32.37	27.54	34.91	28.13	35.63	28.38	25.26	31.86	19.04	20.35
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.20	2.24	2.64	0.63	2.09	1.08	0.46	1.24	0.04	0.40
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
Rp, platoon ratio	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

Lane Group Results

X, volume / capacity	0.81	0.84	0.64	0.53	0.52	0.76	0.29	0.70	0.15	0.34
d, Delay for Lane Group [s/veh]	38.57	29.78	37.55	28.76	37.72	29.46	25.72	33.10	19.08	20.76
Lane Group LOS	D	C	D	C	D	C	C	C	B	C
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.96	6.50	1.54	2.85	0.93	4.58	1.47	2.89	0.94	2.20
50th-Percentile Queue Length [ft/ln]	99.08	162.58	38.51	71.32	23.23	114.50	36.85	72.36	23.40	54.96
95th-Percentile Queue Length [veh/ln]	7.13	10.69	2.77	5.14	1.67	8.09	2.65	5.21	1.68	3.96
95th-Percentile Queue Length [ft/ln]	178.34	267.13	69.32	128.38	41.81	202.25	66.33	130.25	42.12	98.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.57	29.78	0.00	37.55	28.76	0.00	37.72	29.46	25.72	33.10	19.08	20.76
Movement LOS	D	C		D	C		D	C	C	C	B	C
d_A, Approach Delay [s/veh]	31.64			31.54			29.90			27.16		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	29.91											
Intersection LOS	C											
Intersection V/C	0.528											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.924	2.933	3.253	3.356
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	778	889	889
d_b, Bicycle Delay [s]	16.81	16.81	13.89	13.89
I_b,int, Bicycle LOS Score for Intersection	2.349	1.998	2.191	2.102
Bicycle LOS	B	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 16: Veterans Pkwy / Geiger Grade Rd

Control Type:	Signalized	Delay (sec / veh):	52.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.736

Intersection Setup

Name	Geiger Grade Rd			Damonte Ranch Ext			Geiger Grade Rd			Veterans Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
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	3	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	250.00	100.00	150.00	150.00	100.00	150.00	250.00	100.00	100.00	250.00	100.00	150.00
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]	20.00			20.00			20.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Geiger Grade Rd			Damonte Ranch Ext			Geiger Grade Rd			Veterans Pkwy		
Base Volume Input [veh/h]	1242	116	236	101	125	267	82	376	486	76	1054	28
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	71	0	0	80	0	0	146	0	0	15
Total Hourly Volume [veh/h]	1242	116	165	101	125	187	82	376	340	76	1054	13
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	327	31	43	27	33	49	22	99	89	20	277	3
Total Analysis Volume [veh/h]	1307	122	174	106	132	197	86	396	358	80	1109	14
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
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]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Unsigna	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.5	3.5	0.0	3.5	3.5	0.0	3.5	3.5	0.0	3.5	3.5	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	40	65	0	14	39	0	12	49	0	12	49	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	21	0	0	20	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
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	R	L	C	R	L	C	L	C	R
C, Cycle Length [s]	140	140	140	140	140	140	140	140	140	140	140
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
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]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	35	44	44	10	20	20	9	57	8	57	57
g / C, Green / Cycle	0.25	0.32	0.32	0.07	0.14	0.14	0.06	0.41	0.06	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.25	0.03	0.11	0.06	0.07	0.12	0.05	0.11	0.04	0.31	0.01
s, saturation flow rate [veh/h]	5188	3560	1589	1781	1870	1589	1781	3560	1781	3560	1589
c, Capacity [veh/h]	1295	1129	504	132	264	224	109	1454	103	1441	643
d1, Uniform Delay [s]	52.52	33.81	36.66	63.84	55.54	58.93	64.79	27.57	65.05	36.02	25.02
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50
l, 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]	13.86	0.04	0.41	10.91	1.46	10.44	11.65	0.46	11.69	4.01	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	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	1.01	0.11	0.35	0.81	0.50	0.88	0.79	0.27	0.78	0.77	0.02
d, Delay for Lane Group [s/veh]	66.38	33.85	37.07	74.75	57.01	69.36	76.45	28.04	76.74	40.03	25.08
Lane Group LOS	F	C	D	E	E	E	E	C	E	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	17.05	1.53	4.77	4.19	4.51	7.61	3.43	4.67	3.20	17.47	0.30
50th-Percentile Queue Length [ft/ln]	426.29	38.23	119.19	104.64	112.64	190.37	85.86	116.84	80.04	436.81	7.59
95th-Percentile Queue Length [veh/ln]	23.95	2.75	8.35	7.53	7.99	12.14	6.18	8.22	5.76	24.33	0.55
95th-Percentile Queue Length [ft/ln]	598.83	68.82	208.71	188.35	199.66	303.50	154.54	205.48	144.07	608.19	13.66

Movement, Approach, & Intersection Results

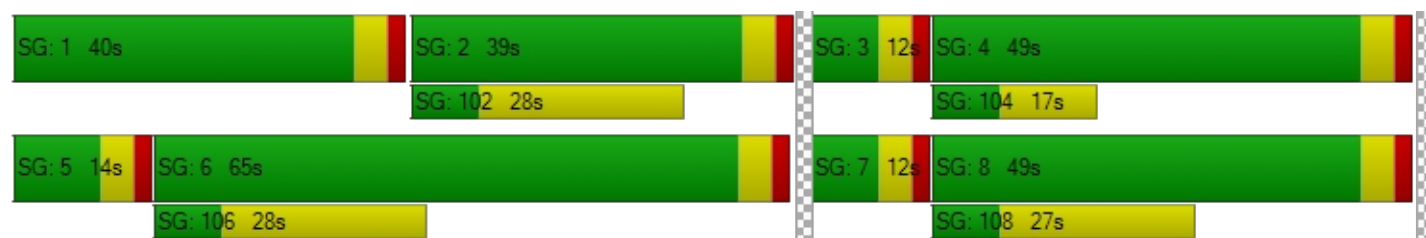
d_M, Delay for Movement [s/veh]	66.38	33.85	37.07	74.75	57.01	69.36	76.45	28.04	0.00	76.74	40.03	25.08
Movement LOS	F	C	D	E	E	E	E	C		E	D	C
d_A, Approach Delay [s/veh]	60.73			66.93			36.67			42.30		
Approach LOS	E			E			D			D		
d_I, Intersection Delay [s/veh]	52.38											
Intersection LOS	D											
Intersection V/C	0.736											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	59.43			59.43			59.43			59.43		
l_p,int, Pedestrian LOS Score for Intersection	2.891			2.533			2.798			2.708		
Crosswalk LOS	C			B			C			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	857			486			629			629		
d_b, Bicycle Delay [s]	22.86			40.13			32.91			32.91		
l_b,int, Bicycle LOS Score for Intersection	2.941			2.409			1.957			2.564		
Bicycle LOS	C			B			A			B		

Sequence

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



MOVEMENT SUMMARY

Site: Steamboat & Rio Wrangler AM

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed mph
		Total veh/h	HV %				Vehicles veh	Distance ft			
South: Rio Wrangler											
3	L2	567	2.0	0.797	22.1	LOS C	9.4	238.1	0.83	0.81	26.0
8	T1	127	2.0	0.797	22.1	LOS C	9.4	238.1	0.83	0.81	26.1
18	R2	2	2.0	0.797	22.1	LOS C	9.4	238.1	0.83	0.81	25.7
Approach		697	2.0	0.797	22.1	LOS C	9.4	238.1	0.83	0.81	26.0
East: Steamboat											
1	L2	11	2.0	0.107	9.7	LOS A	0.3	8.7	0.63	0.63	31.3
6	T1	32	2.0	0.107	9.7	LOS A	0.3	8.7	0.63	0.63	31.5
16	R2	5	2.0	0.107	9.7	LOS A	0.3	8.7	0.63	0.63	30.8
Approach		47	2.0	0.107	9.7	LOS A	0.3	8.7	0.63	0.63	31.4
North: Rio Wrangler											
7	L2	7	2.0	0.525	15.2	LOS C	2.7	68.6	0.70	0.76	29.4
4	T1	305	2.0	0.525	15.2	LOS C	2.7	68.6	0.70	0.76	29.5
14	R2	575	2.0	0.350	0.1	LOS A	0.0	0.0	0.00	0.00	36.5
Approach		887	2.0	0.525	5.4	LOS A	2.7	68.6	0.25	0.27	33.7
West: Steamboat											
5	L2	208	2.0	0.281	7.7	LOS A	1.1	28.8	0.47	0.41	30.9
2	T1	16	2.0	0.281	7.7	LOS A	1.1	28.8	0.47	0.41	31.0
12	R2	565	2.0	0.344	0.1	LOS A	0.0	0.0	0.00	0.00	36.5
Approach		789	2.0	0.344	2.2	LOS A	1.1	28.8	0.13	0.12	34.7
All Vehicles		2421	2.0	0.797	9.2	LOS A	9.4	238.1	0.39	0.38	31.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

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 HCM 2010).

