TRAFFIC IMPACT STUDY

For

4015 Arrowswest Drive
Colorado Springs

January 2023

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I. Introduction

Project Overview

This traffic impact study addresses the capacity, geometric, and control requirements associated with the development entitled 4015 Arrowswest Drive.

This proposed residential development consists of a multifamily housing community. The development is located on the south corner of Garden of the Gods Road and N 30th Street in Colorado Springs, Colorado.

Study Area Boundaries

The study area to be examined in this analysis encompasses the Garden of the Gods Road intersections with N 30th Street and Arrowswest Drive, and the east-west roadway intersections with N 30th Street and Arrowswest Drive.

Figure 1 illustrates location of the site and study intersections.

Site Description

Land for the development is currently vacant and surrounded by a mix of open space, commercial, and residential land uses.

The proposed development site is within the R-5 zoning district. Section 7.3.102 of the City's municipal code[1] describes the intent and purpose of the R-5 zoning district is to allow for high-density attached multifamily housing use. Considering the total development acreage and pursuant to the City's municipal code, the R-5 zoning district may allow for as many as 500 multifamily dwelling units. However, 4015 Arrowswest Drive is proposing the new construction of a multifamily residential community supporting 228 dwelling units.

Proposed access to the development is provided at the following locations: three existing full-movement intersections onto the east-west roadway between N 30th Street and Arrowswest Drive.

For purposes of this study, it is anticipated that development construction would be completed by end of Year 2025.

A conceptual site plan, as prepared by YOW Architects, is shown on Figure 2. This plan is provided for illustrative purposes only.

[1] City Code of Colorado Springs, Colorado, Sterling Codifiers, August 5, 2020.

North
Not to Scale
Flying W Ranch Road
East-West Roadway
Development Site
Garden of the Gods Road
Arroswest Drive
N 30th Street

North
Not to Scale
30TH STREET
(ROW VARIES)
COG ROAD
(ROW VARIES)
East-West Roadway
ARROWSWEST DRIVE
(60' ROW)

Existing and Committed Surface Transportation Network

Within the study area, N 30th Street is the primary roadway that will accommodate traffic to and from the proposed development. Secondary roadways include Garden of the Gods Road and Arrowswest Drive. A brief description of each roadway is provided below:

> N 30th Street is a northeast-southwest minor arterial roadway having four through lanes (two lanes in each direction) with a combination of shared and exclusive turn lanes at the intersections within the study area. N 30th Street provides a posted speed limit of 35 MPH.
>
> Garden of the Gods Road is an east-west principal arterial roadway having six through lanes (three lanes in each direction) with a posted speed limit of 40 MPH east of N 30th Street. West of N 30th Street, Garden of the Gods Road is an unclassified roadway with two through lanes (one lane in each direction) that extends into private property and provides a posted speed limit of 15 MPH. Per Sections 15.0 and 16.0 of the City's Engineering Criteria Manual[2], the roadway's estimated right-of-way (ROW) width, and its connection to N 30th Street, Garden of the Gods Road is assumed to be classified as a collector roadway west of N 30th Street. Garden of the Gods Road provides a combination of shared and exclusive turn lanes at the intersections within the study area.
>
> Arrowswest Drive is generally an east-west roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersections within the study area. Arrowswest Drive is unclassified in City's major thoroughfare plan[3]. However, per Sections 15.0 and 16.0 of the City's Engineering Criteria Manual and the roadway's estimated ROW width and connection to Garden of the Gods Road, Arrowswest Drive is assumed to be classified as a collector roadway with a posted speed limit of 30 MPH.

Table 16 of the City's Engineering Criteria Manual designates a minor arterial roadway (N 30th Street) as having an average daily traffic volume design capacity range of 5,000 to 25,000 vehicles per day. The average daily traffic volume design capacity range of 25,000 to 60,000 vehicles per day is defined for a principal arterial roadway (Garden of the Gods Road).

The study intersection of N 30th Street and Garden of the Gods Road is signalized. All other study intersections operate under a stop-controlled condition. A stop-controlled intersection is defined as a roadway intersection where vehicle rights-of-way are controlled by one or more "STOP" signs.

No regional or specific improvements for the above-described roadways are known to be planned or committed at this time. The study area roadways appear to be built to their ultimate cross-sections.

[2] Engineering Criteria Manual, Section III: Traffic Criteria Manual, City of Colorado Springs City Engineering, July 2010.
[3] Major Thoroughfare Plan, City of Colorado Springs, August 2011.

II. Existing Traffic Conditions

Morning (AM) and afternoon (PM) peak hour traffic counts were collected at the Arrowswest Drive intersections with Garden of the Gods Road and the east-west roadway, as well as the N 30th Street intersection with the east-west roadway. Counts were collected on Tuesday July 27, 2021, and Thursday August 5, 2021, with AM peak hour counts being collected during the period of 7:00 a.m. to 9:00 a.m., and PM peak hour counts being collected during the period of 4:00 p.m. to 6:00 p.m. Average daily (24-hour) traffic volumes were collected on Garden of the Gods Road.

New peak hour traffic counts shown for the Garden of the Gods Road and N 30th Street intersection were obtained from the 2424 Garden of the Gods Traffic Impact Study[4]. New counts were collected on Tuesday October 25, 2022, with AM peak hour counts being collected during the period of 7:00 a.m. to 9:00 a.m., and PM peak hour counts being collected during the period of 4:00 p.m. to 6:00 p.m.

In order to more accurately and conservatively represent existing traffic volumes, traffic count data was grown to Year 2023 at a conservative growth rate of two percent.

It was witnessed that at the time of count collection, 30th Street was closed from Fontanero Street to Gateway Road, south of the Garden of the Gods Park entrance, as part of the City's 30th Street Corridor Project. However, full access to Garden of the Gods Park, visitor and nature center is maintained from garden of the Gods Road. With desired 30th Street improvements, newly collected peak hour volumes at the 30th Street with Garden of the Gods Road intersection have been confirmed to accurately reflect traffic distribution patterns under normal conditions.

To continue providing for a conservative analysis, a seasonal adjustment to all peak hour and 24-hour traffic volumes was then applied to account for peak periods of tourism. The latest Highway Capacity Manual (HCM)[5] describes the summer season (approximately June to August) as the peak traffic months in urban areas.

Red Leg Brewery is a recently approved development located on the east side of Arrowswest Drive and is served in part by the extension of the east-west roadway across Arrowswest Drive. An auxiliary use of the Brewery is an approximate 24,000 square foot outdoor entertainment venue that could be used to accommodate 670 to 1,000 attendees during acceptable weather days. At the time of traffic count collection, the adjacent Red Leg Brewery was already open and operational. However, to further consider area road and intersection operations during peak use of the outdoor entertainment area, applicable vehicle trip generation from the Red Leg Brewing Company traffic generation analysis[6] was also added to existing traffic conditions.

[4] 2424 Garden of the Gods: Traffic Impact Study, SM ROCHA, LLC, November 2022.
[5] Highway Capacity Manual, Sixth Edition: A Guide for Multimodal Mobility Analysis, Transportation Research Board, 2016.
[6] Red Leg Brewing Company, SM ROCHA, LLC, November 2020.

Newly collected and referenced counts representing existing traffic volumes are shown on Figure 3. Traffic count data is included for reference in Appendix A.

Existing signal timing parameters for N 30th Street and Garden of the Gods Road were obtained from City Staff and used throughout this study to the best extent possible to remain consistent with existing signal coordination plans. City signal timing information received is included for reference in Appendix A.

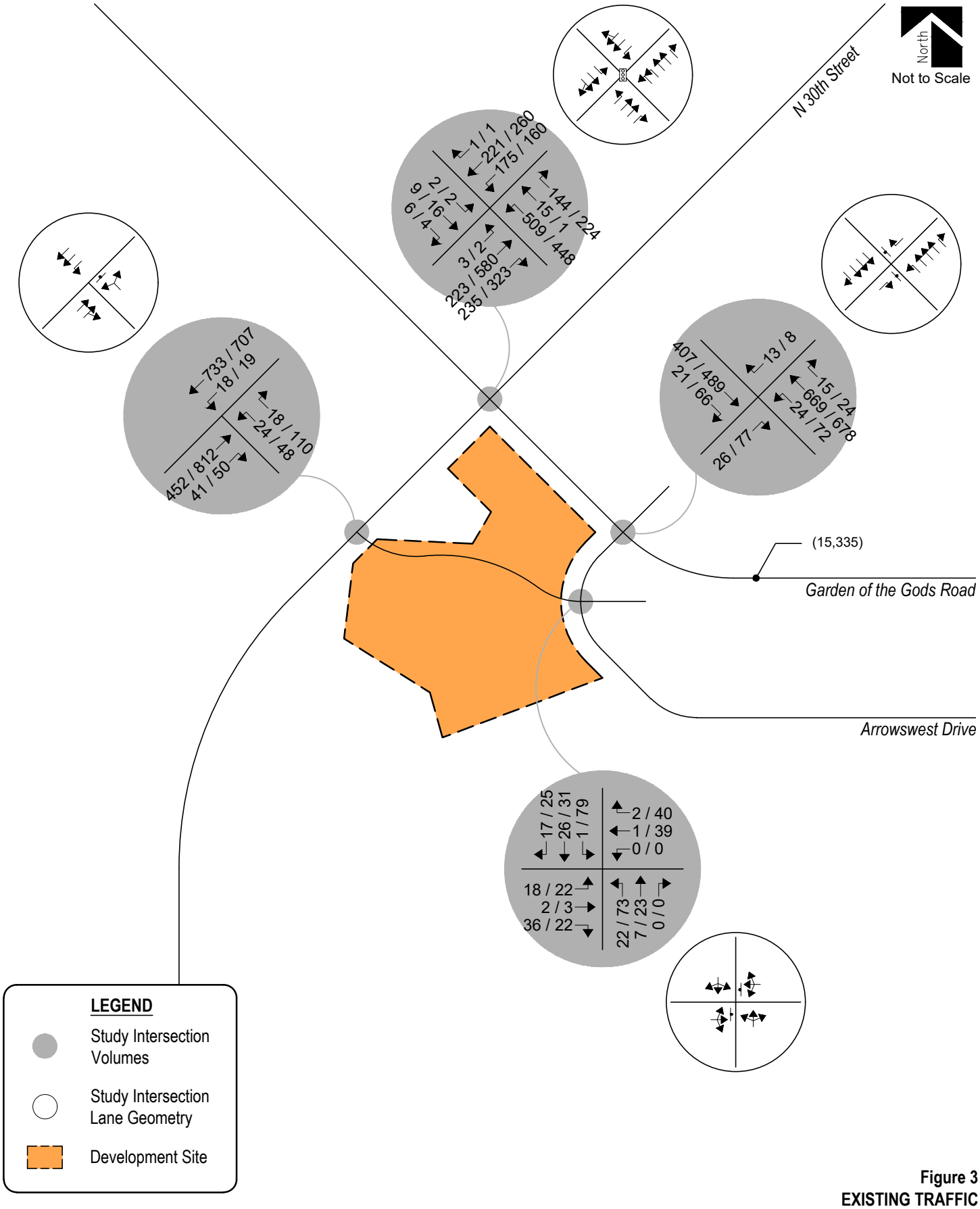


Figure 3
EXISTING TRAFFIC
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

The Signalized and Unsignalized Intersection Analysis techniques, as published in the Highway Capacity Manual (HCM) by the Transportation Research Board and as incorporated into the SYNCHRO computer program, were used to analyze the study intersections for existing traffic conditions. These nationally accepted techniques allow for the determination of intersection level of service (LOS) based on the congestion and delay of each traffic movement.

Level of service is a method of measurement used by transportation professionals to quantify a driver's perception of travel conditions that include travel time, number of stops, and total amount of stopped delay experienced on a roadway network. The HCM categorizes level of service into a range from "A" which indicates little, if any, vehicle delay, to "F" which indicates a level of operation considered unacceptable to most drivers. These levels of service grades with brief descriptions of the operating condition, for unsignalized and signalized intersections, are included for reference in Appendix B and have been used throughout this study.

The level of service analyses results for existing conditions are summarized in Table 1. Intersection capacity worksheets developed for this study are provided in Appendix C.

Table 1 – Intersection Capacity Analysis Summary – Existing Traffic

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
Garden of the Gods Road / N 30th Street (Signalized)	B (18.8)	C (21.0)
Garden of the Gods Road / Arrowswest Drive (Stop-Controlled)		
Westbound Left	B	B
Northbound Right	B	B
Southbound Right	B	B
Arrowswest Drive / East-West Roadway (Stop-Controlled)		
Eastbound Left, Through and Right	A	B
Westbound Left, Through and Right	A	B
Northbound Left, Through and Right	A	A
Southbound Left, Through and Right	A	A
N 30th Street / East-West Roadway (Stop-Controlled)		
Westbound Left and Right	B	C
Southbound Left	A	B

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)
Stop-Controlled Intersection: Level of Service

Existing Traffic Analysis Results

Under existing conditions, operational analysis shows that the signalized intersection of Garden of the Gods Road with N 30th Street has overall operations at LOS B during the morning peak traffic hour and LOS C during the afternoon peak traffic hour.

All stop-controlled intersections within the study area have turn movement operations at or better than LOS B during the morning peak traffic hour and LOS C during the afternoon peak traffic hour.

III. Future Traffic Conditions Without Proposed Development

Background traffic is the traffic projected to be on area roadways without consideration of the proposed development. Background traffic includes traffic generated by development of vacant parcels in the area.

To account for projected increases in background traffic for Years 2025 and 2043, a compounded annual growth rate was determined using historical traffic data for the surrounding area provided by the City's GIS web mapping application[7] and the Colorado Department of Transportation's (CDOT) Traffic Count Database System (TCDS)[8], which anticipates 20-year growth rates between one and two percent. Therefore, in order to continue providing for a conservative analysis, a growth rate of two percent was applied to existing traffic volumes. This annual growth rate is also consistent with area development traffic studies previously submitted to the City.

Area Tourist Traffic and High Traffic Venues

An evaluation of roadway and intersection operations during peak use of Garden of the Gods Park and area tourist attractions were assessed.

Garden of the Gods Park

According to a 30th Street Corridor Development public meeting presentation[9], peak use of Garden of the Gods Park and area tourist sites typically occur in the month of June and on weekends. The weekend traffic volume on 30th Street near the park peaks around 12 noon, concurrent with Saturday peak traffic volumes used throughout this study. Conversely, weekday traffic volumes on 30th Street have a morning (7:00 a.m. to 9:00 a.m.) and afternoon (4:00 p.m. to 6:00 p.m.) peaks. The 30th Street Corridor Development presentation further defines the weekday afternoon peak traffic volumes being greater than the weekend peak volumes.

No further roadway or intersection operational analysis was included in this study since traffic volumes used in this study coincide with and account for area tourist traffic volumes associated with Garden of the Gods Park, including impacts to weekday and Saturday peak hours of operations for the study intersections and adjacent roadways.

Flying W Ranch (Chuckwagon Supper)

The Flying W Ranch is a working ranch and large area tourism and entertainment venue open year-round for special events and gatherings with a featured outdoor chuckwagon style supper occurring nightly during the summer (May through September). The Ranch is approximately one and a half miles north of the proposed development. The reported number of Chuckwagon Supper guests ranges from 800 to 1,200 per night with the Ranch opening at 3:30 p.m. for the 5:00 p.m. supper.

[7] City of Colorado Springs Traffic Counts, City of Colorado Springs GIS, 2022.
[8] Transportation Data Management System, MS2, 2021.
[9] 30th Street Corridor Development, City of Colorado Springs, Felsburg Holt & Ullegiv, June 2018.

Vehicle traffic associated with the Ranch occurs outside the afternoon and Saturday peak traffic periods. Therefore, to continue providing for a conservative analysis, vehicle trip generation for the Ranch and its chuckwagon supper were evaluated to account for projected increases in background traffic. ITE does not report trip generation rates for this type of event. Therefore, vehicle trips were estimated based on 1,200 attending guests and a quality restaurant vehicle occupancy rate of 1.9 guests per vehicle. Considering the Ranch website's posted driving directions for attendance, it was assumed that 45 percent of attending guests would travel along Garden of the Gods Road, 30th Street, and Flying W Ranch Road to the supper event. The estimated trips occurring during the weekday PM and Saturday peak hours is 285 vehicles. These trips were added to the background traffic growth projections for Years 2025 and 2043.