Roundabout Capacity Model: US HCM 2010.

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: Rio Wrangler & McCauley Ranch AM

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Rio Wrangler											
8	T1	346	2.0	0.580	13.8	LOS B	3.7	92.9	0.66	0.69	30.1
18	R2	100	2.0	0.580	13.8	LOS B	3.7	92.9	0.66	0.69	29.5
Approach		446	2.0	0.580	13.8	LOS B	3.7	92.9	0.66	0.69	30.0
East: McCauley Ranch											
1	L2	42	2.0	0.471	11.0	LOS B	2.4	61.3	0.58	0.57	31.0
16	R2	324	2.0	0.471	11.0	LOS B	2.4	61.3	0.58	0.57	30.4
Approach		366	2.0	0.471	11.0	LOS B	2.4	61.3	0.58	0.57	30.5
North: Rio Wrangler											
7	L2	357	2.0	0.772	17.7	LOS C	9.2	234.7	0.44	0.20	27.9
4	T1	462	2.0	0.772	17.7	LOS C	9.2	234.7	0.44	0.20	28.0
Approach		819	2.0	0.772	17.7	LOS C	9.2	234.7	0.44	0.20	28.0
All Vehicles		1632	2.0	0.772	15.1	LOS C	9.2	234.7	0.53	0.42	29.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

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 HCM 2010).

Roundabout Capacity Model: US HCM 2010.

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 1: S. Virginia St / I-580 North Ramps

Control Type:	Signalized	Delay (sec / veh):	25.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.777

Intersection Setup

Name	S. Virginia St		S. Virginia St		North Off-Ramp	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑				↗	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No				No	
Crosswalk	No		No		No	

Volumes

Name	S. Virginia St		S. Virginia St		North Off-Ramp	
Base Volume Input [veh/h]	1470	0	0	0	0	579
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.30	2.00	2.00	1.30	2.00	1.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	173
Total Hourly Volume [veh/h]	1470	0	0	0	0	406
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	387	0	0	0	0	107
Total Analysis Volume [veh/h]	1547	0	0	0	0	427
Presence of On-Street Parking	No	No			No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing in	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
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]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	0	0	4
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	-	-
Minimum Green [s]	5	0	0	0	0	5
Maximum Green [s]	30	0	0	0	0	30
Amber [s]	3.0	0.0	0.0	0.0	0.0	3.0
All red [s]	1.0	0.0	0.0	0.0	0.0	1.0
Split [s]	59	0	0	0	0	31
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	3.0
Walk [s]	5	0	0	0	0	5
Pedestrian Clearance [s]	10	0	0	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No					No
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	2.0
Minimum Recall	No					No
Maximum Recall	No					No
Pedestrian Recall	No					No
Detector Location [ft]	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
I, Upstream Filtering Factor	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	C	R
C, Cycle Length [s]	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00
g_i, Effective Green Time [s]	54	28
g / C, Green / Cycle	0.60	0.31
(v / s)_i Volume / Saturation Flow Rate	0.48	0.30
s, saturation flow rate [veh/h]	3222	1439
c, Capacity [veh/h]	1925	451
d1, Uniform Delay [s]	14.00	30.10
k, delay calibration	0.50	0.37
l, Upstream Filtering Factor	1.00	1.00
d2, Incremental Delay [s]	3.67	25.41
d3, Initial Queue Delay [s]	0.00	0.00
Rp, platoon ratio	1.00	1.00
PF, progression factor	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.95
d, Delay for Lane Group [s/veh]	17.68	55.51
Lane Group LOS	B	E
Critical Lane Group	Yes	Yes
50th-Percentile Queue Length [veh/ln]	10.66	11.42
50th-Percentile Queue Length [ft/ln]	266.40	285.54
95th-Percentile Queue Length [veh/ln]	16.01	16.96
95th-Percentile Queue Length [ft/ln]	400.24	424.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	17.68	0.00	0.00	0.00	0.00	55.51
Movement LOS	B					E
d_A, Approach Delay [s/veh]	17.68		0.00		55.51	
Approach LOS	B		A		E	
d_I, Intersection Delay [s/veh]	25.86					
Intersection LOS	C					
Intersection V/C	0.777					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1222	0	600
d_b, Bicycle Delay [s]	6.81	45.00	22.05
I_b,int, Bicycle LOS Score for Intersection	2.836	4.132	1.560
Bicycle LOS	C	D	A

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: S. Meadows Pkwy / Double Diamond Pkwy

Control Type:	Signalized	Delay (sec / veh):	27.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.604

Intersection Setup

Name	S. Meadows Pkwy				S. Meadows Pkwy			Double Diamond Pkwy			Double Diamond Pkwy		
Approach	Northeastbound				Southwestbound			Northwestbound			Southeastbound		
Lane Configuration	[Diagram]				[Diagram]			[Diagram]			[Diagram]		
Turning Movement	U-tu	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	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	0	1	1	0	0	2	0	0
Entry Pocket Length [ft]	175.0	100.0	100.0	175.0	100.00	100.00	200.00	250.00	100.00	100.00	200.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	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	0.00
Speed [mph]	30.00				30.00			35.00			35.00		
Grade [%]	0.00				0.00			0.00			0.00		
Curb Present	No				No			No			No		
Crosswalk	Yes				Yes			Yes			Yes		

Volumes

Name	S. Meadows Pkwy				S. Meadows Pkwy			Double Diamond Pkwy			Double Diamond Pkwy		
	55	149	899	335	8	534	460	115	189	8	909	451	237
Base Volume Input [veh/h]	55	149	899	335	8	534	460	115	189	8	909	451	237
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Growth Factor	1.000	1.000	1.000	1.000	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	0
Site-Generated Trips [veh/h]	0	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	0
Pass-by Trips [veh/h]	0	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	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	91	0	0	138	0	0	4	0	0	71
Total Hourly Volume [veh/h]	55	149	899	244	8	534	322	115	189	4	909	451	166
Peak Hour Factor	0.950	0.950	0.950	0.950	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	39	237	64	2	141	85	30	50	1	239	119	44
Total Analysis Volume [veh/h]	58	157	946	257	8	562	339	121	199	4	957	475	175
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	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0				0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0				0			0			0		
v_co, Outbound Pedestrian Volume crossing	0				0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0				0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0				0			0			0		
Bicycle Volume [bicycles/h]	0				0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Prote	Permi	Unsig	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	7	4	0	3	8	8	5	2	0	1	6	0
Auxiliary Signal Groups							1,8						
Lead / Lag	-	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	6	0	6	6	6	4	6	0	4	6	0
Maximum Green [s]	0	35	35	0	16	35	35	25	30	0	25	30	0
Amber [s]	0.0	3.2	4.1	0.0	3.2	4.1	4.1	3.3	4.2	0.0	3.3	4.2	0.0
All red [s]	0.0	1.5	1.5	0.0	1.5	1.5	1.5	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	2.5	3.0	0.0	3.0	3.0	3.0	2.5	2.5	0.0	2.5	2.5	0.0
Walk [s]	0	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	19	0	0	18	18	0	20	0	0	17	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	0.0
Rest In Walk			No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.7	3.6	0.0	2.7	3.6	3.6	2.8	3.7	0.0	2.8	3.7	0.0
Minimum Recall		No	Yes		No	Yes	Yes	No	No		No	No	
Maximum Recall		No	No		No	No	No	No	No		No	No	
Pedestrian Recall		No	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	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	77	77	77	77	77	77	77	77	77	77	77
L, Total Lost Time per Cycle [s]	4.70	5.60	4.70	5.60	4.80	4.80	5.70	5.70	4.80	5.70	5.70
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]	2.70	3.60	2.70	3.60	0.00	2.80	3.70	3.70	2.80	3.70	3.70
g_i, Effective Green Time [s]	11	26	1	16	45	7	6	6	23	23	23
g / C, Green / Cycle	0.15	0.33	0.01	0.20	0.58	0.09	0.08	0.08	0.30	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.12	0.26	0.00	0.16	0.21	0.07	0.05	0.05	0.27	0.25	0.11
s, saturation flow rate [veh/h]	1798	3595	1798	3595	1605	1798	1888	1875	3492	1888	1605
c, Capacity [veh/h]	262	1200	22	722	926	157	153	152	1061	562	478
d1, Uniform Delay [s]	32.11	23.31	37.94	29.31	8.78	34.58	34.55	34.55	25.84	25.50	21.42
k, delay calibration	0.08	0.11	0.11	0.11	0.15	0.08	0.08	0.08	0.08	0.15	0.08
l, 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]	4.80	1.19	9.55	1.86	0.35	5.87	3.62	3.68	2.37	4.75	0.35
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	0.82	0.79	0.36	0.78	0.37	0.77	0.66	0.67	0.90	0.84	0.37
d, Delay for Lane Group [s/veh]	36.91	24.50	47.49	31.17	9.13	40.46	38.17	38.23	28.21	30.25	21.77
Lane Group LOS	D	C	D	C	A	D	D	D	C	C	C
Critical Lane Group	Yes	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.13	7.53	0.21	4.94	2.75	2.39	1.94	1.94	8.15	8.33	2.40
50th-Percentile Queue Length [ft/ln]	103.13	188.27	5.15	123.55	68.83	59.87	48.51	48.38	203.76	208.37	59.90
95th-Percentile Queue Length [veh/ln]	7.43	12.03	0.37	8.59	4.96	4.31	3.49	3.48	12.83	13.07	4.31
95th-Percentile Queue Length [ft/ln]	185.64	300.78	9.27	214.69	123.90	107.77	87.32	87.08	320.81	326.74	107.83

Movement, Approach, & Intersection Results

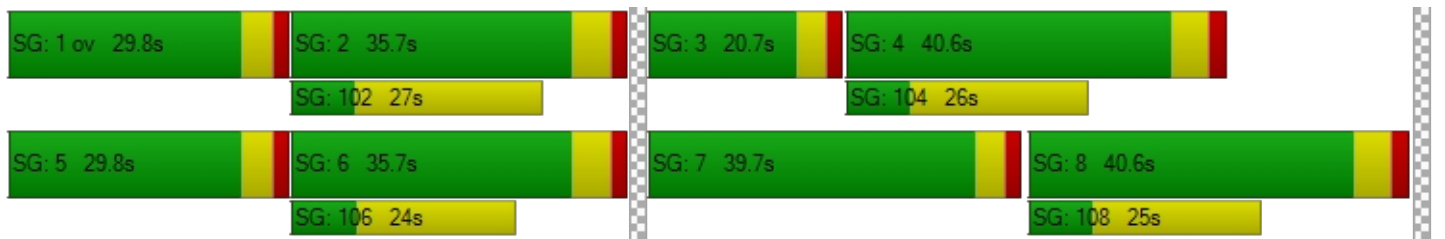
d_M, Delay for Movement [s/veh]	36.91	36.91	24.50	0.00	47.49	31.17	9.13	40.46	38.20	38.23	28.21	30.25	21.77
Movement LOS	D	D	C		D	C	A	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	26.80			23.10			39.04			28.11			
Approach LOS	C			C			D			C			
d_I, Intersection Delay [s/veh]	27.48												
Intersection LOS	C												
Intersection V/C	0.604												

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	2.892	3.144	2.381	3.044
Crosswalk LOS	C	C	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	583	500	500
d_b, Bicycle Delay [s]	30.10	30.10	33.75	33.75
I_b,int, Bicycle LOS Score for Intersection	2.388	2.423	1.830	4.328
Bicycle LOS	B	B	A	E

Sequence

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



Intersection Level Of Service Report
Intersection 6: S. Meadows Pkwy / Wilbur May Pkwy

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.753

Intersection Setup

Name	Wilbur May Pkwy		S. Meadows Pkwy		S. Meadows Pkwy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	⇐⇐		⇑⇑		⇐⇑⇑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	1	0
Entry Pocket Length [ft]	75.00	100.00	100.00	100.00	125.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Wilbur May Pkwy		S. Meadows Pkwy		S. Meadows Pkwy	
Base Volume Input [veh/h]	85	76	1636	180	236	917
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.10	1.10	1.10	1.10	1.10	1.10
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	40	0	94	0	0
Total Hourly Volume [veh/h]	85	36	1636	86	236	917
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	9	431	23	62	241
Total Analysis Volume [veh/h]	89	38	1722	91	248	965
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing in	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		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]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	3	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	24	0	18	0	78	96
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	15	0	9	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	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
I, Upstream Filtering Factor	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	R	C	C	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	9	79	79	21	103
g / C, Green / Cycle	0.07	0.07	0.66	0.66	0.17	0.86
(v / s)_i Volume / Saturation Flow Rate	0.06	0.03	0.53	0.54	0.15	0.30
s, saturation flow rate [veh/h]	1614	1441	1695	1666	1614	3228
c, Capacity [veh/h]	115	103	1114	1094	277	2782
d1, Uniform Delay [s]	54.74	53.12	15.17	15.49	48.64	1.63
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.36	2.19	6.56	7.26	9.92	0.34
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.37	0.81	0.83	0.90	0.35
d, Delay for Lane Group [s/veh]	65.10	55.31	21.73	22.75	58.55	1.98
Lane Group LOS	E	E	C	C	E	A
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.95	1.15	18.25	18.76	7.94	1.16
50th-Percentile Queue Length [ft/ln]	73.85	28.73	456.13	468.99	198.52	28.95
95th-Percentile Queue Length [veh/ln]	5.32	2.07	25.25	25.86	12.56	2.08
95th-Percentile Queue Length [ft/ln]	132.93	51.72	631.26	646.57	314.05	52.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.10	55.31	22.21	22.75	58.55	1.98
Movement LOS	E	E	C	C	E	A
d_A, Approach Delay [s/veh]	62.17		22.24		13.54	
Approach LOS	E		C		B	
d_I, Intersection Delay [s/veh]	20.50					
Intersection LOS	C					
Intersection V/C	0.753					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34
I_p,int, Pedestrian LOS Score for Intersection	2.240	3.122	3.001
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	233	1533
d_b, Bicycle Delay [s]	41.67	46.82	3.27
I_b,int, Bicycle LOS Score for Intersection	1.560	3.133	2.560
Bicycle LOS	A	C	B

Sequence





Ring 1	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Veterans Pkwy / Long Meadow Dr

Control Type:	Signalized	Delay (sec / veh):	14.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.578

Intersection Setup

Name	Veterans Pkwy			Veterans Pkwy			Long Meadow Dr			Long Meadow Dr		
Approach	Northbound			Southbound			Westbound			Southeastbound		
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	1	1	0	0	1	0	0
Entry Pocket Length [ft]	175.00	100.00	100.00	250.00	100.00	250.00	75.00	100.00	100.00	75.00	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]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Veterans Pkwy			Veterans Pkwy			Long Meadow Dr			Long Meadow Dr		
Base Volume Input [veh/h]	69	1117	59	77	1580	30	90	4	56	15	0	45
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	69	1117	59	77	1580	30	90	4	56	15	0	45
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	18	294	16	20	416	8	24	1	15	4	0	12
Total Analysis Volume [veh/h]	73	1176	62	81	1663	32	95	4	59	16	0	47
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

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]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	7	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.5	0.0	3.5	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0
All red [s]	1.0	1.5	0.0	1.5	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0
Split [s]	9	77	0	11	79	0	0	32	0	0	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	15	0	0	20	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]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C
C, Cycle Length [s]	55	55	55	55	55	55	55	55	55	55
L, Total Lost Time per Cycle [s]	4.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	27	27	4	29	29	9	9	9	9
g / C, Green / Cycle	0.06	0.50	0.50	0.06	0.52	0.52	0.16	0.16	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.04	0.33	0.33	0.05	0.47	0.02	0.07	0.04	0.01	0.03
s, saturation flow rate [veh/h]	1781	1870	1837	1781	3560	1589	1358	1605	1339	1589
c, Capacity [veh/h]	109	938	922	116	1864	832	258	255	244	252
d1, Uniform Delay [s]	25.07	10.17	10.18	25.00	11.63	6.33	24.17	20.11	23.19	19.91
k, delay calibration	0.11	0.15	0.15	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.82	1.12	1.16	7.47	1.67	0.02	0.88	0.50	0.11	0.35
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
Rp, platoon ratio	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

Lane Group Results

X, volume / capacity	0.67	0.66	0.67	0.70	0.89	0.04	0.37	0.25	0.07	0.19
d, Delay for Lane Group [s/veh]	31.89	11.29	11.34	32.47	13.30	6.34	25.05	20.61	23.30	20.26
Lane Group LOS	C	B	B	C	B	A	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.02	4.04	3.99	1.14	6.17	0.12	1.20	0.70	0.19	0.51
50th-Percentile Queue Length [ft/ln]	25.54	101.12	99.87	28.58	154.29	3.11	29.96	17.46	4.74	12.86
95th-Percentile Queue Length [veh/ln]	1.84	7.28	7.19	2.06	10.25	0.22	2.16	1.26	0.34	0.93
95th-Percentile Queue Length [ft/ln]	45.97	182.02	179.76	51.44	256.14	5.60	53.92	31.43	8.54	23.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.89	11.32	11.34	32.47	13.30	6.34	25.05	20.61	20.61	23.30	20.26	20.26
Movement LOS	C	B	B	C	B	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	12.46			14.05			23.28			21.03		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	14.00											
Intersection LOS	B											
Intersection V/C	0.578											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	3.360			3.227			2.036			2.001		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1200			1233			450			450		
d_b, Bicycle Delay [s]	9.60			8.82			36.04			36.04		
I_b,int, Bicycle LOS Score for Intersection	2.641			3.025			1.820			1.664		
Bicycle LOS	B			C			A			A		

Sequence

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



Intersection Level Of Service Report
Intersection 10: Damonte Ranch Pkwy / Double R Blvd

Control Type:	Signalized	Delay (sec / veh):	68.7
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.784