2424 Garden of the Gods / Garden of the Gods Business Park

2424 Garden of the Gods is a recently proposed development located at the west corner of the Garden of the Gods Road intersection with N 30th Street. While the development is currently understood to be conceptual, the development area is to be phased, with Phase One including approximately 200 multifamily residential units, and Phase Two including either 220 multifamily units or approximately 200,000 square feet of non-residential uses.

Trip generation for full development build-out of 2424 Garden of the Gods was added to background traffic projections for Years 2025 and 2043. Consistent with the 2424 Garden of the Gods Traffic Impact Study, only the allowable land uses generating the most vehicle trips from Phase Two was included. This will continue to provide for a conservative analysis.

It should be noted that projected traffic volumes used for Year 2025 and 2043 background traffic conditions includes the assumed 60 and 100 percent occupancy, respectively, for Garden of the Gods Business Park (existing office building) as regional growth projected within the area occurs, as analyzed within the 2424 Garden of the Gods Traffic Impact Study.

Standard traffic generation characteristics compiled by the Institute of Transportation Engineers (ITE) in their report entitled Trip Generation Manual, 11th Edition, were used for estimating average daily traffic (ADT), AM Peak Hour and PM Peak Hour vehicle trips for the overall existing business park office building. The overall vehicle trip rates and trip generation summary are provided for reference in Appendix A.

Any additional tourist attractions for high traffic-generating land uses not directly applied to background traffic volumes are expected to be accounted for within the conservative two percent growth rate applied to existing traffic volumes. Moreover, any additional traffic should not be further added to what is already included within this analysis in order to prevent an overly conservative analysis.

Considering the roadway classification of N 30th Street as a minor arterial roadway, an evaluation of auxiliary lane requirements, pursuant to Section 8.0, Tables 2 and 3 of the City's Engineering Criteria Manual, reveals that a northbound right turn deceleration lane at the east-west roadway may be required since the projected peak hour right turn ingress volume exceeds the City's threshold of 50 vehicles per hour. However, in order to continue providing for a conversative analysis and pursuant to the non-committed area roadway improvements discussed in Section I, Year 2025 and Year 2043 background traffic conditions assume no roadway improvements to accommodate regional transportation demands. Year 2043 assumes existing signal timing parameters for Garden of the Gods Road and N 30th Street with optimized intersection splits in effort to better long-term intersection performance.

Projected background traffic volumes and intersection geometry for Years 2025 and 2043 are shown on Figure 4 and Figure 5, respectively.

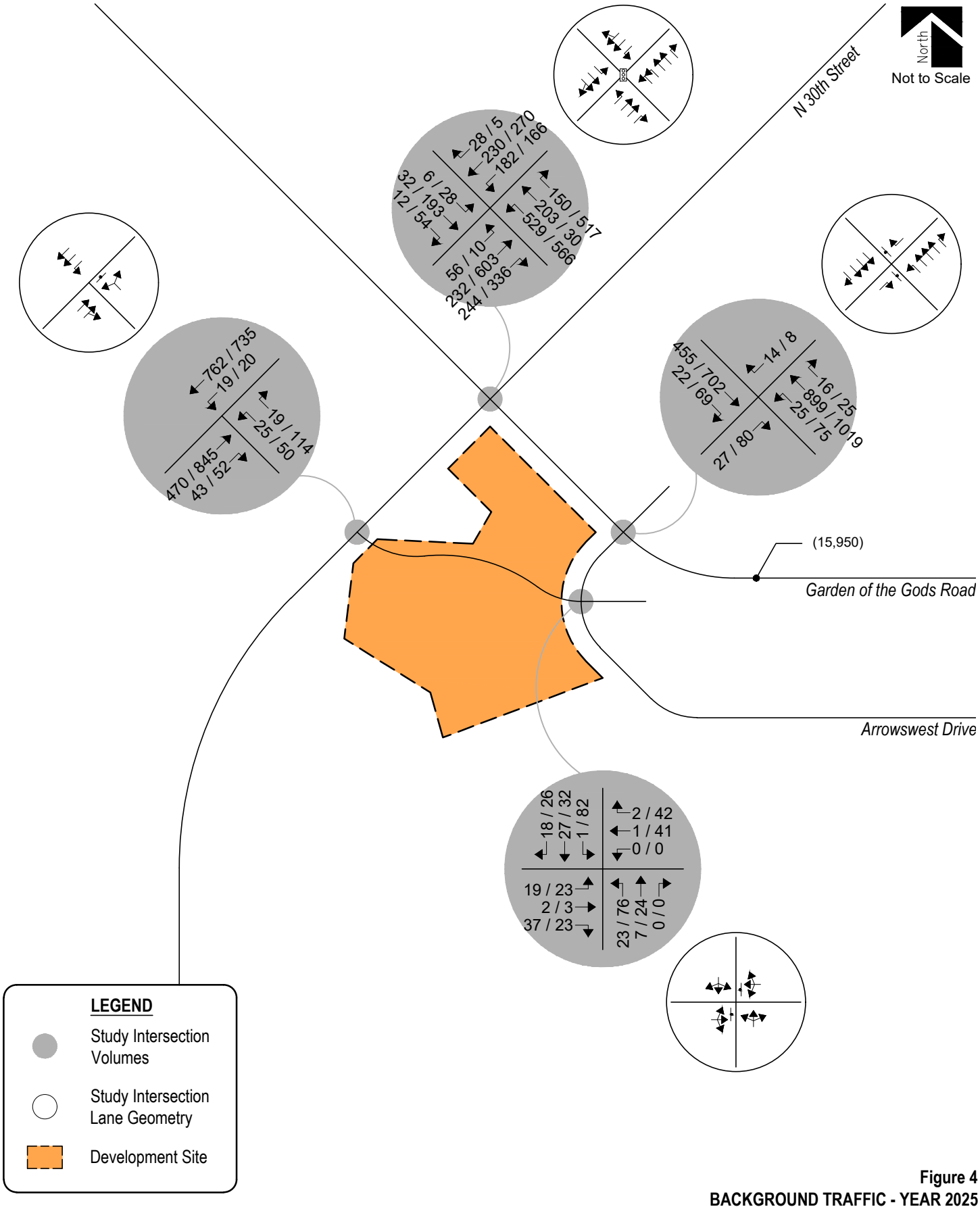


Figure 4
BACKGROUND TRAFFIC - YEAR 2025
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

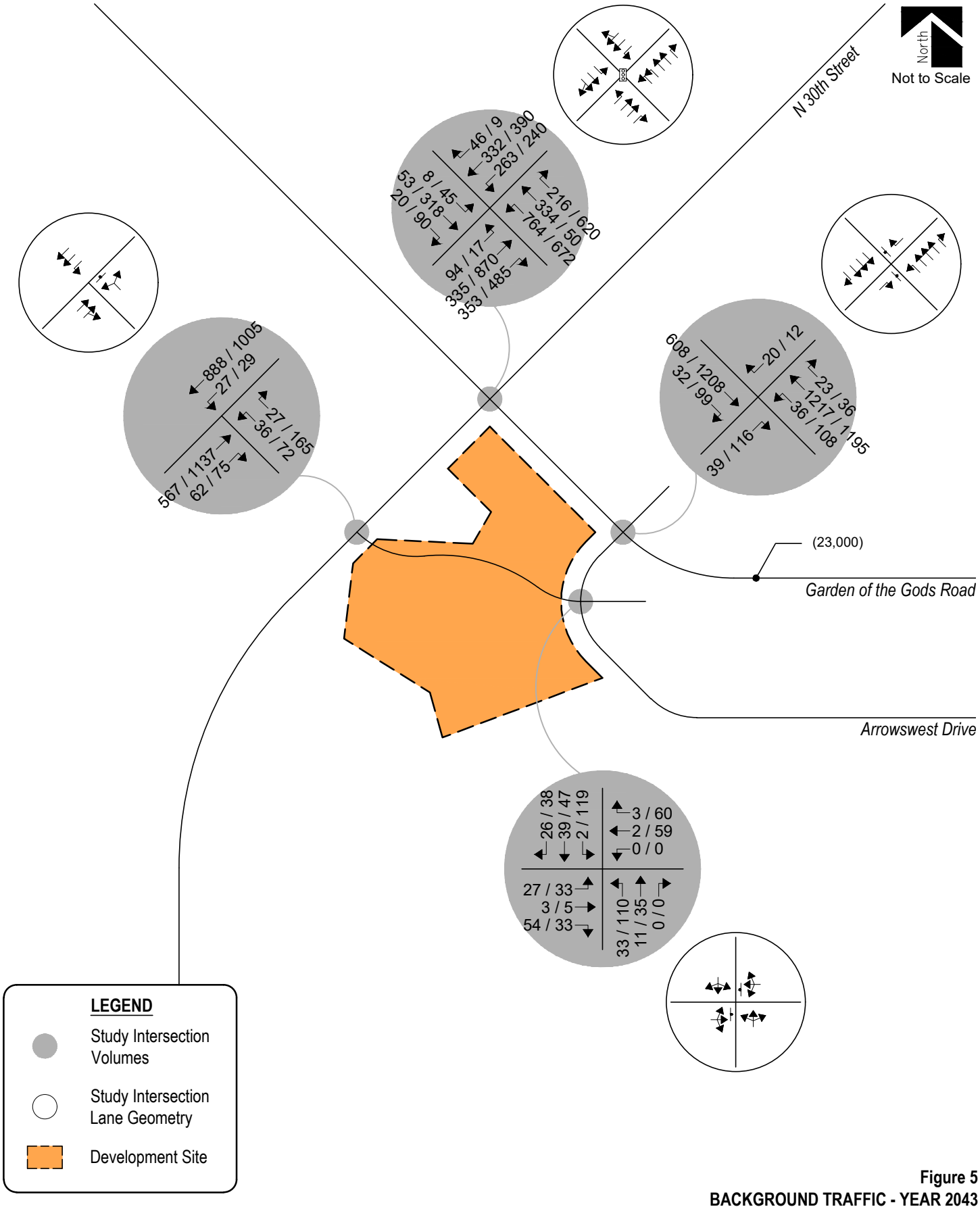


Figure 5
BACKGROUND TRAFFIC - YEAR 2043
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

As with existing traffic conditions, the operations of study intersections were analyzed under background conditions, without the proposed development, using the SYNCHRO computer program.

Background traffic level of service analysis results for Year 2025 are listed in Table 2. Year 2043 operational results are summarized in Table 3.

Definitions of levels of service are given in Appendix B. Intersection capacity worksheets are provided in Appendix C.

Table 2 – Intersection Capacity Analysis Summary – Background Traffic – Year 2025

INTERSECTION	LEVEL OF SERVICE	
LANE GROUPS	AM PEAK HOUR	PM PEAK HOUR
Garden of the Gods Road / N 30th Street (Signalized)	C (21.3)	C (29.9)
Garden of the Gods Road / Arrowswest Drive (Stop-Controlled)		
Westbound Left	B	B
Northbound Right	B	B
Southbound Right	B	B
Arrowswest Drive / East-West Roadway (Stop-Controlled)		
Eastbound Left, Through and Right	A	B
Westbound Left, Through and Right	A	B
Northbound Left, Through and Right	A	A
Southbound Left, Through and Right	A	A
N 30th Street / East-West Roadway (Stop-Controlled)		
Westbound Left and Right	B	C
Southbound Left	A	B

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)
Stop-Controlled Intersection: Level of Service

Background Traffic Analysis Results – Year 2025

Year 2025 background traffic analysis indicates that the signalized intersection of Garden of the Gods Road with N 30th Street shows overall operations at LOS C during both the morning and afternoon peak traffic hours.

The unsignalized intersection of Garden of the Gods Road with Arrowswest Drive has turn movement operations at LOS B during both the morning and afternoon peak traffic hours.

The unsignalized intersection of Arrowswest Drive with the east-west roadway has turn movement operations at LOS A during the morning peak traffic hour and LOS B or better during the afternoon peak traffic hour.

The unsignalized intersection of N 30th Street with the east-west roadway has turn movement operations at or better than LOS B during the morning peak traffic hour and LOS C or better during the afternoon peak traffic hour.

Table 3 – Intersection Capacity Analysis Summary – Background Traffic – Year 2043

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
Garden of the Gods Road / N 30th Street (Signalized)	C (27.6)	D (49.9)
Garden of the Gods Road / Arrowswest Drive (Stop-Controlled)		
Westbound Left	B	D
Northbound Right	B	C
Southbound Right	C	C
Arrowswest Drive / East-West Roadway (Stop-Controlled)		
Eastbound Left, Through and Right	A	C
Westbound Left, Through and Right	A	B
Northbound Left, Through and Right	A	A
Southbound Left, Through and Right	A	A
N 30th Street / East-West Roadway (Stop-Controlled)		
Westbound Left and Right	C	F
Southbound Left	A	B

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)
Stop-Controlled Intersection: Level of Service

Background Traffic Analysis Results – Year 2043

By Year 2043 and without the proposed development, the signalized intersection of Garden of the Gods Road with N 30th Street experiences overall operations at LOS C during the morning peak traffic hour and LOS D during the afternoon peak traffic hour.

The stop-controlled intersection of Garden of the Gods Road with Arrowswest Drive anticipates turn movement operations at LOS C or better during the morning peak traffic hour and LOS D or better during the afternoon peak traffic hour.

The stop-controlled intersection of Arrowswest Drive with the east-west roadway projects turn movement operations at LOS A during the morning peak traffic hour and LOS C or better during the afternoon peak traffic hour.

The stop-controlled intersection of N 30th Street with the east-west roadway experiences turn movement operations at or better than LOS C during the morning peak traffic hour and LOS B during the afternoon peak traffic hour. Exceptions would include the westbound turning movement which operates at LOS F during the PM peak traffic hour. The LOS F operation is attributed to the through traffic volume along N 30th Street and the stop-controlled nature of the intersection.

It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours. It is, however, likely that turn movements will operate better than the results obtained with this HCM Two Way Stop Control (TWSC) level of service analysis would indicate, as the HCM analysis may not accurately account for the effect of vehicle platooning and gaps caused by upstream signals. Upstream signal controls along N 30th Street will tend to create additional gaps in the traffic stream for turning movements at the east-west roadway and will most likely provide mitigation to the LOS F operation projected during the afternoon peak traffic hour.

IV. Proposed Project Traffic

Trip Generation

Standard traffic generation characteristics compiled by the Institute of Transportation Engineers (ITE) in their report entitled Trip Generation Manual, 11th Edition, were applied to the proposed land use in order to estimate average daily traffic (ADT), AM Peak Hour, and PM Peak Hour vehicle trips. A vehicle trip is defined as a one-way vehicle movement from a point of origin to a point of destination.

The ITE land use code 220 (Multifamily Housing (Low-Rise)) was used for estimating trip generation because of its best fit to the proposed land use description, and as allowed by the R-5 zoning district pursuant to the City's municipal code.

It is important to the note that Section 7.3.102 of the City's municipal code describes the intent and purpose of the R-5 zoning district is to allow for high-density attached multifamily housing use.

Trip generation rates used in this study are presented in Table 4.

Table 4 – Trip Generation Rates

			TRIP GENERATION RATES						
ITE			24	AM PEAK HOUR			PM PEAK HOUR		
CODE	LAND USE	UNIT	HOUR	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
220	Multifamily Housing (Low-Rise)	DU	6.74	0.10	0.30	0.40	0.32	0.19	0.51

Key: DU = Dwelling Units.
Note: All data and calculations above are subject to being rounded to nearest value.

Table 5 illustrates projected average daily traffic (ADT), AM Peak Hour, and PM Peak Hour traffic volumes likely generated by the proposed development upon build-out.

Table 5 – Trip Generation Summary

			TOTAL TRIPS GENERATED						
ITE			24	AM PEAK HOUR			PM PEAK HOUR		
CODE	LAND USE	SIZE	HOUR	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
220	Multifamily Housing (Low-Rise)	228 DU	1,537	22	69	91	73	43	116
		Total:	*1,537*	*22*	*69*	*91*	*73*	*43*	*116*

Note: All data and calculations above are subject to being rounded to nearest value.