Intersection Setup

Name	Steamboat Pkwy			Damonte Ranch Pkwy			Northwestbound			Double R Blvd		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
Lane Configuration	1 1 1 1			1 1 1 1			1 1			1 1 1 1		
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	1	2	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	150.00	100.00	150.00	415.00	100.00	100.00	250.00	100.00	100.00	225.00	100.00	225.00
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			45.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Steamboat Pkwy			Damonte Ranch Pkwy						Double R Blvd		
Base Volume Input [veh/h]	13	945	361	727	1301	88	97	127	22	706	122	1073
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	108	0	0	46	0	0	11	0	0	322
Total Hourly Volume [veh/h]	13	945	253	727	1301	42	97	127	11	706	122	751
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	3	249	67	191	342	11	26	33	3	186	32	198
Total Analysis Volume [veh/h]	14	995	266	765	1369	44	102	134	12	743	128	791
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			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]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												1,6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lag	-	-
Minimum Green [s]	4	6	0	4	6	0	4	4	0	4	6	6
Maximum Green [s]	30	41	0	38	41	0	30	33	0	20	30	30
Amber [s]	3.9	4.8	0.0	3.9	4.8	0.0	3.9	4.8	0.0	3.9	4.8	4.8
All red [s]	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	1.5
Split [s]	10	38	0	21	49	0	13	40	0	21	48	48
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	13	0	0	7	0	0	13	0	5	0	0
Pedestrian Clearance [s]	0	18	0	0	35	0	0	20	0	10	0	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.4	4.3	0.0	3.4	4.3	0.0	3.4	4.3	0.0	3.4	4.3	4.3
Minimum Recall	No	No		No	Yes		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	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	R	L	C	C	L	C	L	C	R
C, Cycle Length [s]	143	143	143	143	143	143	143	143	143	143	143
L, Total Lost Time per Cycle [s]	5.40	6.30	6.30	5.40	6.30	6.30	5.40	6.30	5.40	6.30	5.85
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]	3.40	4.30	4.30	3.40	4.30	4.30	3.40	4.30	3.40	4.30	0.00
g_i, Effective Green Time [s]	2	32	32	38	69	69	10	13	36	39	84
g / C, Green / Cycle	0.01	0.23	0.23	0.27	0.48	0.48	0.07	0.09	0.25	0.27	0.59
(v / s)_i Volume / Saturation Flow Rate	0.01	0.20	0.17	0.22	0.26	0.26	0.06	0.08	0.21	0.07	0.28
s, saturation flow rate [veh/h]	1781	5094	1589	3459	3560	1840	1781	1843	3459	1870	2813
c, Capacity [veh/h]	21	1151	359	919	1707	882	125	172	870	513	1661
d1, Uniform Delay [s]	70.35	53.24	51.45	49.53	26.22	26.26	65.57	63.85	51.02	40.40	195.33
k, delay calibration	0.11	0.11	0.13	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.12
l, 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]	28.57	2.08	3.61	2.05	1.25	2.43	12.00	10.98	2.52	0.25	0.23
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	0.65	0.86	0.74	0.83	0.54	0.55	0.82	0.85	0.85	0.25	0.48
d, Delay for Lane Group [s/veh]	98.92	55.32	55.06	51.58	27.48	28.69	77.58	74.83	53.54	40.65	195.56
Lane Group LOS	F	E	E	D	C	C	E	E	D	D	F
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.68	11.71	9.26	12.85	11.07	11.80	4.10	5.78	12.70	3.51	26.96
50th-Percentile Queue Length [ft/ln]	17.10	292.75	231.61	321.26	276.85	294.89	102.59	144.53	317.43	87.72	674.03
95th-Percentile Queue Length [veh/ln]	1.23	17.32	14.26	18.73	16.53	17.43	7.39	9.72	18.54	6.32	35.48
95th-Percentile Queue Length [ft/ln]	30.79	433.05	356.41	468.24	413.29	435.70	184.65	243.11	463.53	157.90	886.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	98.92	55.32	55.06	51.58	27.87	28.69	77.58	74.83	74.83	53.54	40.65	195.56
Movement LOS	F	E	E	D	C	C	E	E	E	D	D	F
d_A, Approach Delay [s/veh]	55.74			36.21			75.96			120.14		
Approach LOS	E			D			E			F		
d_I, Intersection Delay [s/veh]	68.70											
Intersection LOS	E											
Intersection V/C	0.784											

Other Modes

g_Walk,mi, Effective Walk Time [s]	17.0	0.0	11.0	17.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.20	0.00	49.50	44.20
I_p,int, Pedestrian LOS Score for Intersection	3.317	0.000	2.129	3.742
Crosswalk LOS	C	F	B	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	528	712	562	695
d_b, Bicycle Delay [s]	32.49	24.90	31.03	25.55
I_b,int, Bicycle LOS Score for Intersection	2.320	2.783	1.987	4.833
Bicycle LOS	B	C	A	E

Sequence

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



Intersection Level Of Service Report
Intersection 12: Veterans Pkwy / Steamboat Pkwy

Control Type:	Signalized	Delay (sec / veh):	40.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.662

Intersection Setup

Name	Veterans Pkwy			Veterans Pkwy			Damonte Ranch Pkwy			Steamboat Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	LTL			LTL			LTL			LTL		
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	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	200.00	100.00	100.00	100.00	100.00	100.00	200.00
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]	45.00			45.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Veterans Pkwy			Veterans Pkwy			Damonte Ranch Pkwy			Steamboat Pkwy		
Base Volume Input [veh/h]	300	716	123	282	837	253	345	1041	743	92	599	65
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 [%]	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
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	64	0	0	76	0	0	223	0	0	34
Total Hourly Volume [veh/h]	300	716	59	282	837	177	345	1041	520	92	599	31
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	79	188	16	74	220	47	91	274	137	24	158	8
Total Analysis Volume [veh/h]	316	754	62	297	881	186	363	1096	547	97	631	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			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]	20.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Overlap	ProtPer	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	5	2	0	1	6	6	7	4	4	3	8	0
Auxiliary Signal Groups						6,7			4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	4	0	4	4	4	4	6	6	4	6	0
Maximum Green [s]	30	30	0	15	30	30	15	30	30	15	30	0
Amber [s]	3.9	4.8	0.0	3.9	4.8	4.8	3.9	4.8	4.8	3.2	4.8	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0
Split [s]	22	32	0	20	30	30	30	53	53	15	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	7	0	7	0
Pedestrian Clearance [s]	0	17	0	0	15	15	0	23	23	0	23	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]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.4	4.3	0.0	3.4	4.3	4.3	3.4	4.3	4.3	2.7	4.3	0.0
Minimum Recall	No	Yes		No	Yes	Yes	No	No	No	No	Yes	
Maximum Recall	No	No		No	No	No	Yes	Yes	Yes	No	No	
Pedestrian Recall	No	No		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	R	L	C	R	L	C	R
C, Cycle Length [s]	126	126	126	126	126	126	126	126	126	126	126	126
L, Total Lost Time per Cycle [s]	6.30	6.30	6.30	6.30	6.30	5.40	6.30	6.30	5.40	6.30	6.30	6.30
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	0.00
l2, Clearance Lost Time [s]	0.00	4.30	4.30	0.00	4.30	0.00	0.00	4.30	0.00	0.00	4.30	4.30
g_i, Effective Green Time [s]	63	49	49	63	30	51	50	46	79	50	30	30
g / C, Green / Cycle	0.50	0.39	0.39	0.50	0.24	0.41	0.40	0.36	0.63	0.40	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.13	0.22	0.22	0.17	0.24	0.12	0.31	0.30	0.34	0.16	0.18	0.02
s, saturation flow rate [veh/h]	2341	1889	1840	1720	3598	1606	1168	3598	1606	589	3598	1606
c, Capacity [veh/h]	986	737	717	749	860	656	422	1306	1012	175	857	383
d1, Uniform Delay [s]	21.34	29.90	29.91	19.55	47.78	24.83	31.78	36.62	13.01	39.97	44.17	37.19
k, delay calibration	0.11	0.31	0.31	0.18	0.11	0.11	0.50	0.50	0.50	0.50	0.11	0.11
l, 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
d2, Incremental Delay [s]	0.19	1.91	1.96	0.56	21.11	0.23	19.94	6.58	2.07	12.04	1.25	0.10
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.32	0.56	0.56	0.40	1.02	0.28	0.86	0.84	0.54	0.55	0.74	0.09
d, Delay for Lane Group [s/veh]	21.53	31.81	31.87	20.11	68.88	25.07	51.72	43.19	15.08	52.01	45.43	37.29
Lane Group LOS	C	C	C	C	F	C	D	D	B	D	D	D
Critical Lane Group	No	No	No	No	Yes	No	No	Yes	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.44	9.77	9.53	2.32	15.50	3.63	10.53	16.42	8.88	2.41	9.12	0.80
50th-Percentile Queue Length [ft/ln]	61.10	244.21	238.24	57.95	387.45	90.81	263.14	410.41	222.08	60.22	228.01	20.01
95th-Percentile Queue Length [veh/ln]	4.40	14.89	14.59	4.17	22.27	6.54	15.85	23.06	13.77	4.34	14.07	1.44
95th-Percentile Queue Length [ft/ln]	109.98	372.36	364.81	104.30	556.79	163.46	396.15	576.53	344.28	108.39	351.83	36.01

Movement, Approach, & Intersection Results

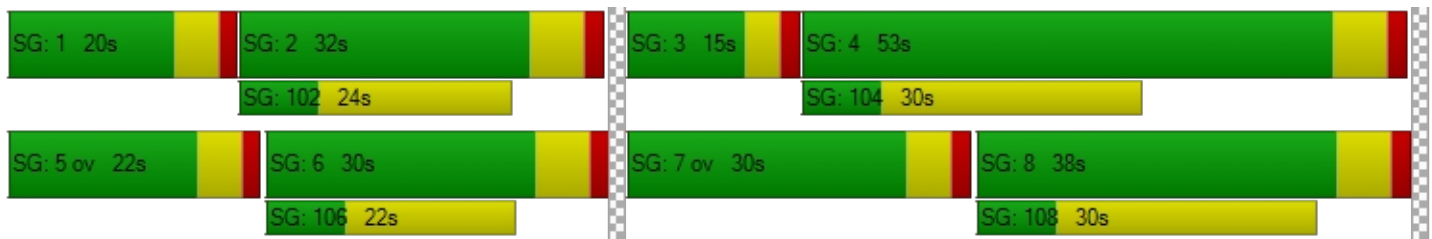
d_M, Delay for Movement [s/veh]	21.53	31.83	31.87	20.11	68.88	25.07	51.72	43.19	15.08	52.01	45.43	37.29
Movement LOS	C	C	C	C	F	C	D	D	B	D	D	D
d_A, Approach Delay [s/veh]	28.96			52.29			37.07			45.91		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	40.55											
Intersection LOS	D											
Intersection V/C	0.662											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	3.328	3.395	3.518	3.125
Crosswalk LOS	C	C	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	428	395	778	528
d_b, Bicycle Delay [s]	37.05	38.64	22.39	32.49
I_b,int, Bicycle LOS Score for Intersection	2.546	2.748	3.399	2.215
Bicycle LOS	B	B	C	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: Rio Wrangler Pkwy / Steamboat Pkwy

Control Type:	Signalized	Delay (sec / veh):	14.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.438

Intersection Setup

Name	Rio Wrangler Pkwy			Rio Wrangler Pkwy			Steamboat Pkwy			Steamboat Pkwy		
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	0	0	1	1	0	0	0	0	0
Entry Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	100.00	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]	45.00			45.00			45.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Rio Wrangler Pkwy			Rio Wrangler Pkwy			Steamboat Pkwy			Steamboat Pkwy		
Base Volume Input [veh/h]	169	200	3	5	140	271	537	30	442	5	10	5
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 [%]	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
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	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	169	200	3	5	140	271	537	30	442	5	10	5
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	53	1	1	37	71	141	8	116	1	3	1
Total Analysis Volume [veh/h]	178	211	3	5	147	285	565	32	465	5	11	5
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
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]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	1	6	0	0	2	2	3	8	8	0	4	0
Auxiliary Signal Groups						2,3			1,8			
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	5	5	5	5	0	5	0
Maximum Green [s]	30	30	0	0	30	30	30	30	30	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	9	44	0	0	35	35	38	66	66	0	28	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	7	0	7	0
Pedestrian Clearance [s]	0	11	0	0	24	24	0	15	15	0	15	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]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	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	R	L	C	R	C
C, Cycle Length [s]	58	58	58	58	58	58	58	58
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	10	24	10	35	21	27	41	2
g / C, Green / Cycle	0.18	0.41	0.16	0.59	0.36	0.46	0.70	0.03
(v / s)_i Volume / Saturation Flow Rate	0.10	0.11	0.08	0.18	0.31	0.02	0.29	0.92
s, saturation flow rate [veh/h]	1805	1891	1795	1611	1805	1895	1611	23
c, Capacity [veh/h]	316	771	359	955	650	863	1126	77
d1, Uniform Delay [s]	22.09	11.57	22.22	5.89	17.43	8.83	3.73	29.27
k, delay calibration	0.11	0.11	0.11	0.11	0.16	0.11	0.13	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.57	0.19	0.80	0.17	5.52	0.02	0.29	8.61
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.56	0.28	0.42	0.30	0.87	0.04	0.41	0.27
d, Delay for Lane Group [s/veh]	23.65	11.76	23.02	6.06	22.95	8.85	4.02	37.88
Lane Group LOS	C	B	C	A	C	A	A	D
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.08	1.50	1.73	1.11	6.62	0.18	0.96	0.47
50th-Percentile Queue Length [ft/ln]	51.96	37.53	43.34	27.64	165.53	4.41	23.92	11.80
95th-Percentile Queue Length [veh/ln]	3.74	2.70	3.12	1.99	10.84	0.32	1.72	0.85
95th-Percentile Queue Length [ft/ln]	93.53	67.56	78.01	49.75	271.02	7.93	43.05	21.25

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.65	11.76	11.76	23.02	23.02	6.06	22.95	8.85	4.02	37.88	37.88	37.88
Movement LOS	C	B	B	C	C	A	C	A	A	D	D	D
d_A, Approach Delay [s/veh]	17.16			11.96			14.24			37.88		
Approach LOS	B			B			B			D		
d_I, Intersection Delay [s/veh]	14.58											
Intersection LOS	B											
Intersection V/C	1.438											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	44.55			44.55			44.55			44.55		
I_p,int, Pedestrian LOS Score for Intersection	2.449			2.544			2.702			1.756		
Crosswalk LOS	B			B			B			A		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	727			564			1127			436		
d_b, Bicycle Delay [s]	22.27			28.37			10.47			33.62		
I_b,int, Bicycle LOS Score for Intersection	2.206			2.281			3.312			1.594		
Bicycle LOS	B			B			C			A		

Sequence

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



Intersection Level Of Service Report

Intersection 14: Rio Wrangler Pkwy / McCauley Ranch Blvd

Control Type:	Signalized	Delay (sec / veh):	9.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.255

Intersection Setup

Name	Rio Wrangler Pkwy		Rio Wrangler Pkwy		MCCauley Ranch Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↔		↔↑		↔↔	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	110.00	100.00	125.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00		30.00		25.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Rio Wrangler Pkwy		Rio Wrangler Pkwy		MCCauley Ranch Blvd	
Base Volume Input [veh/h]	222	25	128	275	15	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.50	1.50	1.50	1.50	1.50	1.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	222	25	128	275	15	84
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	7	34	72	4	22
Total Analysis Volume [veh/h]	234	26	135	289	16	88
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing in	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

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]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal Group	6	0	5	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	5	0	5	5	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.5	0.0	3.5	3.5	3.5	0.0
All red [s]	1.5	0.0	1.5	1.5	1.5	0.0
Split [s]	27	0	37	64	56	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	15	0	0	17	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	0.0	3.0	3.0	3.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	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
I, Upstream Filtering Factor	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	C	R	L	C	L	R
C, Cycle Length [s]	25	25	25	25	25	25
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	5	5	3	13	3	3
g / C, Green / Cycle	0.18	0.18	0.12	0.50	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.12	0.02	0.08	0.15	0.01	0.06
s, saturation flow rate [veh/h]	1877	1596	1788	1877	1788	1596
c, Capacity [veh/h]	348	295	220	946	186	166
d1, Uniform Delay [s]	9.68	8.61	10.62	3.71	10.33	10.84
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.27	0.13	2.77	0.18	0.20	2.59
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.67	0.09	0.61	0.31	0.09	0.53
d, Delay for Lane Group [s/veh]	11.95	8.74	13.39	3.89	10.53	13.43
Lane Group LOS	B	A	B	A	B	B
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.81	0.07	0.65	0.26	0.07	0.46
50th-Percentile Queue Length [ft/ln]	20.16	1.71	16.33	6.53	1.74	11.54
95th-Percentile Queue Length [veh/ln]	1.45	0.12	1.18	0.47	0.12	0.83
95th-Percentile Queue Length [ft/ln]	36.29	3.08	29.39	11.75	3.12	20.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.95	8.74	13.39	3.89	10.53	13.43
Movement LOS	B	A	B	A	B	B
d_A, Approach Delay [s/veh]	11.63		6.92		12.98	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	9.27					
Intersection LOS	A					
Intersection V/C	0.255					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	0.00	49.50
I_p,int, Pedestrian LOS Score for Intersection	2.229	0.000	2.026
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	367	983	850
d_b, Bicycle Delay [s]	40.02	15.50	19.84
I_b,int, Bicycle LOS Score for Intersection	1.989	2.259	1.560
Bicycle LOS	A	B	A

Sequence





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



Intersection Level Of Service Report
Intersection 15: S. Virginia St / Geiger Grade Rd

Control Type:	Signalized	Delay (sec / veh):	60.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.804