Upon build-out, Table 5 illustrates that the proposed development has the potential to generate approximately 1,537 daily trips with 91 of those occurring during the morning peak hour and 116 during the afternoon peak hour.

Adjustments to Trip Generation Rates

A development of this type is not likely to attract trips from within area land uses nor pass-by or diverted link trips from the adjacent roadway system, therefore no trip reduction was taken in this analysis.

Trip Distribution

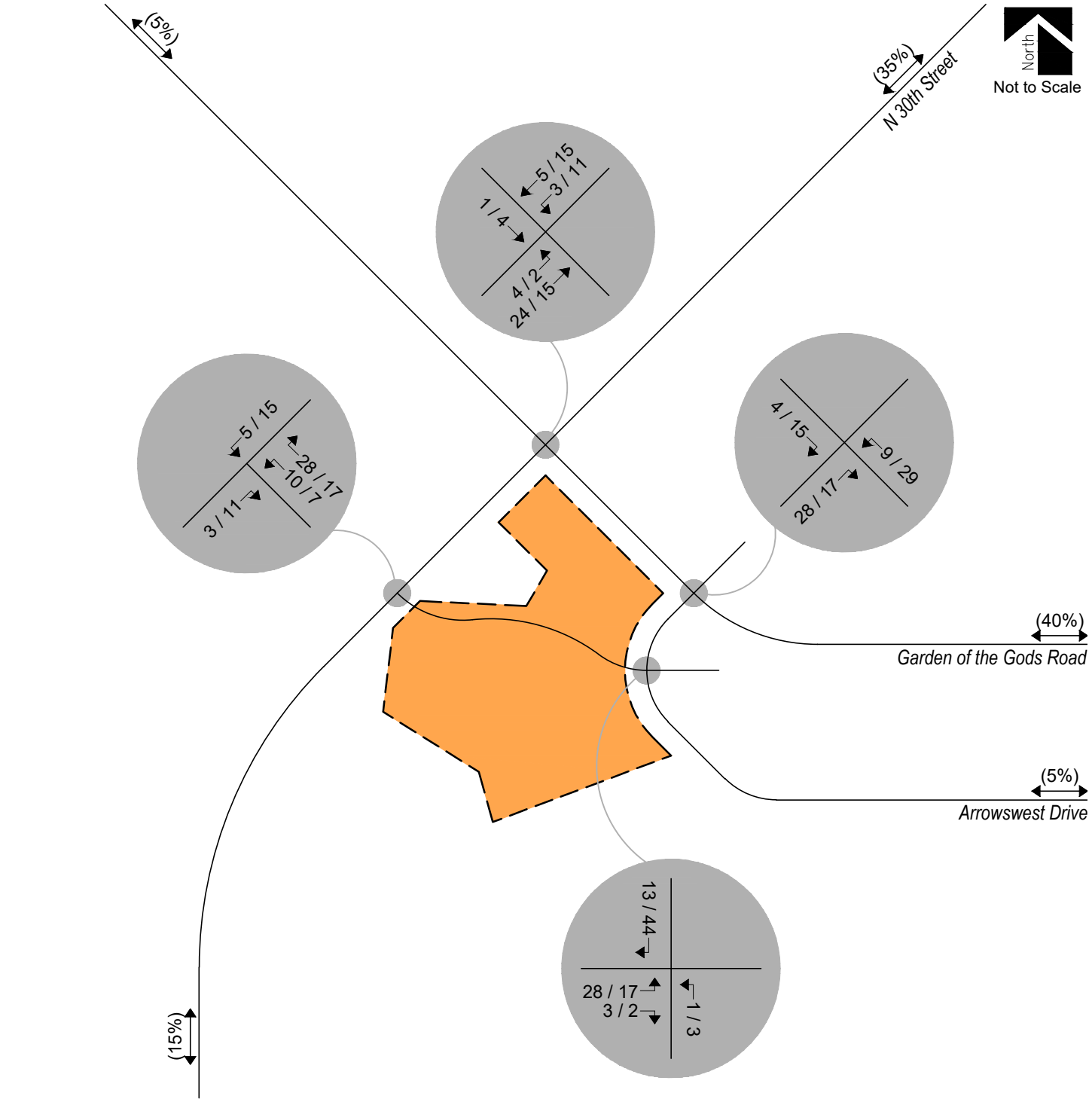
The overall directional distribution of site-generated traffic was determined based on the location of development site within the City, proposed and existing area land uses, allowed turning movements, available roadway network, and in reference to the previously approved 2424 Garden of the Gods Traffic Impact Study.

Overall trip distribution patterns for the development are shown on Figure 6.

Trip Assignment

Traffic assignment is how generated and distributed vehicle trips are expected to be loaded onto the available roadway network.

Applying trip distribution patterns to site-generated traffic provides the overall site-generated trip assignments shown on Figure 6.



LEGEND

Study Intersection Volumes

Development Site

Figure 6
SITE DEVELOPMENT DISTRIBUTION
(%) : Overall
SITE-GENERATED
AM / PM Peak Hour

V. Future Traffic Conditions With Proposed Developments

Site-generated traffic was added to background traffic projections for Years 2025 and 2043 to develop total traffic projections. For analysis purposes, it was assumed that development construction would be completed by end of Year 2025.

Pursuant to area roadway improvement discussions provided in Section III, Year 2025 and Year 2043 total traffic conditions assume no roadway improvements to accommodate regional transportation demands. Roadway improvements associated with site development are expected to be limited to site access and frontage as required by the governing agency.

Projected Year 2025 total traffic volumes and intersection geometry are shown in Figure 7.

Figure 8 shows projected total traffic volumes and intersection geometry for Year 2043.

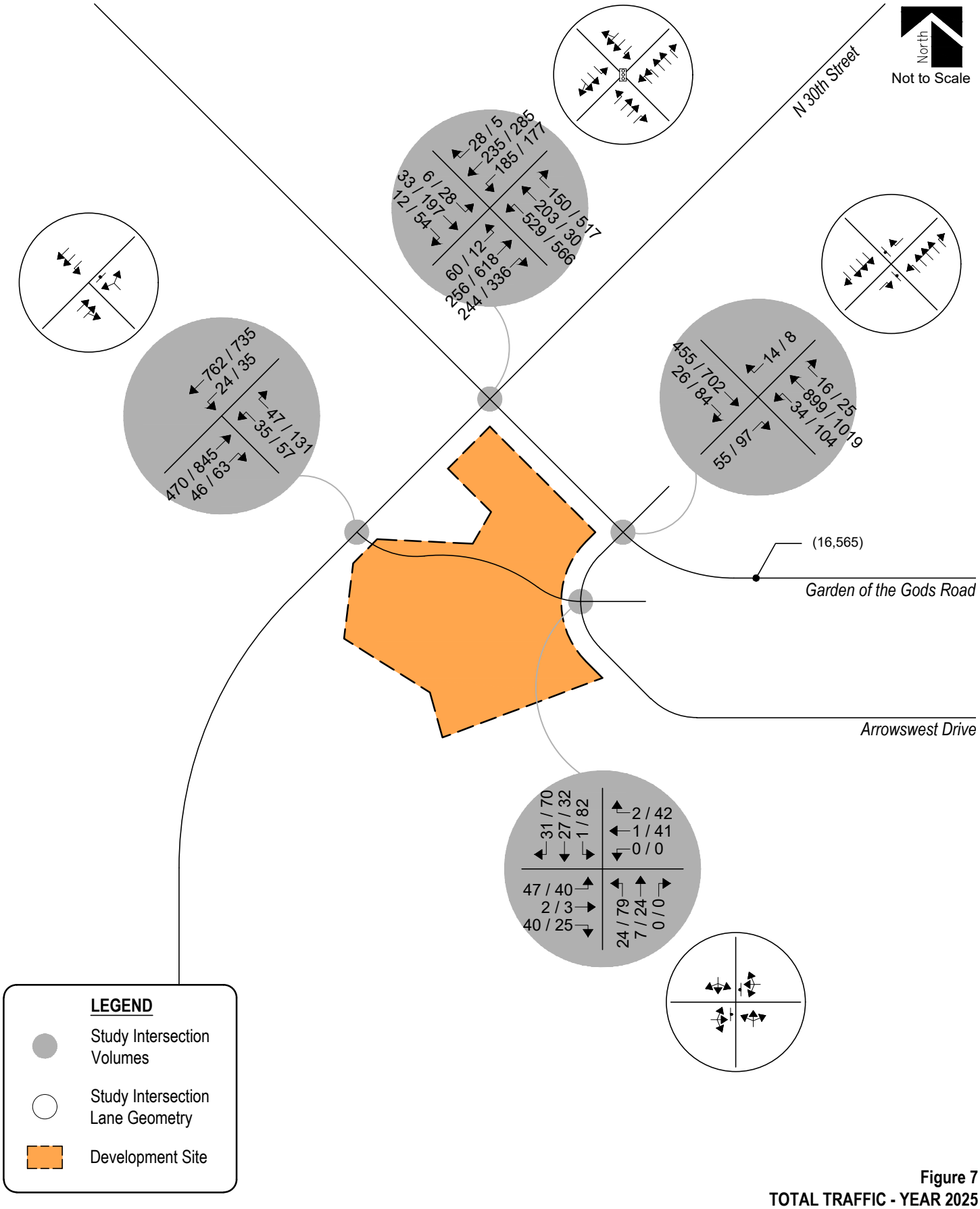


Figure 7
TOTAL TRAFFIC - YEAR 2025
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

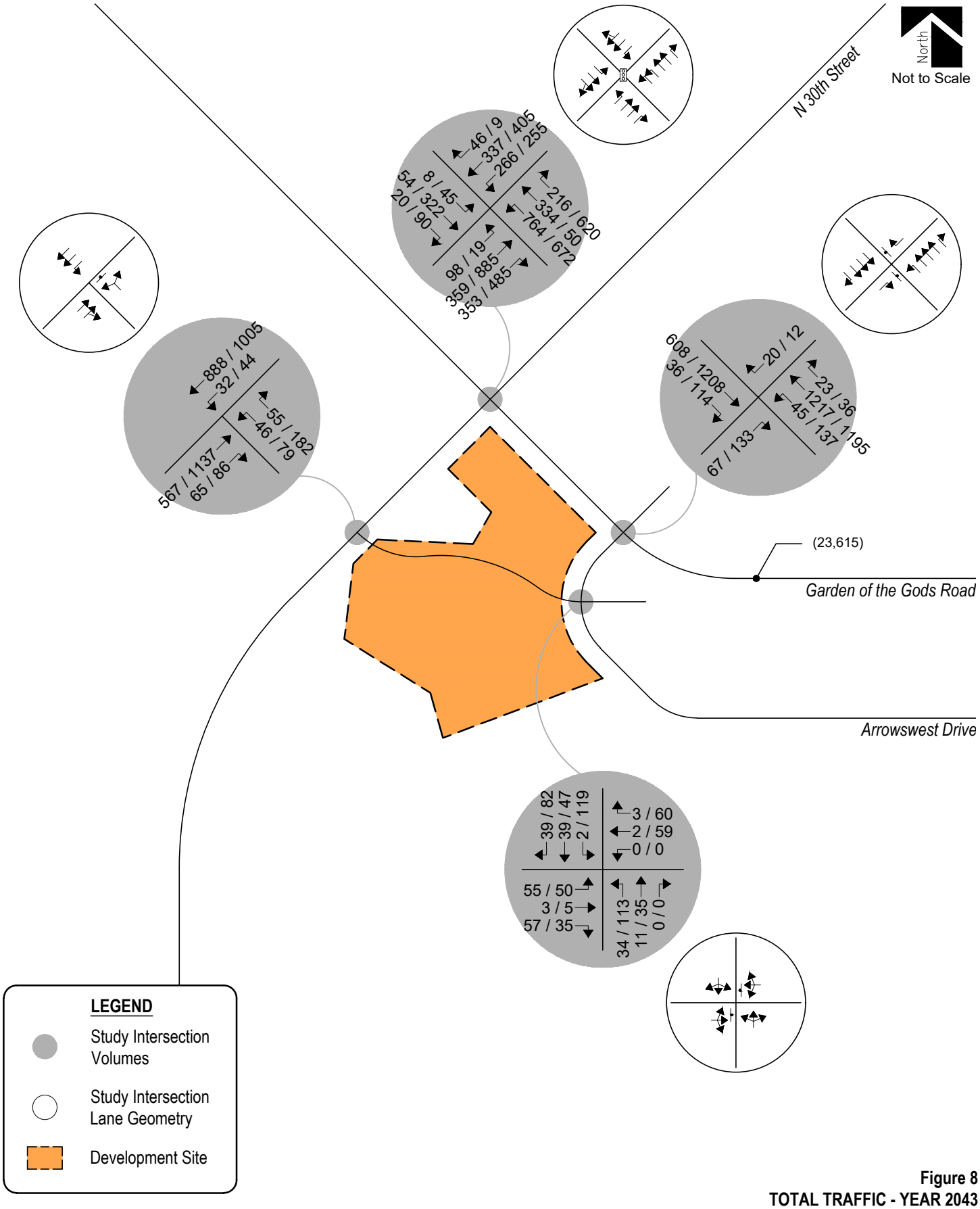


Figure 8
TOTAL TRAFFIC - YEAR 2043
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

VI. Project Impacts

The analyses and procedures described in this study were performed in accordance with the Highway Capacity Manual (HCM) and are based upon the worst-case conditions that occur during a typical weekday upon build-out of site development and analyzed land uses. Therefore, study intersections are likely to operate with traffic conditions better than those described within this study, which represent the peak hours of weekday operations only.

Peak Hour Intersection Levels of Service

As with background traffic, the operations of the study intersections were analyzed under projected total traffic conditions using the SYNCHRO computer program. Total traffic level of service analysis results for Years 2025 and 2043 are summarized in Table 6 and Table 7, respectively.

Definitions of levels of service are given in Appendix B. Intersection capacity worksheets are provided in Appendix C.

Table 6 – Intersection Capacity Analysis Summary – Total Traffic – Year 2025

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
Garden of the Gods Road / N 30th Street (Signalized)	C (21.6)	C (29.7)
Garden of the Gods Road / Arrowswest Drive (Stop-Controlled)		
Westbound Left	B	C
Northbound Right	B	B
Southbound Right	B	B
Arrowswest Drive / East-West Roadway (Stop-Controlled)		
Eastbound Left, Through and Right	A	B
Westbound Left, Through and Right	A	B
Northbound Left, Through and Right	A	A
Southbound Left, Through and Right	A	A
N 30th Street / East-West Roadway (Stop-Controlled)		
Westbound Left and Right	B	C
Southbound Left	A	B

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)
Stop-Controlled Intersection: Level of Service

Table 7 – Intersection Capacity Analysis Summary – Total Traffic – Year 2043

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
Garden of the Gods Road / N 30th Street (Signalized)	C (28.0)	D (51.2)
Garden of the Gods Road / Arrowswest Drive (Stop-Controlled)		
Westbound Left	B	E
Northbound Right	B	C
Southbound Right	C	C
Arrowswest Drive / East-West Roadway (Stop-Controlled)		
Eastbound Left, Through and Right	A	C
Westbound Left, Through and Right	A	C
Northbound Left, Through and Right	A	A
Southbound Left, Through and Right	A	A
N 30th Street / East-West Roadway (Stop-Controlled)		
Westbound Left and Right	C	F
Southbound Left	A	B

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)
Stop-Controlled Intersection: Level of Service

Total Traffic Analysis Results Upon Development Build-Out

Table 7 illustrates how, by Year 2043 and upon development build-out, the signalized intersection of Garden of the Gods Road with N 30th Street experiences overall operations at LOS C during the morning peak traffic hour and LOS D during the afternoon peak traffic hour.

The stop-controlled intersection of Garden of the Gods Road with Arrowswest Drive anticipates turn movement operations at LOS C or better during both peak traffic hours. Exceptions would include the westbound left turning movement which operates at LOS E during the PM peak traffic hour. The LOS E operation is attributed to the through traffic volume along Garden of the Gods Road and the stop-controlled nature of the intersection.

The stop-controlled intersection of Arrowswest Drive with the east-west roadway projects turn movement operations at LOS A during the morning peak traffic hour and LOS C or better during the afternoon peak traffic hour.