Intersection Setup

Name	Geiger Grade Rd			Mt. Rose Hwy			S. Virginia St			S. Virginia St		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
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	2	0	1	2	0	1	2	0	0
Entry Pocket Length [ft]	350.00	100.00	100.00	725.00	100.00	250.00	525.00	100.00	100.00	600.00	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]	35.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Geiger Grade Rd			Mt. Rose Hwy			S. Virginia St			S. Virginia St		
Base Volume Input [veh/h]	158	660	863	261	938	109	59	437	211	1683	809	293
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 [%]	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
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	259	0	0	57	0	0	63	0	0	88
Total Hourly Volume [veh/h]	158	660	604	261	938	52	59	437	148	1683	809	205
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	42	174	159	69	247	14	16	115	39	443	213	54
Total Analysis Volume [veh/h]	166	695	636	275	987	55	62	460	156	1772	852	216
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	0	3	8	0	5	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	5	5	5	5
Maximum Green [s]	30	35	0	20	35	0	25	40	40	40	40	40
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	5.0	5.0	4.0	5.0	5.0
All red [s]	1.0	1.5	0.0	1.5	1.5	0.0	1.0	2.0	2.0	2.0	2.0	2.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	7
Pedestrian Clearance [s]	0	28	0	0	28	0	0	18	18	0	18	18
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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	3.5	0.0	3.5	3.5	0.0	3.0	5.0	5.0	4.0	5.0	5.0
Minimum Recall	No	No		No	No		No	Yes		No	Yes	
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	L	C	L	C	R	L	C	R
C, Cycle Length [s]	128	128	128	128	128	128	128	128	128	128
L, Total Lost Time per Cycle [s]	5.00	5.50	5.50	5.50	5.00	7.00	7.00	6.00	7.00	7.00
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
l2, Clearance Lost Time [s]	3.00	3.50	3.50	3.50	3.00	5.00	5.00	4.00	5.00	5.00
g_i, Effective Green Time [s]	14	36	12	35	5	16	16	40	52	52
g / C, Green / Cycle	0.11	0.28	0.10	0.27	0.04	0.12	0.12	0.31	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.09	0.19	0.08	0.28	0.02	0.09	0.10	0.34	0.17	0.13
s, saturation flow rate [veh/h]	1794	3586	3484	3586	3484	5131	1601	5225	5131	1601
c, Capacity [veh/h]	197	1006	340	976	123	637	199	1626	2092	653
d1, Uniform Delay [s]	56.15	41.27	56.83	46.77	60.89	54.16	54.63	44.27	27.03	26.06
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.47	0.86	4.62	16.10	3.15	1.57	6.68	43.10	0.13	0.29
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
Rp, platoon ratio	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

Lane Group Results

X, volume / capacity	0.84	0.69	0.81	1.01	0.50	0.72	0.79	1.09	0.41	0.33
d, Delay for Lane Group [s/veh]	65.63	42.13	61.45	62.87	64.04	55.73	61.31	87.37	27.16	26.36
Lane Group LOS	E	D	E	F	E	E	E	F	C	C
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.76	9.84	4.49	17.19	1.03	4.76	5.15	23.00	6.00	4.44
50th-Percentile Queue Length [ft/ln]	143.99	245.90	112.30	429.87	25.69	118.90	128.86	575.08	150.02	110.88
95th-Percentile Queue Length [veh/ln]	9.70	14.98	7.97	24.16	1.85	8.33	8.88	32.61	10.02	7.89
95th-Percentile Queue Length [ft/ln]	242.39	374.49	199.20	603.92	46.24	208.32	221.95	815.17	250.46	197.22

Movement, Approach, & Intersection Results

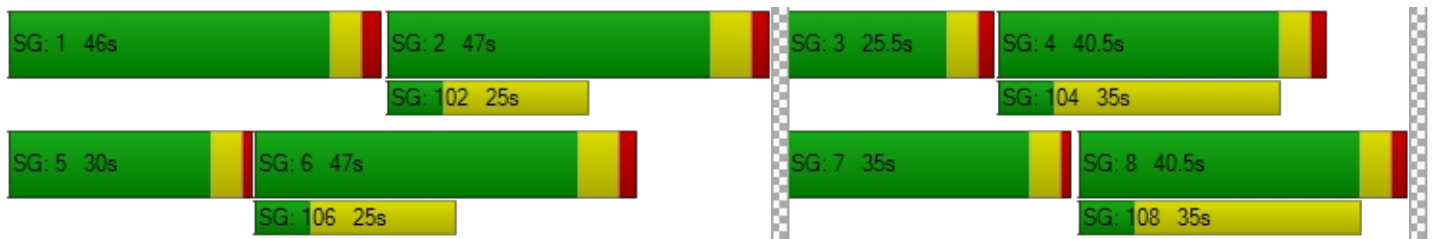
d_M, Delay for Movement [s/veh]	65.63	42.13	0.00	61.45	62.87	0.00	64.04	55.73	61.31	87.37	27.16	26.36
Movement LOS	E	D		E	F		E	E	E	F	C	C
d_A, Approach Delay [s/veh]	46.66			62.56			57.77			64.67		
Approach LOS	D			E			E			E		
d_I, Intersection Delay [s/veh]	60.62											
Intersection LOS	E											
Intersection V/C	0.804											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	69.38			69.38			69.38			69.38		
I_p,int, Pedestrian LOS Score for Intersection	3.245			3.107			3.252			3.655		
Crosswalk LOS	C			C			C			D		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	438			438			500			500		
d_b, Bicycle Delay [s]	48.83			48.83			45.00			45.00		
I_b,int, Bicycle LOS Score for Intersection	2.270			2.601			1.967			3.170		
Bicycle LOS	B			B			A			C		

Sequence

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



Intersection Level Of Service Report
Intersection 16: Veterans Pkwy / Geiger Grade Rd

Control Type:	Signalized	Delay (sec / veh):	56.8
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.768

Intersection Setup

Name	Geiger Grade Rd			E. Whites Creek Ln			Geiger Grade Rd			Veterans Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
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	2	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	250.00	100.00	150.00	250.00	100.00	150.00	250.00	100.00	100.00	250.00	100.00	150.00
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]	20.00			20.00			20.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Geiger Grade Rd			E. Whites Creek Ln			Geiger Grade Rd			Veterans Pkwy		
Base Volume Input [veh/h]	797	138	202	154	215	203	276	939	1369	362	771	34
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 [%]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	61	0	0	61	0	0	411	0	0	18
Total Hourly Volume [veh/h]	797	138	141	154	215	142	276	939	958	362	771	16
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	210	36	37	41	57	37	73	247	252	95	203	4
Total Analysis Volume [veh/h]	839	145	148	162	226	149	291	988	1008	381	812	17
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
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]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Unsigna	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.5	3.5	0.0	3.5	3.5	0.0	3.5	3.5	0.0	3.5	3.5	0.0
All red [s]	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	0.0
Split [s]	24	41	0	20	37	0	28	33	0	46	51	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	24	0	0	21	0	0	10	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
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	R	L	C	R	L	C	L	C	R
C, Cycle Length [s]	140	140	140	140	140	140	140	140	140	140	140
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
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]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	26	30	30	15	19	19	25	43	32	51	51
g / C, Green / Cycle	0.18	0.22	0.22	0.10	0.14	0.14	0.18	0.31	0.23	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.16	0.04	0.09	0.09	0.12	0.09	0.16	0.28	0.21	0.23	0.01
s, saturation flow rate [veh/h]	5230	3589	1602	1795	1885	1602	1795	3589	1795	3589	1602
c, Capacity [veh/h]	955	775	346	187	259	221	317	1108	410	1294	578
d1, Uniform Delay [s]	55.71	44.84	47.41	61.74	59.15	57.40	56.66	46.16	52.93	37.00	28.94
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.26	0.50	0.18	0.50	0.50
l, 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]	2.81	0.12	0.84	11.29	9.28	3.59	20.83	10.93	14.50	2.31	0.09
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	0.88	0.19	0.43	0.87	0.87	0.68	0.92	0.89	0.93	0.63	0.03
d, Delay for Lane Group [s/veh]	58.51	44.95	48.24	73.03	68.43	60.98	77.49	57.08	67.43	39.32	29.03
Lane Group LOS	E	D	D	E	E	E	E	E	E	D	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	10.03	2.13	4.65	6.36	8.66	5.33	12.11	18.34	14.99	12.18	0.40
50th-Percentile Queue Length [ft/ln]	250.68	53.29	116.35	159.02	216.47	133.28	302.82	458.54	374.69	304.50	10.01
95th-Percentile Queue Length [veh/ln]	15.22	3.84	8.19	10.50	13.48	9.12	17.82	25.37	21.34	17.90	0.72
95th-Percentile Queue Length [ft/ln]	380.51	95.92	204.80	262.42	337.12	227.94	445.51	634.13	533.42	447.60	18.02