The stop-controlled intersection of N 30th Street with the east-west roadway experiences turn movement operations at or better than LOS C during the morning peak traffic hour and LOS B during the afternoon peak traffic hour. Exceptions would include the westbound turning movement which operates at LOS F during the PM peak traffic hour. The LOS F operation is attributed to the through traffic volume along N 30th Street and the stop-controlled nature of the intersection.

It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours. It is, however, likely that turn movements will operate better than the results obtained with this HCM Two Way Stop Control (TWSC) level of service analysis would indicate, as the HCM analysis may not accurately account for the effect of vehicle platooning and gaps caused by upstream signals. Upstream signal controls along N 30th Street and Garden of the Gods Road will tend to create additional gaps in the traffic stream for turning movements at the east-west roadway and will most likely provide mitigation to the LOS E and F operations projected during the afternoon peak traffic hour.

These intersection operations are similar to background conditions.

Auxiliary Lane Analysis

Auxiliary lane requirements for site development accesses are to be based on the City's Engineering Criteria Manual.

As mentioned in Section III, an evaluation of auxiliary lane requirements for the N 30th Street intersection with the east-west roadway reveals that a northbound right turn deceleration lane may be required, pursuant to Section 8.0, Tables 2 and 3 of the City's Engineering Criteria Manual. It is emphasized that this requirement is met during background conditions without the proposed development, since projected peak hour right turn ingress volumes already exceed the City's threshold of 50 vehicles per hour.

Queue Length Analysis

Queue lengths for the study intersections were analyzed using Year 2043 total traffic conditions. The analysis yields estimate of 95th percentile queue lengths, which have only a five percent probability of being exceeded during the analysis time period. Queue lengths were modeled and are included with the Synchro worksheets in Appendix C.

At the N 30th Street and Garden of the Gods Road intersection, the westbound left and right turn movements as well as the southbound left turn movements are anticipated to exceed existing storage length capacities during the afternoon peak traffic hour. However, these queue lengths occur off-site and are unrelated to the proposed development.

The greatest queue length at the Garden of the Gods Road and Arrowswest Drive intersection occurs during the afternoon peak hour. The queue length is approximately four vehicles for the westbound left turn movement and approximately two vehicles for the northbound right turn movements.

On Arrowswest Drive at the east-west roadway intersection, no significant queue was indicated. The greatest queue length is approximately one to two vehicles in any direction during either peak hour.

At the N 30th Street intersection with the east-west roadway, the greatest queue length anticipated occurs for the westbound left and right turning movements during the afternoon peak traffic hour and is approximately eleven vehicles. This is conservatively assuming one shared left and right westbound turn lane as analyzed throughout this study. However, although exclusive turn lane striping is not present, existing right-of-way width of the east-west roadway at N 30th Street indicates there is adequate space to allow motorists to assume exclusive turn lane behaviors, thereby reducing the anticipated on-site queue length.

VII. Conclusion

This traffic impact study addressed the capacity, geometric, and control requirements associated with the development entitled 4015 Arrowswest Drive. This proposed residential development consists of a multifamily housing community. The development is located on the south corner of Garden of the Gods Road and N 30th Street in Colorado Springs, Colorado.

The study area examined in this analysis encompassed the Garden of the Gods Road intersections with N 30th Street and Arrowswest Drive, and the east-west roadway intersections with N 30th Street and Arrowswest Drive.

Analysis was conducted for critical AM Peak Hour and PM Peak Hour traffic operations for existing traffic conditions, Year 2025 and Year 2043 background traffic conditions, and Year 2025 and Year 2043 total traffic conditions.

Analysis of existing traffic conditions indicates that the signalized intersection of Garden of the Gods Road with N 30th Street has overall operations at LOS B during the morning peak traffic hour and LOS C during the afternoon peak traffic hour. All stop-controlled intersections within the study area have turn movement operations at or better than LOS B during the morning peak traffic hour and LOS C during the afternoon peak traffic hour.

Without the proposed development, Year 2025 background operational analysis shows that the signalized intersection of Garden of the Gods Road with N 30th Street shows overall operations at LOS C during both the morning and afternoon peak traffic hours. The unsignalized intersection of Garden of the Gods Road with Arrowswest Drive has turn movement operations at LOS B during both the morning and afternoon peak traffic hours. The unsignalized intersection of Arrowswest Drive with the east-west roadway has turn movement operations at LOS A during the morning peak traffic hour and LOS B or better during the afternoon peak traffic hour. The unsignalized intersection of N 30th Street with the east-west roadway has turn movement operations at or better than LOS B during the morning peak traffic hour and LOS C or better during the afternoon peak traffic hour.

By Year 2043 and without the proposed development, the signalized intersection of Garden of the Gods Road with N 30th Street experiences overall operations at LOS C during the morning peak traffic hour and LOS D during the afternoon peak traffic hour. The stop-controlled intersection of Garden of the Gods Road with Arrowswest Drive anticipates turn movement operations at LOS C or better during the morning peak traffic hour and LOS D or better during the afternoon peak traffic hour. The stop-controlled intersection of Arrowswest Drive with the east-west roadway projects turn movement operations at LOS A during the morning peak traffic hour and LOS C or better during the afternoon peak traffic hour. The stop-controlled intersection of N 30th Street with the east-west roadway experiences turn movement operations at or better than LOS C during the morning peak traffic hour and LOS B during the afternoon peak traffic hour. Exceptions would include the westbound turning movement which operates at LOS F during the PM peak traffic hour. The LOS F operation is attributed to the through traffic volume along N 30th Street and the stop-controlled nature of the intersection.

It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours. It is, however, likely that turn movements will operate better than the results obtained with this HCM Two Way Stop Control (TWSC) level of service analysis would indicate, as the HCM analysis may not accurately account for the effect of vehicle platooning and gaps caused by upstream signals. Upstream signal controls along N 30th Street will tend to create additional gaps in the traffic stream for turning movements at the east-west roadway and will most likely provide mitigation to the LOS F operation projected during the afternoon peak traffic hour.

Analysis of future traffic conditions indicates that the addition of site-generated traffic is expected to create no negative impact to traffic operations for the existing and surrounding roadway system upon roadway and intersection control improvements assumed within this analysis. With all conservative assumptions defined in this analysis, the study intersections are projected to operate at future levels of service comparable to Year 2043 background traffic conditions.

All projected queue lengths indicate that existing turn lane lengths at the study intersections can accommodate anticipated vehicle queuing caused by the assumed site development.

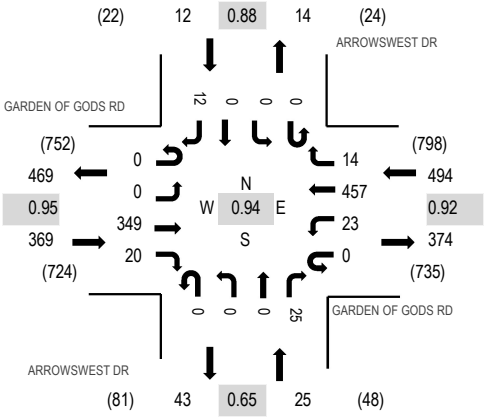
APPENDIX A

Traffic Count Data
Signal Timing Information
Garden of the Gods Business Park Trip Generation

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

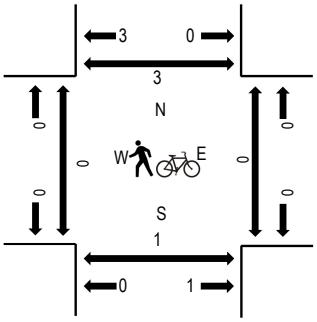
Location: 1 ARROWSWEST DR & GARDEN OF GODS RD AM
Date: Tuesday, July 27, 2021
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



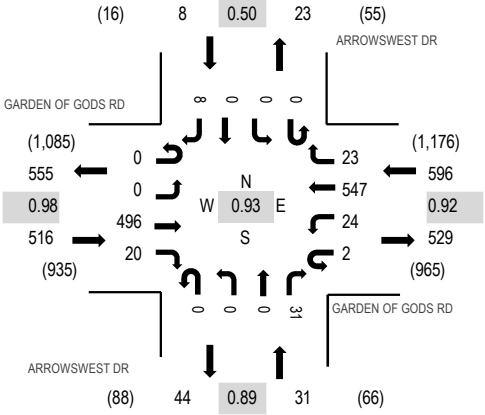
Traffic Counts

Interval Start Time	GARDEN OF GODS RD Eastbound				GARDEN OF GODS RD Westbound				ARROWSWEST DR Northbound				ARROWSWEST DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	61	1	0	7	54	2	0	0	0	7	0	0	0	3	135	692	0	0	0	1
7:15 AM	0	0	93	4	0	5	55	2	0	0	0	4	0	0	0	0	163	775	0	0	0	0
7:30 AM	0	0	96	7	0	6	72	4	0	0	0	6	0	0	0	4	195	851	2	0	0	1
7:45 AM	0	0	87	6	1	2	92	2	0	0	0	6	0	0	0	3	199	888	0	2	0	1
8:00 AM	0	0	91	4	0	12	93	4	0	0	0	10	0	0	0	4	218	900	0	0	0	0
8:15 AM	0	0	93	7	0	5	126	3	0	0	0	2	0	0	0	3	239		0	0	0	1
8:30 AM	0	0	87	4	0	6	124	4	0	0	0	4	0	0	0	3	232		0	0	0	1
8:45 AM	0	0	78	5	0	0	114	3	0	0	0	9	0	0	0	2	211		0	0	0	0
Count Total	0	0	686	38	1	43	730	24	0	0	0	48	0	0	0	22	1,592		2	2	0	5
Peak Hour	0	0	349	20	0	23	457	14	0	0	0	25	0	0	0	12	900		0	0	0	2

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

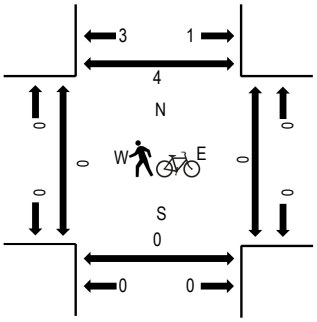
Location: 1 ARROWSWEST DR & GARDEN OF GODS RD PM
Date: Tuesday, July 27, 2021
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



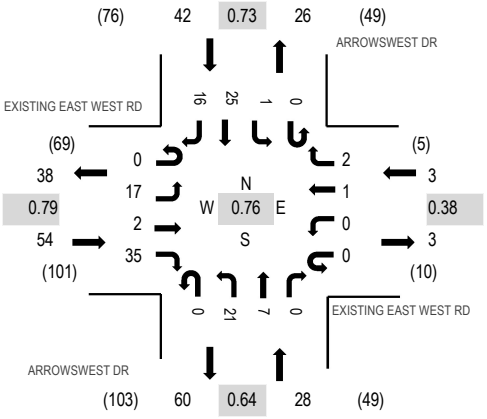
Traffic Counts

Interval Start Time	GARDEN OF GODS RD Eastbound				GARDEN OF GODS RD Westbound				ARROWSWEST DR Northbound				ARROWSWEST DR Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	127	4	0	7	139	5	0	0	0	8	0	0	0	4	294	1,151	0	0	0	0
4:15 PM	0	0	120	6	0	6	128	6	0	0	0	5	0	0	0	0	271	1,150	0	0	0	1
4:30 PM	0	0	123	7	1	6	158	1	0	0	0	11	0	0	0	2	309	1,138	0	0	0	1
4:45 PM	0	0	126	3	1	5	122	11	0	0	0	7	0	0	0	2	277	1,089	0	0	0	0
5:00 PM	0	0	114	7	1	6	143	11	0	0	0	11	0	0	0	0	293	1,042	0	0	0	0
5:15 PM	0	0	95	5	0	4	138	4	0	0	0	10	0	0	0	3	259		0	0	0	0
5:30 PM	0	0	105	4	0	5	131	7	0	0	0	6	0	0	0	2	260		0	0	0	1
5:45 PM	0	0	86	3	0	10	110	10	0	0	0	8	0	0	0	3	230		0	0	0	3
Count Total	0	0	896	39	3	49	1,069	55	0	0	0	66	0	0	0	16	2,193		0	0	0	6
Peak Hour	0	0	496	20	2	24	547	23	0	0	0	31	0	0	0	8	1,151		0	0	0	2

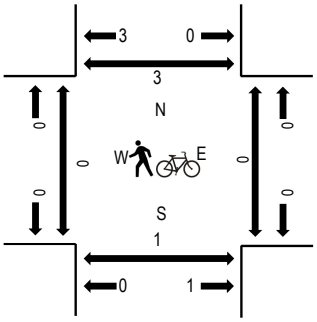
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 2 ARROWSWEST DR & EXISTING EAST WEST RD AM
Date: Tuesday, July 27, 2021
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

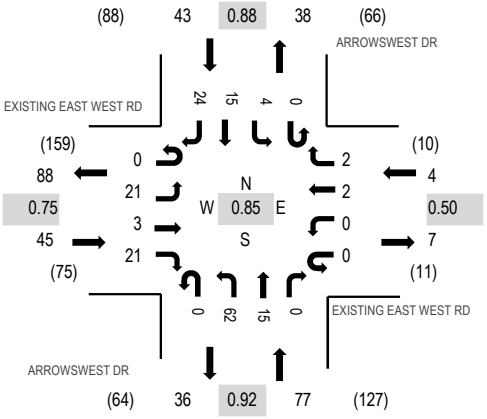
Traffic Counts

Interval Start Time	EXISTING EAST WEST RD Eastbound				EXISTING EAST WEST RD Westbound				ARROWSWEST DR Northbound				ARROWSWEST DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	7	0	4	0	0	0	0	0	3	0	0	0	1	2	5	22	104	0	2	0	0
7:15 AM	0	2	1	6	0	0	0	0	0	3	2	0	0	0	7	3	24	124	0	0	0	0
7:30 AM	0	2	2	8	0	0	0	2	0	10	1	0	0	1	4	4	34	125	0	0	0	1
7:45 AM	0	6	2	7	0	0	0	0	0	1	1	0	0	0	5	2	24	117	0	0	0	0
8:00 AM	0	7	2	7	0	0	0	1	0	7	3	0	0	0	7	8	42	127	0	0	0	0
8:15 AM	0	2	0	8	0	0	0	0	0	3	0	0	0	1	7	4	25		0	0	1	1
8:30 AM	0	2	0	9	0	0	0	0	0	3	2	0	0	0	6	4	26		0	0	0	1
8:45 AM	0	6	0	11	0	0	1	1	0	8	2	0	0	0	5	0	34		0	0	0	0
Count Total	0	34	7	60	0	0	1	4	0	38	11	0	0	3	43	30	231		0	2	1	3
Peak Hour	0	17	2	35	0	0	1	2	0	21	7	0	0	1	25	16	127		0	0	1	2

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

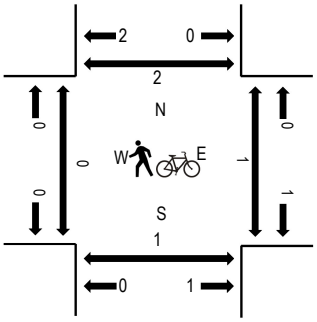
Location: 2 ARROWSWEST DR & EXISTING EAST WEST RD PM
Date: Tuesday, July 27, 2021
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



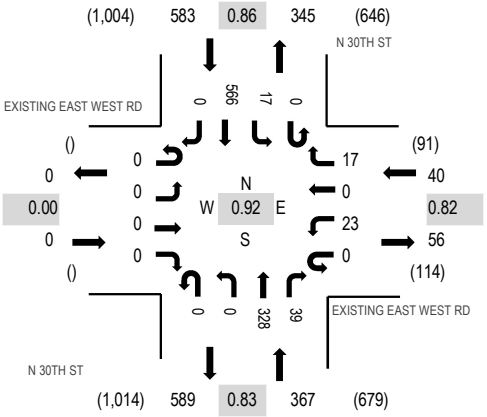
Traffic Counts

Interval Start Time	EXISTING EAST WEST RD Eastbound				EXISTING EAST WEST RD Westbound				ARROWSWEST DR Northbound				ARROWSWEST DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	3	0	1	0	0	0	2	0	10	3	1	0	1	3	7	31	145	0	0	0	0
4:15 PM	0	2	1	7	0	0	0	0	0	10	3	0	0	0	4	8	35	164	0	0	0	0
4:30 PM	0	4	0	3	0	0	0	0	0	14	7	0	0	0	5	8	41	169	0	0	0	2
4:45 PM	0	3	2	5	0	0	0	0	0	17	3	0	0	2	3	3	38	159	0	0	0	0
5:00 PM	0	7	0	8	0	0	2	0	0	16	4	0	0	1	3	9	50	155	0	0	0	0
5:15 PM	0	7	1	5	0	0	0	2	0	15	1	0	0	1	4	4	40		0	0	1	0
5:30 PM	0	2	0	4	0	0	2	2	0	11	2	0	0	0	3	5	31		0	0	0	0
5:45 PM	0	6	0	4	0	0	0	0	0	7	3	0	0	1	2	11	34		0	0	0	0
Count Total	0	34	4	37	0	0	4	6	0	100	26	1	0	6	27	55	300		0	0	1	2
Peak Hour	0	21	3	21	0	0	2	2	0	62	15	0	0	4	15	24	169		0	0	1	2

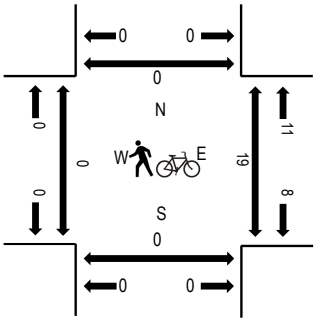
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 3 N 30TH ST & EXISTING EAST WEST RD AM
Date: Tuesday, July 27, 2021
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

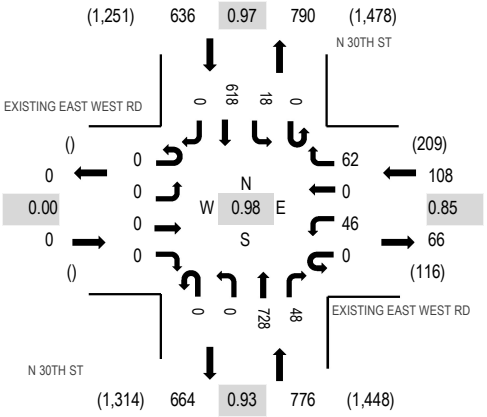
Traffic Counts

Interval Start Time	EXISTING EAST WEST RD Eastbound				EXISTING EAST WEST RD Westbound				N 30TH ST Northbound				N 30TH ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	7	0	1	0	0	46	7	0	4	59	0	124	792	0	4	0	0
7:15 AM	0	0	0	0	0	5	0	4	0	0	81	10	0	5	91	0	196	892	0	2	0	0
7:30 AM	0	0	0	0	0	14	0	5	0	0	78	7	0	7	97	0	208	928	0	3	0	0
7:45 AM	0	0	0	0	0	3	0	3	0	0	106	10	0	4	138	0	264	990	0	4	0	0
8:00 AM	0	0	0	0	0	8	0	4	0	0	89	6	0	2	115	0	224	982	0	2	0	0
8:15 AM	0	0	0	0	0	6	0	4	0	0	59	14	0	3	146	0	232		0	2	0	0
8:30 AM	0	0	0	0	0	6	0	6	0	0	74	9	0	8	167	0	270		0	2	0	0
8:45 AM	0	0	0	0	0	6	0	9	0	0	76	7	1	11	146	0	256		0	3	0	0
Count Total	0	0	0	0	0	55	0	36	0	0	609	70	1	44	959	0	1,774		0	22	0	0
Peak Hour	0	0	0	0	0	23	0	17	0	0	328	39	0	17	566	0	990		0	10	0	0

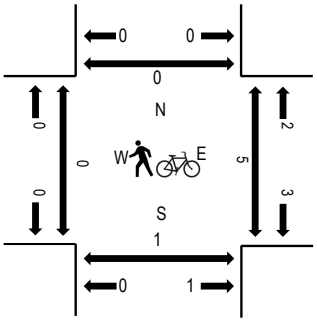
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 3 N 30TH ST & EXISTING EAST WEST RD PM
Date: Tuesday, July 27, 2021
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	EXISTING EAST WEST RD Eastbound				EXISTING EAST WEST RD Westbound				N 30TH ST Northbound				N 30TH ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	16	0	10	0	0	171	8	0	5	164	0	374	1,449	0	0	0	0
4:15 PM	0	0	0	0	0	4	0	15	0	0	154	11	0	1	149	0	334	1,445	0	0	0	0
4:30 PM	0	0	0	0	0	16	0	12	0	0	171	7	0	6	151	0	363	1,494	0	0	0	0
4:45 PM	0	0	0	0	0	11	0	16	0	0	172	15	0	6	158	0	378	1,520	0	1	0	0
5:00 PM	0	0	0	0	0	10	0	13	0	0	177	12	0	2	156	0	370	1,459	0	0	0	0
5:15 PM	0	0	0	0	0	11	0	15	0	0	182	9	0	4	162	0	383		0	1	0	0
5:30 PM	0	0	0	0	0	14	0	18	0	0	197	12	0	6	142	0	389		0	1	0	0
5:45 PM	0	0	0	0	0	15	0	13	0	0	142	8	0	4	135	0	317		0	1	0	0
Count Total	0	0	0	0	0	97	0	112	0	0	1,366	82	0	34	1,217	0	2,908		0	4	0	0
Peak Hour	0	0	0	0	0	46	0	62	0	0	728	48	0	18	618	0	1,520		0	3	0	0

All Traffic Data Services

www.alltrafficdata.net

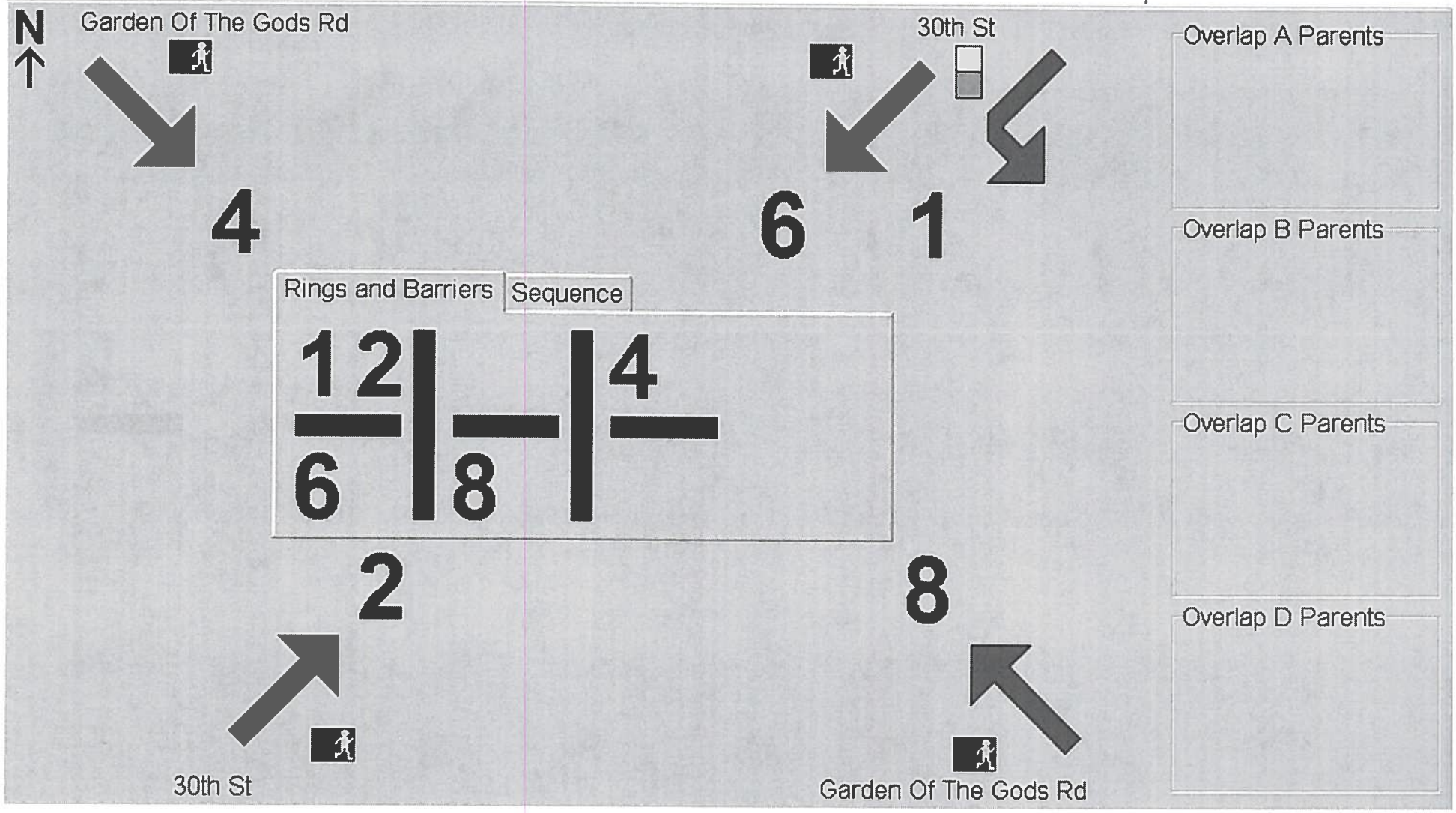
Date Start: 27-Jul-21
Site Code: 4
Station ID:
GARDEN OF THE GODS RD E.O. ARROWSWEST DR

Start Time	27-Jul-21 Tue	EB	WB							Total
12:00 AM		11	23							34
01:00		7	17							24
02:00		7	12							19
03:00		5	7							12
04:00		20	18							38
05:00		81	70							151
06:00		187	154							341
07:00		361	306							667
08:00		376	488							864
09:00		364	502							866
10:00		323	608							931
11:00		**420**	**616**							**1036**
12:00 PM		470	**673**							**1143**
01:00		437	538							975
02:00		439	503							942
03:00		480	523							1003
04:00		**517**	588							1105
05:00		450	586							1036
06:00		305	434							739
07:00		300	365							665
08:00		266	241							507
09:00		112	172							284
10:00		78	63							141
11:00		25	37							62
Total		6041	7544							13585
Percent		44.5%	55.5%							
AM Peak	-	11:00	11:00	-	-	-	-	-	-	11:00
Vol.	-	420	616	-	-	-	-	-	-	1036
PM Peak	-	16:00	12:00	-	-	-	-	-	-	12:00
Vol.	-	517	673	-	-	-	-	-	-	1143
Grand Total		6041	7544							13585
Percent		44.5%	55.5%							

ADT	ADT 13,585	AADT 13,585

Intersection 226 at 30th St and Garden Of The Gods Rd - Phases and overlaps

2/27/2018 2:01:06 PM



Intersection 226 at 30th St and Garden Of The Gods Rd - Plans schedule

2/27/2018 2:01:16 PM

(•) Plan Changes ( ) Page Changes Week of 2/26/2018

	Mon 02/26	Tue 02/27	Wed 02/28	Thu 03/01	Fri 03/02
12:00am	Free	Free	Free	Free	Free
Cycle len,offset					

	Sat 03/03	Sun 03/04
12:00am	Free	Free
Cycle len,offset		

Intersection 226 at 30th St and Garden Of The Gods Rd - Timing table

Page 1	Phases											
	1	2	3	4	5	6	7	8	9	10	11	12
Min Green	4	10	0	10	0	10	0	10	0	0	0	0
Passage Time I	3.0	5.0	0.0	3.0	0.0	5.0	0.0	3.0	0.0	0.0	0.0	0.0
Passage Time II	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Green I	15	32	0	30	0	32	0	30	0	0	0	0
Max Green II	0	0	0	0	0	0	0	0	0	0	0	0
Yellow Clearance	3.0	4.0	0.0	4.5	0.0	4.0	0.0	4.5	0.0	0.0	0.0	0.0
Red Clearance	2.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0
Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Added Initial	0	0	0	0	0	0	0	0	0	0	0	0
Time Before Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Cars Before Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0
Min Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Green Time	0	0	0	0	0	0	0	0	0	0	0	0
Red Revert Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk Time	0	7	0	7	0	7	0	7	0	0	0	0
Pedestrian Clearance	0	27	0	18	0	27	0	18	0	0	0	0
Handicap Walk	0	0	0	0	0	0	0	0	0	0	0	0
Handicap Ped Clearance	0	0	0	0	0	0	0	0	0	0	0	0
30th St	X	X				X						
Garden Of The Gods Rd				X				X				
Compass Direction	SW	NE		SE		SW		NW				
Through, Turn or XPed	Left,p/p	Thru		Thru		Thru		Thru				

ITE CODE	LAND USE	UNIT	TRIP GENERATION RATES						
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
750	Office Park	KSF	11.07	1.28	0.16	1.44	0.07	1.00	1.07

Key: KSF = Thousand Square Feet Gross Floor Area.
Note: All data and calculations above are subject to being rounded to nearest value.

ITE CODE	LAND USE	SIZE	TOTAL TRIPS GENERATED						
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
Existing Office Building									
750	Office Park	750.0 KSF	8,303	961	119	1,080	56	746	803
		Total:	*8,303*	*961*	*119*	*1,080*	*56*	*746*	*803*

Note: All data and calculations above are subject to being rounded to nearest value.

APPENDIX B

Level of Service Definitions

The following information can be found in the Highway Capacity Manual, Transportation Research Board, 2016: Chapter 19 – Signalized Intersections and Chapter 20 – Two-Way Stop Controlled Intersections.

Automobile Level of Service (LOS) for Signalized Intersections

Levels of service are defined to represent reasonable ranges in control delay.

LOS A

Describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B

Describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOS C

Describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D

Describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E

Describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F

Describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Level of Service (LOS) for Unsignalized TWSC Intersections

Level of Service (v/c ≤ 1.0)	Average Control Delay (s/veh)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

APPENDIX C

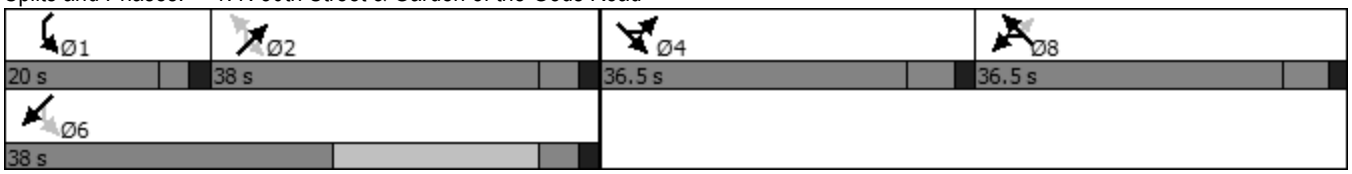
Capacity Worksheets

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	2	9	6	509	15	144	3	233	235	175	221	1
Future Volume (vph)	2	9	6	509	15	144	3	233	235	175	221	1
Satd. Flow (prot)	1770	3320	0	3433	3539	1583	1770	3539	1583	1770	3536	0
Flt Permitted	0.950			0.950			0.602			0.424		
Satd. Flow (perm)	1770	3320	0	3433	3539	1583	1121	3539	1583	790	3536	0
Satd. Flow (RTOR)		7				157			255			
Lane Group Flow (vph)	2	17	0	553	16	157	3	253	255	190	241	0
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8			2		1	6	
Permitted Phases						8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	16.5	16.5		16.5	16.5	16.5	16.0	16.0	16.0	15.0	16.0	
Total Split (s)	36.5	36.5		36.5	36.5	36.5	38.0	38.0	38.0	20.0	38.0	
Total Split (%)	27.9%	27.9%		27.9%	27.9%	27.9%	29.0%	29.0%	29.0%	15.3%	29.0%	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.0	6.0	6.0	5.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	None	None		None	None	None	Min	Min	Min	None	Min	
Act Effct Green (s)	10.7	10.7		17.0	17.0	17.0	12.0	12.0	12.0	30.5	29.4	
Actuated g/C Ratio	0.17	0.17		0.26	0.26	0.26	0.19	0.19	0.19	0.47	0.45	
v/c Ratio	0.01	0.03		0.61	0.02	0.30	0.01	0.39	0.51	0.34	0.15	
Control Delay	33.0	25.5		25.6	21.5	6.2	29.3	28.4	8.7	15.4	13.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	33.0	25.5		25.6	21.5	6.2	29.3	28.4	8.7	15.4	13.4	
LOS	C	C		C	C	A	C	C	A	B	B	
Approach Delay		26.3			21.4			18.5			14.3	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	1	1		74	2	0	1	36	0	31	21	
Queue Length 95th (ft)	8	13		190	11	44	9	105	64	120	71	
Internal Link Dist (ft)		403			458			471			1006	
Turn Bay Length (ft)	150			335		210	170		125	115		
Base Capacity (vph)	877	1650		1702	1755	864	593	1872	957	614	2960	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.00	0.01		0.32	0.01	0.18	0.01	0.14	0.27	0.31	0.08	