Movement, Approach, & Intersection Results

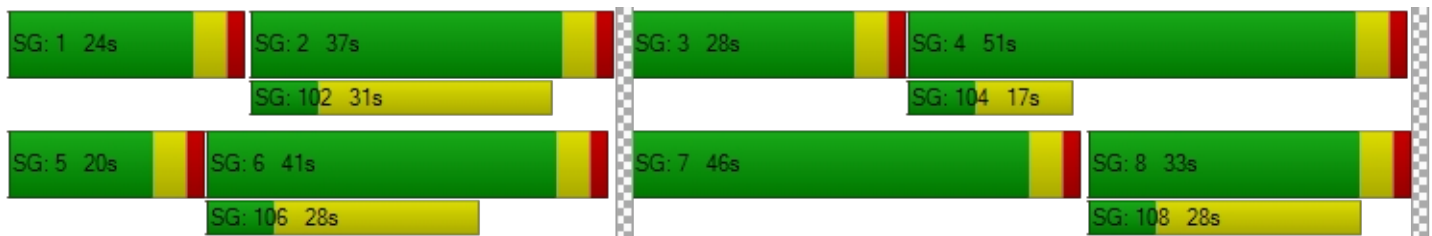
d_M, Delay for Movement [s/veh]	58.51	44.95	48.24	73.03	68.43	60.98	77.49	57.08	0.00	67.43	39.32	29.03
Movement LOS	E	D	D	E	E	E	E	E		E	D	C
d_A, Approach Delay [s/veh]	55.43			67.75			61.73			48.03		
Approach LOS	E			E			E			D		
d_I, Intersection Delay [s/veh]	56.80											
Intersection LOS	E											
Intersection V/C	0.768											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	59.43			59.43			59.43			59.43		
l_p,int, Pedestrian LOS Score for Intersection	2.869			2.547			2.798			2.780		
Crosswalk LOS	C			B			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	514			457			400			657		
d_b, Bicycle Delay [s]	38.63			41.66			44.80			31.56		
l_b,int, Bicycle LOS Score for Intersection	2.544			2.546			2.615			2.573		
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: Steamboat & Rio Wrangler PM

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed mph
		Total veh/h	HV %				Vehicles veh	Distance ft			
South: Rio Wrangler											
3	L2	178	2.0	0.660	20.4	LOS C	4.2	106.2	0.78	0.88	27.0
8	T1	211	2.0	0.660	20.4	LOS C	4.2	106.2	0.78	0.88	27.1
18	R2	3	2.0	0.660	20.4	LOS C	4.2	106.2	0.78	0.88	26.6
Approach		392	2.0	0.660	20.4	LOS C	4.2	106.2	0.78	0.88	27.0
East: Steamboat											
1	L2	5	2.0	0.050	9.3	LOS A	0.2	3.9	0.63	0.63	31.5
6	T1	11	2.0	0.050	9.3	LOS A	0.2	3.9	0.63	0.63	31.6
16	R2	5	2.0	0.050	9.3	LOS A	0.2	3.9	0.63	0.63	30.9
Approach		21	2.0	0.050	9.3	LOS A	0.2	3.9	0.63	0.63	31.4
North: Rio Wrangler											
7	L2	5	2.0	0.168	5.6	LOS A	0.6	16.1	0.34	0.23	33.6
4	T1	147	2.0	0.168	5.6	LOS A	0.6	16.1	0.34	0.23	33.7
14	R2	285	2.0	0.174	0.0	LOS A	0.0	0.0	0.00	0.00	36.5
Approach		438	2.0	0.174	2.0	LOS A	0.6	16.1	0.12	0.08	35.5
West: Steamboat											
5	L2	565	2.0	0.644	13.7	LOS B	4.8	121.4	0.56	0.42	28.6
2	T1	42	2.0	0.644	13.7	LOS B	4.8	121.4	0.56	0.42	28.7
12	R2	465	2.0	0.283	0.0	LOS A	0.0	0.0	0.00	0.00	36.5
Approach		1073	2.0	0.644	7.8	LOS A	4.8	121.4	0.32	0.24	31.5
All Vehicles		1923	2.0	0.660	9.0	LOS A	4.8	121.4	0.37	0.34	31.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

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 HCM 2010).

Roundabout Capacity Model: US HCM 2010.

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: Rio Wrangler & McCauley Ranch PM

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Rio Wrangler											
8	T1	234	2.0	0.269	6.4	LOS A	1.1	29.1	0.31	0.20	33.4
18	R2	26	2.0	0.269	6.4	LOS A	1.1	29.1	0.31	0.20	32.7
Approach		260	2.0	0.269	6.4	LOS A	1.1	29.1	0.31	0.20	33.3
East: McCauley Ranch											
1	L2	16	2.0	0.119	5.3	LOS A	0.4	10.9	0.35	0.25	33.6
16	R2	88	2.0	0.119	5.3	LOS A	0.4	10.9	0.35	0.25	33.0
Approach		104	2.0	0.119	5.3	LOS A	0.4	10.9	0.35	0.25	33.0
North: Rio Wrangler											
7	L2	135	2.0	0.389	7.3	LOS A	2.1	52.2	0.11	0.03	32.2
4	T1	289	2.0	0.389	7.3	LOS A	2.1	52.2	0.11	0.03	32.3
Approach		424	2.0	0.389	7.3	LOS A	2.1	52.2	0.11	0.03	32.3
All Vehicles		788	2.0	0.389	6.8	LOS A	2.1	52.2	0.21	0.12	32.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

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 HCM 2010).

Roundabout Capacity Model: US HCM 2010.

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.

Appendix D

Cost Estimate Calculations

Improvements

ID	Potential Improvement	Cost
1	S. Meadows Pkwy / Gateway Dr Enhancements (Extend EB Left Turn Pocket)	
	Removal/Demolition (roadway, curb, landscaping, etc.)	\$ 40,000
	Construct Improvements (1/2 roadway widening and reconstruction, curb, and striping)	\$ 330,000
	Design Services (survey, engineering)	\$ 40,000
	Construction Services (staking, testing, inspection, construction management)	\$ 40,000
	10% Contingency	\$ 50,000
		\$ 500,000
2	Rio Wrangler Pkwy Widening (4 Lanes From Summer Glen Dr to Western Skies Dr)	
	Removal/Demolition/Modification (roadway, curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 100,000
	Construct Improvements (roadway widening and reconstruction, curb, storm drain, and striping)	\$ 400,000
	Design Services (survey, engineering)	\$ 75,000
	Construction Services (staking, testing, inspection, construction management)	\$ 75,000
	10% Contingency	\$ 100,000
		\$ 750,000
3	S. Virginia St Widening (6 Lanes From Longely Lane to I-580 S Ramps)	
	Removal/Demolition/Modification (curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 1,800,000
	Construct Improvements (roadway widening, curb, storm drain, and striping)	\$ 9,800,000
	Traffic Signal Modifications	\$ 1,500,000
	Relocation/Undergrounding Overhead Electrical/Communication Lines	\$ 1,500,000
	Design Services (survey, engineering)	\$ 2,200,000
	Construction Services (staking, testing, inspection, construction management)	\$ 2,200,000
	10% Contingency	\$ 2,000,000
		\$ 21,000,000
4	S. Virginia St / I-580 NB Off Ramp Improvements (Traffic Signal or Free Right)	
	Removal/Demolition/Modification (curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 3,000
	Construct Improvements (roadway widening, curb, storm drain, and striping)	\$ 30,000
	Traffic Signal Modifications	\$ 300,000
	Design Services (survey, engineering)	\$ 50,000
	Construction Services (staking, testing, inspection, construction management)	\$ 50,000
	10% Contingency	\$ 100,000
		\$ 500,000
5	Veterans Pkwy / Long Meadow Dr Improvements Traffic Signal	
	Removal/Demolition/Modification (curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 3,000
	Construct Improvements (curb and gutter, sidewalk, and signage and striping)	\$ 27,000
	Traffic Signal (including interconnect)	\$ 500,000
	Design Services (survey, engineering)	\$ 60,000
	Construction Services (staking, testing, inspection, construction management)	\$ 60,000
10% Contingency	\$ 100,000	
		\$ 750,000
6	Damonte Ranch Pkwy / Double R Blvd Enhancements (Add WB Right)	
	Removal/Demolition/Modification (curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 24,000
	Construct Improvements (curb and gutter, sidewalk, and signage and striping)	\$ 209,000
	Traffic Signal Modification	\$ 75,000
	Design Services (survey, engineering)	\$ 46,000
	Construction Services (staking, testing, inspection, construction management)	\$ 46,000
10% Contingency	\$ 100,000	
		\$ 500,000