Intersection Summary
Cycle Length: 131
Actuated Cycle Length: 64.8
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.61

Intersection Signal Delay: 18.8 Intersection LOS: B
Intersection Capacity Utilization 53.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: N 30th Street & Garden of the Gods Road



Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NEL	NER
Lane Configurations		↑↑↑	↱	↰	↑↑↑	↱				↱
Traffic Vol, veh/h	0	407	21	24	669	15	0	0	0	26
Future Vol, veh/h	0	407	21	24	669	15	0	0	0	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	75	440	-	415	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	0	-	0	-
Grade, %	-	0	-	-	0	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	442	23	26	727	16	0	0	0	28

Major/Minor	Major1			Major2			Minor2		Minor1	
Conflicting Flow All	-	0	0	465	0	0	-	364	-	221
Stage 1	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	5.34	-	-	-	7.14	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.12	-	-	-	3.92	-	3.92
Pot Cap-1 Maneuver	0	-	-	703	-	-	0	540	0	667
Stage 1	0	-	-	-	-	-	0	-	0	-
Stage 2	0	-	-	-	-	-	0	-	0	-
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	-	-	-	703	-	-	-	540	-	667
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	SB	NE
HCM Control Delay, s	0	0.3	11.8	10.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	667	-	-	703	-	-	540
HCM Lane V/C Ratio	0.042	-	-	0.037	-	-	0.026
HCM Control Delay (s)	10.6	-	-	10.3	-	-	11.8
HCM Lane LOS	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	2	36	0	1	2	22	7	0	1	26	17
Future Vol, veh/h	18	2	36	0	1	2	22	7	0	1	26	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	2	39	0	1	2	24	8	0	1	28	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	97	95	37	116	104	8	46	0	0	8	0	0
Stage 1	39	39	-	56	56	-	-	-	-	-	-	-
Stage 2	58	56	-	60	48	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	885	795	1035	861	786	1074	1562	-	-	1612	-	-
Stage 1	976	862	-	956	848	-	-	-	-	-	-	-
Stage 2	954	848	-	951	855	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	872	782	1035	816	773	1074	1562	-	-	1612	-	-
Mov Cap-2 Maneuver	872	782	-	816	773	-	-	-	-	-	-	-
Stage 1	961	861	-	942	835	-	-	-	-	-	-	-
Stage 2	937	835	-	912	854	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	8.8	5.6	0.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1562	-	-	966	951	1612	-	-
HCM Lane V/C Ratio	0.015	-	-	0.063	0.003	0.001	-	-
HCM Control Delay (s)	7.3	0	-	9	8.8	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	24	18	452	41	18	733
Future Vol, veh/h	24	18	452	41	18	733
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	20	491	45	20	797

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	953	268	0	0	536	0
Stage 1	514	-	-	-	-	-
Stage 2	439	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	257	730	-	-	1028	-
Stage 1	565	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	252	730	-	-	1028	-
Mov Cap-2 Maneuver	381	-	-	-	-	-
Stage 1	565	-	-	-	-	-
Stage 2	605	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	13.3	0	0.2
HCM LOS	B		

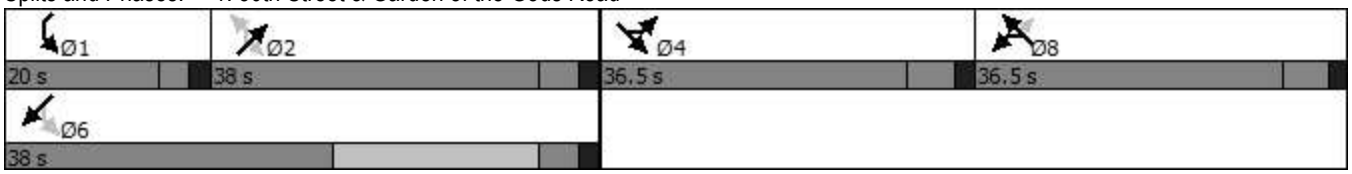
Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	479	1028	-
HCM Lane V/C Ratio	-	-	0.095	0.019	-
HCM Control Delay (s)	-	-	13.3	8.6	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	2	16	4	448	1	224	2	580	323	160	260	1
Future Volume (vph)	2	16	4	448	1	224	2	580	323	160	260	1
Satd. Flow (prot)	1770	3437	0	3433	3539	1583	1770	3539	1583	1770	3536	0
Flt Permitted	0.950			0.950			0.578			0.231		
Satd. Flow (perm)	1770	3437	0	3433	3539	1583	1077	3539	1583	430	3536	0
Satd. Flow (RTOR)		4				243			231			
Lane Group Flow (vph)	2	21	0	487	1	243	2	630	351	174	284	0
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8			2		1	6	
Permitted Phases						8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	16.5	16.5		16.5	16.5	16.5	16.0	16.0	16.0	15.0	16.0	
Total Split (s)	36.5	36.5		36.5	36.5	36.5	38.0	38.0	38.0	20.0	38.0	
Total Split (%)	27.9%	27.9%		27.9%	27.9%	27.9%	29.0%	29.0%	29.0%	15.3%	29.0%	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.0	6.0	6.0	5.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	None	None		None	None	None	Min	Min	Min	None	Min	
Act Effct Green (s)	10.8	10.8		18.0	18.0	18.0	21.5	21.5	21.5	40.0	38.9	
Actuated g/C Ratio	0.14	0.14		0.24	0.24	0.24	0.29	0.29	0.29	0.53	0.52	
v/c Ratio	0.01	0.04		0.60	0.00	0.43	0.01	0.62	0.57	0.39	0.16	
Control Delay	40.5	34.5		30.9	29.0	7.1	25.0	28.1	13.5	14.6	11.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	40.5	34.5		30.9	29.0	7.1	25.0	28.1	13.5	14.6	11.9	
LOS	D	C		C	C	A	C	C	B	B	B	
Approach Delay		35.0			23.0			22.9			12.9	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	1	3		84	0	0	1	107	35	30	26	
Queue Length 95th (ft)	9	18		206	2	61	7	254	155	107	81	
Internal Link Dist (ft)		403			455			477			1006	
Turn Bay Length (ft)	150			335		210	170		125	115		
Base Capacity (vph)	764	1485		1481	1527	821	495	1629	853	517	2646	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.00	0.01		0.33	0.00	0.30	0.00	0.39	0.41	0.34	0.11	

Intersection Summary
Cycle Length: 131
Actuated Cycle Length: 75.3
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.62

Intersection Signal Delay: 21.0 Intersection LOS: C
Intersection Capacity Utilization 58.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: 30th Street & Garden of the Gods Road



Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰	↑↑↑	↱			↱			↱
Traffic Vol, veh/h	0	489	66	72	678	24	0	0	77	0	0	8
Future Vol, veh/h	0	489	66	72	678	24	0	0	77	0	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	440	-	415	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	532	72	78	737	26	0	0	84	0	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	604	0	0	-	-	266	-	-	369
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	605	-	-	0	0	624	0	0	536
Stage 1	0	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	605	-	-	-	-	624	-	-	536
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.1	11.7	11.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	624	-	-	605	-	-	536
HCM Lane V/C Ratio	0.134	-	-	0.129	-	-	0.016
HCM Control Delay (s)	11.7	-	-	11.8	-	-	11.8
HCM Lane LOS	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.5	-	-	0.4	-	-	0

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	3	22	0	39	40	73	23	0	79	31	25
Future Vol, veh/h	22	3	22	0	39	40	73	23	0	79	31	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	3	24	0	42	43	79	25	0	86	34	27

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	446	403	48	416	416	25	61	0	0	25	0	0
Stage 1	220	220	-	183	183	-	-	-	-	-	-	-
Stage 2	226	183	-	233	233	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	523	536	1021	547	527	1051	1542	-	-	1589	-	-
Stage 1	782	721	-	819	748	-	-	-	-	-	-	-
Stage 2	777	748	-	770	712	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	430	480	1021	488	472	1051	1542	-	-	1589	-	-
Mov Cap-2 Maneuver	430	480	-	488	472	-	-	-	-	-	-	-
Stage 1	741	681	-	776	709	-	-	-	-	-	-	-
Stage 2	664	709	-	706	672	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.6	11.3	5.7	4.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1542	-	-	595	655	1589	-	-
HCM Lane V/C Ratio	0.051	-	-	0.086	0.131	0.054	-	-
HCM Control Delay (s)	7.5	0	-	11.6	11.3	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.5	0.2	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	48	110	812	50	19	707
Future Vol, veh/h	48	110	812	50	19	707
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	120	883	54	21	768

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1336	469	0	0	937	0
Stage 1	910	-	-	-	-	-
Stage 2	426	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	145	541	-	-	727	-
Stage 1	353	-	-	-	-	-
Stage 2	627	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	141	541	-	-	727	-
Mov Cap-2 Maneuver	262	-	-	-	-	-
Stage 1	353	-	-	-	-	-
Stage 2	609	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	20	0	0.3
HCM LOS	C		

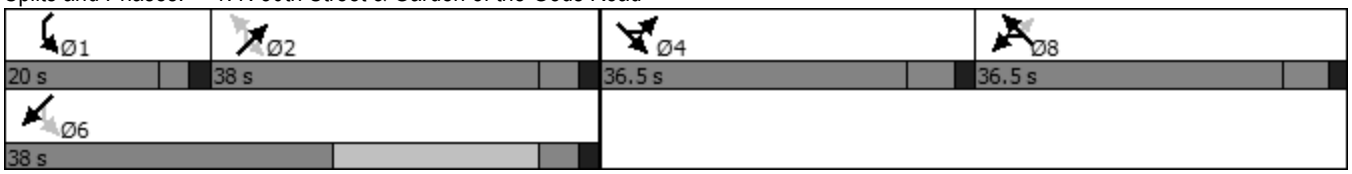
Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	409	727	-
HCM Lane V/C Ratio	-	-	0.42	0.028	-
HCM Control Delay (s)	-	-	20	10.1	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	2	0.1	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	6	32	12	529	203	150	56	232	244	182	230	28
Future Volume (vph)	6	32	12	529	203	150	56	232	244	182	230	28
Satd. Flow (prot)	1770	3394	0	3433	3539	1583	1770	3539	1583	1770	3483	0
Flt Permitted	0.950			0.950			0.580			0.429		
Satd. Flow (perm)	1770	3394	0	3433	3539	1583	1080	3539	1583	799	3483	0
Satd. Flow (RTOR)		13				163			265		12	
Lane Group Flow (vph)	7	48	0	575	221	163	61	252	265	198	280	0
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8			2		1	6	
Permitted Phases						8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	16.5	16.5		16.5	16.5	16.5	16.0	16.0	16.0	15.0	16.0	
Total Split (s)	36.5	36.5		36.5	36.5	36.5	38.0	38.0	38.0	20.0	38.0	
Total Split (%)	27.9%	27.9%		27.9%	27.9%	27.9%	29.0%	29.0%	29.0%	15.3%	29.0%	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.0	6.0	6.0	5.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	None	None		None	None	None	Min	Min	Min	None	Min	
Act Effct Green (s)	10.7	10.7		19.6	19.6	19.6	12.6	12.6	12.6	31.7	30.7	
Actuated g/C Ratio	0.15	0.15		0.27	0.27	0.27	0.18	0.18	0.18	0.44	0.43	
v/c Ratio	0.03	0.09		0.61	0.23	0.30	0.32	0.41	0.54	0.38	0.19	
Control Delay	35.3	27.5		27.5	22.8	6.0	36.6	32.0	9.1	18.4	15.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	35.3	27.5		27.5	22.8	6.0	36.6	32.0	9.1	18.4	15.4	
LOS	D	C		C	C	A	D	C	A	B	B	
Approach Delay		28.5			22.8			22.0			16.6	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	3	7		128	44	0	27	60	0	66	46	
Queue Length 95th (ft)	17	26		198	80	45	70	107	66	128	82	
Internal Link Dist (ft)		403			458			471			1006	
Turn Bay Length (ft)	150			335		210	170		125	115		
Base Capacity (vph)	785	1513		1523	1570	793	511	1675	888	567	2632	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.01	0.03		0.38	0.14	0.21	0.12	0.15	0.30	0.35	0.11	

Intersection Summary
Cycle Length: 131
Actuated Cycle Length: 72
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.61

Intersection Signal Delay: 21.3 Intersection LOS: C
Intersection Capacity Utilization 54.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: N 30th Street & Garden of the Gods Road



Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NEL	NER
Lane Configurations		↑↑↑	↱	↰	↑↑↑	↱				↱
Traffic Vol, veh/h	0	455	22	25	899	16	0	0	0	27
Future Vol, veh/h	0	455	22	25	899	16	0	0	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	75	440	-	415	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	0	-	0	-
Grade, %	-	0	-	-	0	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	495	24	27	977	17	0	0	0	29

Major/Minor	Major1			Major2			Minor2		Minor1	
Conflicting Flow All	-	0	0	519	0	0	-	489	-	248
Stage 1	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	5.34	-	-	-	7.14	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.12	-	-	-	3.92	-	3.92
Pot Cap-1 Maneuver	0	-	-	663	-	-	0	449	0	641
Stage 1	0	-	-	-	-	-	0	-	0	-
Stage 2	0	-	-	-	-	-	0	-	0	-
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	-	-	-	663	-	-	-	449	-	641
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	SB	NE
HCM Control Delay, s	0	0.3	13.3	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	641	-	-	663	-	-	449
HCM Lane V/C Ratio	0.046	-	-	0.041	-	-	0.034
HCM Control Delay (s)	10.9	-	-	10.7	-	-	13.3
HCM Lane LOS	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	2	37	0	1	2	23	7	0	1	27	18
Future Vol, veh/h	19	2	37	0	1	2	23	7	0	1	27	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	2	40	0	1	2	25	8	0	1	29	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	101	99	39	120	109	8	49	0	0	8	0	0
Stage 1	41	41	-	58	58	-	-	-	-	-	-	-
Stage 2	60	58	-	62	51	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	880	791	1033	855	781	1074	1558	-	-	1612	-	-
Stage 1	974	861	-	954	847	-	-	-	-	-	-	-
Stage 2	951	847	-	949	852	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	866	778	1033	810	768	1074	1558	-	-	1612	-	-
Mov Cap-2 Maneuver	866	778	-	810	768	-	-	-	-	-	-	-
Stage 1	958	860	-	939	833	-	-	-	-	-	-	-
Stage 2	933	833	-	909	851	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	8.8	5.6	0.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1558	-	-	961	948	1612	-	-
HCM Lane V/C Ratio	0.016	-	-	0.066	0.003	0.001	-	-
HCM Control Delay (s)	7.3	0	-	9	8.8	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	25	19	470	43	19	762
Future Vol, veh/h	25	19	470	43	19	762
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	21	511	47	21	828

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	991	279	0	0	558	0
Stage 1	535	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	243	718	-	-	1009	-
Stage 1	551	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	238	718	-	-	1009	-
Mov Cap-2 Maneuver	369	-	-	-	-	-
Stage 1	551	-	-	-	-	-
Stage 2	592	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	13.6	0	0.2
HCM LOS	B		

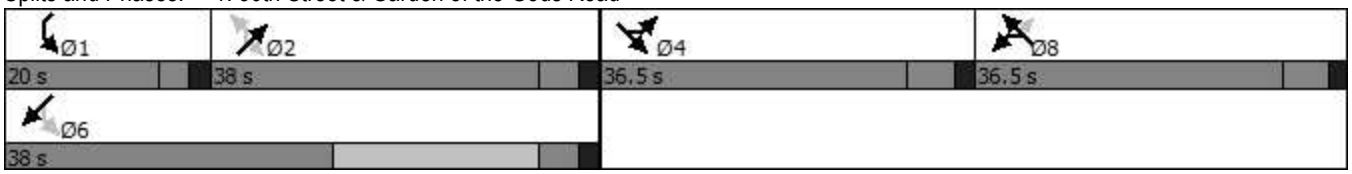
Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	467	1009	-
HCM Lane V/C Ratio	-	-	0.102	0.02	-
HCM Control Delay (s)	-	-	13.6	8.6	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	28	193	54	566	30	517	10	603	336	166	270	5
Future Volume (vph)	28	193	54	566	30	517	10	603	336	166	270	5
Satd. Flow (prot)	1770	3422	0	3433	3539	1583	1770	3539	1583	1770	3529	0
Flt Permitted	0.950			0.950			0.570			0.183		
Satd. Flow (perm)	1770	3422	0	3433	3539	1583	1062	3539	1583	341	3529	0
Satd. Flow (RTOR)		25				562			231		1	
Lane Group Flow (vph)	30	269	0	615	33	562	11	655	365	180	298	0
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8			2		1	6	
Permitted Phases						8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	16.5	16.5		16.5	16.5	16.5	16.0	16.0	16.0	15.0	16.0	
Total Split (s)	36.5	36.5		36.5	36.5	36.5	38.0	38.0	38.0	20.0	38.0	
Total Split (%)	27.9%	27.9%		27.9%	27.9%	27.9%	29.0%	29.0%	29.0%	15.3%	29.0%	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.0	6.0	6.0	5.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	None	None		None	None	None	Min	Min	Min	None	Min	
Act Effct Green (s)	13.3	13.3		25.0	25.0	25.0	25.5	25.5	25.5	44.0	43.0	
Actuated g/C Ratio	0.13	0.13		0.25	0.25	0.25	0.25	0.25	0.25	0.44	0.43	
v/c Ratio	0.13	0.57		0.72	0.04	0.69	0.04	0.73	0.64	0.55	0.20	
Control Delay	44.0	44.0		41.2	31.5	8.0	31.7	40.8	18.5	25.6	19.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	44.0	44.0		41.2	31.5	8.0	31.7	40.8	18.5	25.6	19.0	
LOS	D	D		D	C	A	C	D	B	C	B	
Approach Delay		44.0			25.5			32.8			21.5	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	18	80		188	8	0	5	207	73	73	63	
Queue Length 95th (ft)	50	136		286	23	99	21	303	190	133	102	
Internal Link Dist (ft)		403			455			477			1006	
Turn Bay Length (ft)	150			335		210	170		125	115		
Base Capacity (vph)	539	1061		1046	1079	873	345	1151	670	366	1865	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.25		0.59	0.03	0.64	0.03	0.57	0.54	0.49	0.16	

Intersection Summary
Cycle Length: 131
Actuated Cycle Length: 100.8
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.73

Intersection Signal Delay: 29.2	Intersection LOS: C
Intersection Capacity Utilization 72.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: 30th Street & Garden of the Gods Road



Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰	↑↑↑	↱			↱			↱
Traffic Vol, veh/h	0	702	69	75	1019	25	0	0	80	0	0	8
Future Vol, veh/h	0	702	69	75	1019	25	0	0	80	0	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	440	-	415	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	763	75	82	1108	27	0	0	87	0	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	838	0	0	-	-	382	-	-	554
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	468	-	-	0	0	526	0	0	408
Stage 1	0	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	468	-	-	-	-	526	-	-	408
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	13.2	14
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	526	-	-	468	-	-	408
HCM Lane V/C Ratio	0.165	-	-	0.174	-	-	0.021
HCM Control Delay (s)	13.2	-	-	14.3	-	-	14
HCM Lane LOS	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.6	-	-	0.6	-	-	0.1

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	23	3	23	0	41	42	76	24	0	82	32	26
Future Vol, veh/h	23	3	23	0	41	42	76	24	0	82	32	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	3	25	0	45	46	83	26	0	89	35	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	465	419	49	433	433	26	63	0	0	26	0	0
Stage 1	227	227	-	192	192	-	-	-	-	-	-	-
Stage 2	238	192	-	241	241	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	508	525	1020	533	516	1050	1540	-	-	1588	-	-
Stage 1	776	716	-	810	742	-	-	-	-	-	-	-
Stage 2	765	742	-	762	706	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	412	467	1020	474	459	1050	1540	-	-	1588	-	-
Mov Cap-2 Maneuver	412	467	-	474	459	-	-	-	-	-	-	-
Stage 1	733	674	-	765	701	-	-	-	-	-	-	-
Stage 2	648	701	-	697	665	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.9	11.5	5.7	4.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1540	-	-	578	642	1588	-	-
HCM Lane V/C Ratio	0.054	-	-	0.092	0.141	0.056	-	-
HCM Control Delay (s)	7.5	0	-	11.9	11.5	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.5	0.2	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	50	114	845	52	20	735
Future Vol, veh/h	50	114	845	52	20	735
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	124	918	57	22	799

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1391	488	0	0	975	0
Stage 1	947	-	-	-	-	-
Stage 2	444	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	133	526	-	-	703	-
Stage 1	337	-	-	-	-	-
Stage 2	614	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	129	526	-	-	703	-
Mov Cap-2 Maneuver	249	-	-	-	-	-
Stage 1	337	-	-	-	-	-
Stage 2	595	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	21.5	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	393	703	-
HCM Lane V/C Ratio	-	-	0.454	0.031	-
HCM Control Delay (s)	-	-	21.5	10.3	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	2.3	0.1	-

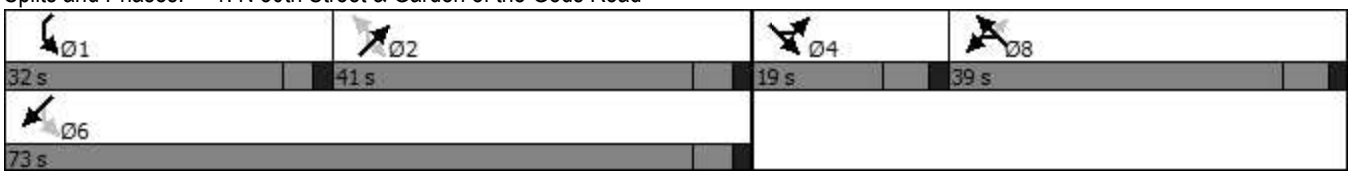
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	8	53	20	764	334	216	94	335	353	263	332	46
Future Volume (vph)	8	53	20	764	334	216	94	335	353	263	332	46
Satd. Flow (prot)	1770	3394	0	3433	3539	1583	1770	3539	1583	1770	3476	0
Flt Permitted	0.950			0.950			0.511			0.340		
Satd. Flow (perm)	1770	3394	0	3433	3539	1583	952	3539	1583	633	3476	0
Satd. Flow (RTOR)		22				235			384		17	
Lane Group Flow (vph)	9	80	0	830	363	235	102	364	384	286	411	0
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8			2		1	6	
Permitted Phases						8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	16.5	16.5		16.5	16.5	16.5	16.0	16.0	16.0	15.0	16.0	
Total Split (s)	19.0	19.0		39.0	39.0	39.0	41.0	41.0	41.0	32.0	73.0	
Total Split (%)	14.5%	14.5%		29.8%	29.8%	29.8%	31.3%	31.3%	31.3%	24.4%	55.7%	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.0	6.0	6.0	5.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	None	None		None	None	None	Min	Min	Min	None	Min	
Act Effct Green (s)	10.5	10.5		31.2	31.2	31.2	17.9	17.9	17.9	41.0	40.0	
Actuated g/C Ratio	0.11	0.11		0.32	0.32	0.32	0.19	0.19	0.19	0.42	0.41	
v/c Ratio	0.05	0.21		0.75	0.32	0.35	0.58	0.55	0.63	0.61	0.28	
Control Delay	47.5	36.9		36.9	28.5	5.8	52.9	40.6	9.0	26.0	19.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.5	36.9		36.9	28.5	5.8	52.9	40.6	9.0	26.0	19.1	
LOS	D	D		D	C	A	D	D	A	C	B	
Approach Delay		37.9			29.6			27.8			21.9	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	5	18		242	91	0	62	115	0	129	90	
Queue Length 95th (ft)	23	47		#418	162	60	125	171	81	193	124	
Internal Link Dist (ft)		403			458			471			1006	
Turn Bay Length (ft)	150			335		210	170		125	115		
Base Capacity (vph)	241	482		1219	1256	713	363	1353	842	606	2476	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.04	0.17		0.68	0.29	0.33	0.28	0.27	0.46	0.47	0.17	

Intersection Summary
Cycle Length: 131
Actuated Cycle Length: 96.5
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.75

Intersection Signal Delay: 27.6	Intersection LOS: C
Intersection Capacity Utilization 66.9%	ICU Level of Service C
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: N 30th Street & Garden of the Gods Road



Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NEL	NER
Lane Configurations		↑↑↑	↱	↰	↑↑↑	↱				↱
Traffic Vol, veh/h	0	608	32	36	1217	23	0	0	0	39
Future Vol, veh/h	0	608	32	36	1217	23	0	0	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	75	440	-	415	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	0	-	0	-
Grade, %	-	0	-	-	0	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	661	35	39	1323	25	0	0	0	42

Major/Minor	Major1			Major2			Minor2		Minor1	
Conflicting Flow All	-	0	0	696	0	0	-	662	-	331
Stage 1	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	5.34	-	-	-	7.14	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.12	-	-	-	3.92	-	3.92
Pot Cap-1 Maneuver	0	-	-	547	-	-	0	347	0	567
Stage 1	0	-	-	-	-	-	0	-	0	-
Stage 2	0	-	-	-	-	-	0	-	0	-
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	-	-	-	547	-	-	-	347	-	567
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	SB	NE
HCM Control Delay, s	0	0.3	16.1	11.9
HCM LOS			C	B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	567	-	-	547	-	-	347
HCM Lane V/C Ratio	0.075	-	-	0.072	-	-	0.063
HCM Control Delay (s)	11.9	-	-	12.1	-	-	16.1
HCM Lane LOS	B	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-	-	0.2

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	27	3	54	0	2	3	33	11	0	2	39	26
Future Vol, veh/h	27	3	54	0	2	3	33	11	0	2	39	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	3	59	0	2	3	36	12	0	2	42	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	147	144	56	175	158	12	70	0	0	12	0	0
Stage 1	60	60	-	84	84	-	-	-	-	-	-	-
Stage 2	87	84	-	91	74	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	821	747	1011	788	734	1069	1531	-	-	1607	-	-
Stage 1	951	845	-	924	825	-	-	-	-	-	-	-
Stage 2	921	825	-	916	833	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	801	728	1011	726	716	1069	1531	-	-	1607	-	-
Mov Cap-2 Maneuver	801	728	-	726	716	-	-	-	-	-	-	-
Stage 1	928	844	-	902	805	-	-	-	-	-	-	-
Stage 2	894	805	-	859	832	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	9.1	5.6	0.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1531	-	-	921	893	1607	-	-
HCM Lane V/C Ratio	0.023	-	-	0.099	0.006	0.001	-	-
HCM Control Delay (s)	7.4	0	-	9.3	9.1	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	36	27	567	62	27	888
Future Vol, veh/h	36	27	567	62	27	888
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	29	616	67	29	965

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1191	342	0	0	683	0
Stage 1	650	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	180	654	-	-	906	-
Stage 1	481	-	-	-	-	-
Stage 2	548	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	174	654	-	-	906	-
Mov Cap-2 Maneuver	309	-	-	-	-	-
Stage 1	481	-	-	-	-	-
Stage 2	530	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	15.9	0	0.3
HCM LOS	C		

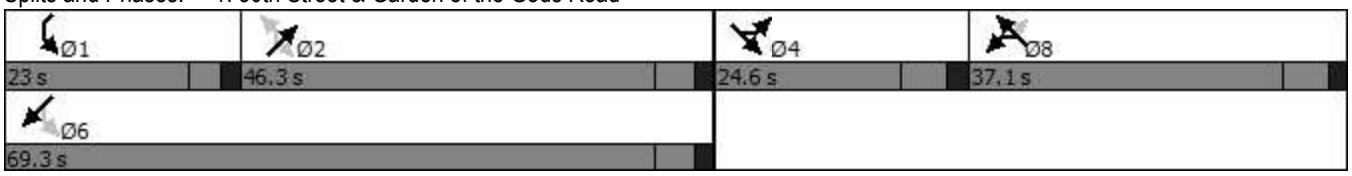
Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	399	906	-
HCM Lane V/C Ratio	-	-	0.172	0.032	-
HCM Control Delay (s)	-	-	15.9	9.1	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	45	318	90	672	50	620	17	870	485	240	390	9
Future Volume (vph)	45	318	90	672	50	620	17	870	485	240	390	9
Satd. Flow (prot)	1770	3422	0	3433	3539	1583	1770	3539	1583	1770	3529	0
Flt Permitted	0.950			0.950			0.500			0.092		
Satd. Flow (perm)	1770	3422	0	3433	3539	1583	931	3539	1583	171	3529	0
Satd. Flow (RTOR)		23				430			252		2	
Lane Group Flow (vph)	49	444	0	730	54	674	18	946	527	261	434	0
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8			2		1	6	
Permitted Phases						8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	16.5	16.5		16.5	16.5	16.5	16.0	16.0	16.0	15.0	16.0	
Total Split (s)	24.6	24.6		37.1	37.1	37.1	46.3	46.3	46.3	23.0	69.3	
Total Split (%)	18.8%	18.8%		28.3%	28.3%	28.3%	35.3%	35.3%	35.3%	17.6%	52.9%	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.0	6.0	6.0	5.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	None	None		None	None	None	Min	Min	Min	None	Min	
Act Effct Green (s)	17.7	17.7		29.8	29.8	29.8	38.5	38.5	38.5	61.6	60.6	
Actuated g/C Ratio	0.14	0.14		0.23	0.23	0.23	0.30	0.30	0.30	0.48	0.48	
v/c Ratio	0.20	0.90		0.91	0.07	0.96	0.06	0.88	0.80	0.88	0.26	
Control Delay	52.5	73.0		64.1	39.4	44.1	33.1	53.2	31.6	62.5	20.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.5	73.0		64.1	39.4	44.1	33.1	53.2	31.6	62.5	20.3	
LOS	D	E		E	D	D	C	D	C	E	C	
Approach Delay		71.0			53.9			45.3			36.1	
Approach LOS		E			D			D			D	
Queue Length 50th (ft)	37	188		313	18	248	11	399	227	163	111	
Queue Length 95th (ft)	77	#285		#423	37	#512	31	#488	384	#314	147	
Internal Link Dist (ft)		403			455			477			1006	
Turn Bay Length (ft)	150			335		210	170		125	115		
Base Capacity (vph)	252	508		829	854	708	296	1125	675	309	1764	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.87		0.88	0.06	0.95	0.06	0.84	0.78	0.84	0.25	

Intersection Summary
Cycle Length: 131
Actuated Cycle Length: 127.2
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.96

Intersection Signal Delay: 49.9 Intersection LOS: D
Intersection Capacity Utilization 88.2% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: 30th Street & Garden of the Gods Road



Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰	↑↑↑	↱			↱			↱
Traffic Vol, veh/h	0	1208	99	108	1195	36	0	0	116	0	0	12
Future Vol, veh/h	0	1208	99	108	1195	36	0	0	116	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	440	-	415	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1313	108	117	1299	39	0	0	126	0	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	1421	0	0	-	-	657	-	-	650
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	244	-	-	0	0	349	0	0	353
Stage 1	0	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	244	-	-	-	-	349	-	-	353
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.6	21	15.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	349	-	-	244	-	-	353
HCM Lane V/C Ratio	0.361	-	-	0.481	-	-	0.037
HCM Control Delay (s)	21	-	-	32.7	-	-	15.6
HCM Lane LOS	C	-	-	D	-	-	C
HCM 95th %tile Q(veh)	1.6	-	-	2.4	-	-	0.1