7	Veterans Pkwy / Carat Ave Enhancements (Add EB & WB Right Turn Lanes)	
	Removal/Demolition/Modification (roadway, curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 70,000
	Construct Improvements (roadway widening and reconstruction, curb and gutter, sidewalk, rockery walls, and signage and striping)	\$ 480,000
	Traffic Signal Modification	\$ 150,000
	Design Services (survey, engineering)	\$ 105,000
	Construction Services (staking, testing, inspection, construction management)	\$ 105,000
	10% Contingency	\$ 90,000
		<u>\$ 1,000,000</u>
8	Veterans Pkwy / Steamboat Pkwy Enhancements (Add EB & WB Right Turn Lanes, NB Right Turn Lane, NB & SB Dual Lefts)	
	Removal/Demolition/Modification (curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 170,000
	Construct Improvements (roadway widening, curb, storm drain, landscaping, signage and striping)	\$ 1,100,000
	Traffic Signal Modifications	\$ 500,000
	Design Services (survey, engineering)	\$ 265,000
	Construction Services (staking, testing, inspection, construction management)	\$ 265,000
	10% Contingency	\$ 200,000
		<u>\$ 2,500,000</u>
9	S. Meadows Pkwy / Wilbur May Pkwy Improvements (Traffic Signal)	
	Removal/Demolition/Modification (curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 3,000
	Construct Improvements (curb and gutter, sidewalk, and signage and striping)	\$ 27,000
	Traffic Signal (including interconnect)	\$ 500,000
	Design Services (survey, engineering)	\$ 60,000
	Construction Services (staking, testing, inspection, construction management)	\$ 60,000
	10% Contingency	\$ 100,000
		<u>\$ 750,000</u>
10	Rio Wrangler Pkwy / Steamboat Pkwy Improvements (Traffic Signal or Roundabout)	
	Removal/Demolition/Modification (curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 300,000
	Construct Improvements (curb and gutter, sidewalk, lighting, and signage and striping)	\$ 2,000,000
	Design Services (survey, engineering)	\$ 200,000
	Construction Services (staking, testing, inspection, construction management)	\$ 200,000
	10% Contingency	\$ 300,000
		<u>\$ 3,000,000</u>
	*Does not include acquisition of right of way	
11	Rio Wrangler Pkwy / McCauley Ranch Blvd Improvements (All-Way STOP, Traffic Signal, or Roundabout)	
	Removal/Demolition/Modification (curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 300,000
	Construct Improvements (curb and gutter, sidewalk, lighting, and signage and striping)	\$ 2,000,000
	Design Services (survey, engineering)	\$ 200,000
	Construction Services (staking, testing, inspection, construction management)	\$ 200,000
	10% Contingency	\$ 300,000
		<u>\$ 3,000,000</u>
	*Does not include acquisition of right of way	
12	Western Skies Dr Extension (New 2 Lane Roadway)	Private
13	Steamboat Pkwy / Hampton Park Dr Improvements (Traffic Signal)	
	Removal/Demolition/Modification (curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 3,000
	Construct Improvements (curb and gutter, sidewalk, and signage and striping)	\$ 27,000
	Traffic Signal (including interconnect)	\$ 500,000
	Design Services (survey, engineering)	\$ 60,000
	Construction Services (staking, testing, inspection, construction management)	\$ 60,000
	10% Contingency	\$ 100,000
		<u>\$ 750,000</u>



14	S. Meadows Pkwy / Double Diamond Pkwy Enhancements (Add WB Right, Dual SB Left)	
	Removal/Demolition/Modification (roadway, curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 120,000
	Construct Improvements (roadway widening, curb, storm drain, box culverts, landscaping, signage and striping)	\$ 1,120,000
	Traffic Signal Modifications	\$ 160,000
	Design Services (survey, engineering)	\$ 210,000
	Construction Services (staking, testing, inspection, construction management)	\$ 210,000
	10% Contingency	\$ 180,000
		<u>\$ 2,000,000</u>
15	Damonte Ranch Pkwy Widening (6 Lanes From Promenade Way to Steamboat Pkwy)	
	Removal/Demolition/Modification (striping)	\$ 3,000
	Construct Improvements (slurry seal, striping)	\$ 65,000
	Traffic Signal Modifications	\$ 5,000
	Design Services (survey, engineering)	\$ 9,000
	Construction Services (staking, testing, inspection, construction management)	\$ 9,000
	10% Contingency	\$ 9,000
		<u>\$ 100,000</u>
16	Steamboat Pkwy Widening (6 Lanes From Damonte Ranch Pkwy to Veterans Pkwy)	
	Removal/Demolition/Modification (roadway, curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 600,000
	Construct Improvements (roadway widening and reconstruction, curb, storm drain, and striping)	\$ 1,100,000
	Traffic Signal Modifications	\$ 600,000
	Relocation Underground Electrical/Communication Lines	\$ 500,000
	Design Services (survey, engineering)	\$ 400,000
	Construction Services (staking, testing, inspection, construction management)	\$ 400,000
	10% Contingency	\$ 400,000
		<u>\$ 4,000,000</u>
17	Damonte Ranch Pkwy / Steamboat Pkwy Enhancements (Lane Alignment & Triple SB Lefts)	
	Removal/Demolition/Modification (curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 50,000
	Construct Improvements (roadway widening, curb, storm drain, lighting, and striping)	\$ 410,000
	Traffic Signal Modifications	\$ 150,000
	Relocation Underground Electrical/Communication Lines	\$ 200,000
	Design Services (survey, engineering)	\$ 50,000
	Construction Services (staking, testing, inspection, construction management)	\$ 50,000
	10% Contingency	\$ 90,000
		<u>\$ 1,000,000</u>
18	Damonte Ranch Pkwy / I-580 Ramps (Lane Alignment to NB On-Ramps)	
	Removal/Demolition/Modification (striping)	\$ 700,000
	Construct Improvements (slurry seal, open grade paving, and signage and striping)	\$ 3,000,000
	Design Services (survey, engineering)	\$ 400,000
	Construction Services (staking, testing, inspection, construction management)	\$ 400,000
	10% Contingency	\$ 500,000
		<u>\$ 5,000,000</u>
19	Veterans Pkwy / Damonte Ranch Extension Improvements (Traffic Signal)	
	Removal/Demolition/Modification (curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 3,000
	Construct Improvements (curb and gutter, sidewalk, and signage and striping)	\$ 17,000
	Traffic Signal (including interconnect)	\$ 500,000
	Design Services (survey, engineering)	\$ 65,000
	Construction Services (staking, testing, inspection, construction management)	\$ 65,000
	10% Contingency	\$ 100,000
		<u>\$ 750,000</u>



20	Veterans Pkwy Widening (6 Lanes from S. Virginia to Damonte Ranch Extension)	
	Removal/Demolition/Modification (curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 700,000
	Construct Improvements (roadway widening and reconstruction, curb, storm drain, median, lighting, signage and striping)	\$ 2,800,000
	Design Services (survey, engineering)	\$ 500,000
	Construction Services (staking, testing, inspection, construction management)	\$ 500,000
	10% Contingency	\$ 500,000
		\$ 5,000,000
21	S. Virginia St / Veterans Pkwy Enhancements (Triple SB Left)	
	Removal/Demolition/Modification (curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 1,100,000
	Construct Improvements (1/2 roadway widening and reconstruction, curb, storm drain, median, signage and striping)	\$ 5,300,000
	Traffic Signal Modifications	\$ 200,000
	Design Services (survey, engineering)	\$ 800,000
	Construction Services (staking, testing, inspection, construction management)	\$ 800,000
	10% Contingency	\$ 800,000
		\$ 9,000,000
22	S. Meadows Pkwy / Echo Valley Pkwy Improvements (Traffic Signal)	Private
23	Rio Wrangler Pkwy Extension (New 2 Lane Roadway)	Private
24	S. Meadows Pkwy Extension to Storey County Line (New 4 Lane Roadway)	Private
25	Damonte Ranch Capacity Improvements (I-580 to Double R Blvd)	
	Removal/Demolition/Modification (curb and gutter, sidewalk, storm drain, landscaping, etc.)	\$ 1,400,000
	Construct Improvements (roadway widening and reconstruct, curb, storm drain, median, signage and striping)	\$ 4,700,000
	Traffic Signal Modifications	\$ 600,000
	Relocation Underground Electrical/Communication Lines	\$ 300,000
	Design Services (survey, engineering)	\$ 1,000,000
	Construction Services (staking, testing, inspection, construction management)	\$ 1,000,000
	10% Contingency	\$ 1,000,000
		\$ 10,000,000
26	Geiger Grade Realignment (New 4 Lane Roadway)	\$ 75,100,000 †
	† Programmed Cost in the 2040 RTP	
27	Damonte Ranch Extension Pkwy (New 2 Lane Roadway)	Private
28	Rio Wrangler Pkwy Extension (New 2 Lane Roadway)	Private
29	Arrowcreek Pkwy Widening (4 Lanes From Zolezzi Ln to Wedge Pkwy)	\$ 8,300,000 †
	† Programmed Cost in the 2040 RTP	
30	Geiger Grade Widening (4 Lanes from Toll Rd to Rim Rock Dr)	Remove From RTP

Other Improvements

Options: New bike facilities/shared use paths are 10' wide.
 New bike facilities/shared use path = \$250/lf
 New pedestrian facilities are 6' wide.
 New pedestrian facilities = \$60/lf
 Bus stop improvements = \$100,000/location