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	33	5	33	0	59	60	110	35	0	119	47	38
Future Vol, veh/h	33	5	33	0	59	60	110	35	0	119	47	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	5	36	0	64	65	120	38	0	129	51	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	673	608	72	628	628	38	92	0	0	38	0	0
Stage 1	330	330	-	278	278	-	-	-	-	-	-	-
Stage 2	343	278	-	350	350	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	369	410	990	395	400	1034	1503	-	-	1572	-	-
Stage 1	683	646	-	728	680	-	-	-	-	-	-	-
Stage 2	672	680	-	666	633	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	259	344	990	329	335	1034	1503	-	-	1572	-	-
Mov Cap-2 Maneuver	259	344	-	329	335	-	-	-	-	-	-	-
Stage 1	627	590	-	668	624	-	-	-	-	-	-	-
Stage 2	519	624	-	581	578	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16	14.5	5.8	4.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1503	-	-	405	508	1572	-	-
HCM Lane V/C Ratio	0.08	-	-	0.191	0.255	0.082	-	-
HCM Control Delay (s)	7.6	0	-	16	14.5	7.5	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.7	1	0.3	-	-

Intersection	
Int Delay, s/veh	7.4

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	72	165	1137	75	29	1005
Future Vol, veh/h	72	165	1137	75	29	1005
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	78	179	1236	82	32	1092

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1887	659	0	0	1318	0
Stage 1	1277	-	-	-	-	-
Stage 2	610	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 62	406	-	-	520	-
Stage 1	226	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 58	406	-	-	520	-
Mov Cap-2 Maneuver	162	-	-	-	-	-
Stage 1	226	-	-	-	-	-
Stage 2	474	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	75.9	0	0.3
HCM LOS	F		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	279	520	-
HCM Lane V/C Ratio	-	-	0.923	0.061	-
HCM Control Delay (s)	-	-	75.9	12.4	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	8.6	0.2	-

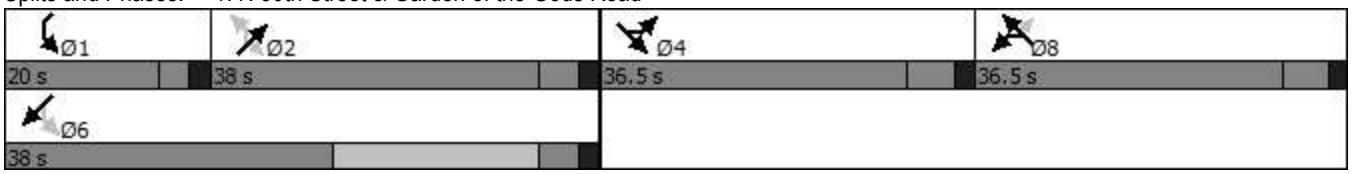
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	6	33	12	529	203	150	60	256	244	185	235	28
Future Volume (vph)	6	33	12	529	203	150	60	256	244	185	235	28
Satd. Flow (prot)	1770	3398	0	3433	3539	1583	1770	3539	1583	1770	3483	0
Flt Permitted	0.950			0.950			0.577			0.423		
Satd. Flow (perm)	1770	3398	0	3433	3539	1583	1075	3539	1583	788	3483	0
Satd. Flow (RTOR)		13				163			265		11	
Lane Group Flow (vph)	7	49	0	575	221	163	65	278	265	201	285	0
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8			2		1	6	
Permitted Phases						8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	16.5	16.5		16.5	16.5	16.5	16.0	16.0	16.0	15.0	16.0	
Total Split (s)	36.5	36.5		36.5	36.5	36.5	38.0	38.0	38.0	20.0	38.0	
Total Split (%)	27.9%	27.9%		27.9%	27.9%	27.9%	29.0%	29.0%	29.0%	15.3%	29.0%	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.0	6.0	6.0	5.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	None	None		None	None	None	Min	Min	Min	None	Min	
Act Effct Green (s)	10.7	10.7		19.8	19.8	19.8	13.1	13.1	13.1	32.4	31.3	
Actuated g/C Ratio	0.15	0.15		0.27	0.27	0.27	0.18	0.18	0.18	0.45	0.43	
v/c Ratio	0.03	0.10		0.62	0.23	0.30	0.34	0.44	0.53	0.38	0.19	
Control Delay	35.8	28.0		27.8	23.2	6.0	36.7	32.2	8.9	18.4	15.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	35.8	28.0		27.8	23.2	6.0	36.7	32.2	8.9	18.4	15.4	
LOS	D	C		C	C	A	D	C	A	B	B	
Approach Delay		28.9			23.1			22.5			16.6	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	3	8		130	45	0	29	67	0	67	47	
Queue Length 95th (ft)	17	27		200	81	45	74	117	65	130	84	
Internal Link Dist (ft)		403			458			471			1006	
Turn Bay Length (ft)	150			335		210	170		125	115		
Base Capacity (vph)	778	1501		1509	1556	787	504	1659	883	566	2607	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.01	0.03		0.38	0.14	0.21	0.13	0.17	0.30	0.36	0.11	

Intersection Summary
Cycle Length: 131
Actuated Cycle Length: 72.8
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.62

Intersection Signal Delay: 21.6 Intersection LOS: C
Intersection Capacity Utilization 54.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: N 30th Street & Garden of the Gods Road



Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NEL	NER
Lane Configurations		↑↑↑	↱	↰	↑↑↑	↱				↱
Traffic Vol, veh/h	0	455	26	34	899	16	0	0	0	55
Future Vol, veh/h	0	455	26	34	899	16	0	0	0	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	75	440	-	415	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	0	-	0	-
Grade, %	-	0	-	-	0	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	495	28	37	977	17	0	0	0	60

Major/Minor	Major1			Major2			Minor2		Minor1	
Conflicting Flow All	-	0	0	523	0	0	-	489	-	248
Stage 1	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	5.34	-	-	-	7.14	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.12	-	-	-	3.92	-	3.92
Pot Cap-1 Maneuver	0	-	-	661	-	-	0	449	0	641
Stage 1	0	-	-	-	-	-	0	-	0	-
Stage 2	0	-	-	-	-	-	0	-	0	-
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	-	-	-	661	-	-	-	449	-	641
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	SB	NE
HCM Control Delay, s	0	0.4	13.3	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	641	-	-	661	-	-	449
HCM Lane V/C Ratio	0.093	-	-	0.056	-	-	0.034
HCM Control Delay (s)	11.2	-	-	10.8	-	-	13.3
HCM Lane LOS	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-	-	0.1

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	47	2	40	0	1	2	24	7	0	1	27	31
Future Vol, veh/h	47	2	40	0	1	2	24	7	0	1	27	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	2	43	0	1	2	26	8	0	1	29	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	110	108	46	131	125	8	63	0	0	8	0	0
Stage 1	48	48	-	60	60	-	-	-	-	-	-	-
Stage 2	62	60	-	71	65	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	868	782	1023	841	765	1074	1540	-	-	1612	-	-
Stage 1	965	855	-	951	845	-	-	-	-	-	-	-
Stage 2	949	845	-	939	841	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	853	768	1023	792	751	1074	1540	-	-	1612	-	-
Mov Cap-2 Maneuver	853	768	-	792	751	-	-	-	-	-	-	-
Stage 1	949	854	-	935	831	-	-	-	-	-	-	-
Stage 2	930	831	-	896	840	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	8.8	5.7	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1540	-	-	919	939	1612	-	-
HCM Lane V/C Ratio	0.017	-	-	0.105	0.003	0.001	-	-
HCM Control Delay (s)	7.4	0	-	9.4	8.8	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	35	47	470	46	24	762
Future Vol, veh/h	35	47	470	46	24	762
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	51	511	50	26	828

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1002	281	0	0	561	0
Stage 1	536	-	-	-	-	-
Stage 2	466	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	239	716	-	-	1006	-
Stage 1	551	-	-	-	-	-
Stage 2	598	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	233	716	-	-	1006	-
Mov Cap-2 Maneuver	365	-	-	-	-	-
Stage 1	551	-	-	-	-	-
Stage 2	582	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	13.6	0	0.3
HCM LOS	B		

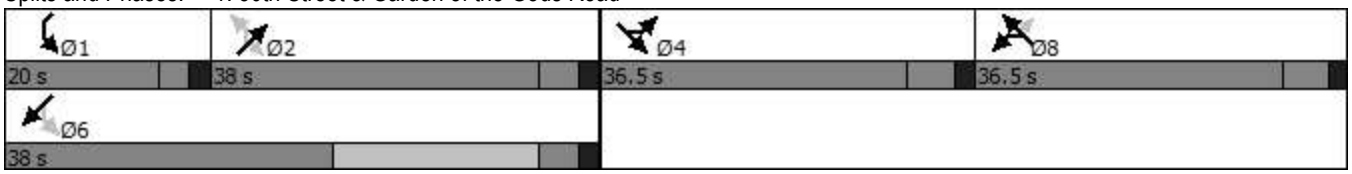
Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	508	1006	-
HCM Lane V/C Ratio	-	-	0.175	0.026	-
HCM Control Delay (s)	-	-	13.6	8.7	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	28	197	54	566	30	517	12	618	336	177	285	5
Future Volume (vph)	28	197	54	566	30	517	12	618	336	177	285	5
Satd. Flow (prot)	1770	3426	0	3433	3539	1583	1770	3539	1583	1770	3532	0
Flt Permitted	0.950			0.950			0.561			0.175		
Satd. Flow (perm)	1770	3426	0	3433	3539	1583	1045	3539	1583	326	3532	0
Satd. Flow (RTOR)		25				562			225		1	
Lane Group Flow (vph)	30	273	0	615	33	562	13	672	365	192	315	0
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8			2		1	6	
Permitted Phases						8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	16.5	16.5		16.5	16.5	16.5	16.0	16.0	16.0	15.0	16.0	
Total Split (s)	36.5	36.5		36.5	36.5	36.5	38.0	38.0	38.0	20.0	38.0	
Total Split (%)	27.9%	27.9%		27.9%	27.9%	27.9%	29.0%	29.0%	29.0%	15.3%	29.0%	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.0	6.0	6.0	5.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	None	None		None	None	None	Min	Min	Min	None	Min	
Act Effct Green (s)	13.5	13.5		25.1	25.1	25.1	26.2	26.2	26.2	45.1	44.1	
Actuated g/C Ratio	0.13	0.13		0.25	0.25	0.25	0.26	0.26	0.26	0.44	0.43	
v/c Ratio	0.13	0.58		0.73	0.04	0.69	0.05	0.74	0.64	0.59	0.21	
Control Delay	44.4	44.7		42.0	31.9	8.0	32.0	41.3	19.1	26.7	19.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	44.4	44.7		42.0	31.9	8.0	32.0	41.3	19.1	26.7	19.1	
LOS	D	D		D	C	A	C	D	B	C	B	
Approach Delay		44.7			26.0			33.5			22.0	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	18	83		192	8	0	7	217	79	79	67	
Queue Length 95th (ft)	50	138		287	23	99	24	312	196	142	107	
Internal Link Dist (ft)		403			455			477			1006	
Turn Bay Length (ft)	150			335		210	170		125	115		
Base Capacity (vph)	532	1047		1032	1063	869	335	1134	660	361	1840	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.26		0.60	0.03	0.65	0.04	0.59	0.55	0.53	0.17	

Intersection Summary
Cycle Length: 131
Actuated Cycle Length: 102.1
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.74

Intersection Signal Delay: 29.7 Intersection LOS: C
Intersection Capacity Utilization 73.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: 30th Street & Garden of the Gods Road



Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰	↑↑↑	↱			↱			↱
Traffic Vol, veh/h	0	702	84	104	1019	25	0	0	97	0	0	8
Future Vol, veh/h	0	702	84	104	1019	25	0	0	97	0	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	440	-	415	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	763	91	113	1108	27	0	0	105	0	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	854	0	0	-	-	382	-	-	554
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	460	-	-	0	0	526	0	0	408
Stage 1	0	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	460	-	-	-	-	526	-	-	408
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.4	13.6	14
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	526	-	-	460	-	-	408
HCM Lane V/C Ratio	0.2	-	-	0.246	-	-	0.021
HCM Control Delay (s)	13.6	-	-	15.4	-	-	14
HCM Lane LOS	B	-	-	C	-	-	B
HCM 95th %tile Q(veh)	0.7	-	-	1	-	-	0.1

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	40	3	25	0	41	42	79	24	0	82	32	70
Future Vol, veh/h	40	3	25	0	41	42	79	24	0	82	32	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	3	27	0	45	46	86	26	0	89	35	76

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	495	449	73	464	487	26	111	0	0	26	0	0
Stage 1	251	251	-	198	198	-	-	-	-	-	-	-
Stage 2	244	198	-	266	289	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	485	505	989	508	481	1050	1479	-	-	1588	-	-
Stage 1	753	699	-	804	737	-	-	-	-	-	-	-
Stage 2	760	737	-	739	673	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	389	447	989	448	426	1050	1479	-	-	1588	-	-
Mov Cap-2 Maneuver	389	447	-	448	426	-	-	-	-	-	-	-
Stage 1	709	657	-	757	694	-	-	-	-	-	-	-
Stage 2	640	694	-	672	633	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.4	11.9	5.8	3.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1479	-	-	504	609	1588	-	-
HCM Lane V/C Ratio	0.058	-	-	0.147	0.148	0.056	-	-
HCM Control Delay (s)	7.6	0	-	13.4	11.9	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0.5	0.2	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	57	131	845	63	35	735
Future Vol, veh/h	57	131	845	63	35	735
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	142	918	68	38	799

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1428	493	0	0	986	0
Stage 1	952	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	126	522	-	-	696	-
Stage 1	335	-	-	-	-	-
Stage 2	591	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	119	522	-	-	696	-
Mov Cap-2 Maneuver	241	-	-	-	-	-
Stage 1	335	-	-	-	-	-
Stage 2	558	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	24.3	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	386	696	-
HCM Lane V/C Ratio	-	-	0.529	0.055	-
HCM Control Delay (s)	-	-	24.3	10.5	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	3	0.2	-

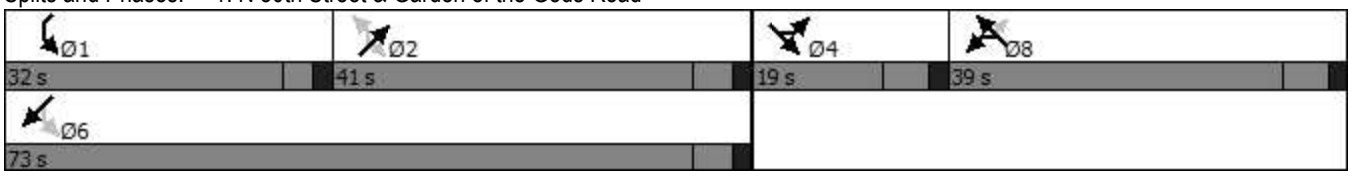
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	8	54	20	764	334	216	98	359	353	266	337	46
Future Volume (vph)	8	54	20	764	334	216	98	359	353	266	337	46
Satd. Flow (prot)	1770	3394	0	3433	3539	1583	1770	3539	1583	1770	3476	0
Flt Permitted	0.950			0.950			0.508			0.318		
Satd. Flow (perm)	1770	3394	0	3433	3539	1583	946	3539	1583	592	3476	0
Satd. Flow (RTOR)		22				235			384		17	
Lane Group Flow (vph)	9	81	0	830	363	235	107	390	384	289	416	0
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8			2		1	6	
Permitted Phases						8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	16.5	16.5		16.5	16.5	16.5	16.0	16.0	16.0	15.0	16.0	
Total Split (s)	19.0	19.0		39.0	39.0	39.0	41.0	41.0	41.0	32.0	73.0	
Total Split (%)	14.5%	14.5%		29.8%	29.8%	29.8%	31.3%	31.3%	31.3%	24.4%	55.7%	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.0	6.0	6.0	5.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	None	None		None	None	None	Min	Min	Min	None	Min	
Act Effct Green (s)	10.4	10.4		32.0	32.0	32.0	19.0	19.0	19.0	42.6	41.6	
Actuated g/C Ratio	0.11	0.11		0.32	0.32	0.32	0.19	0.19	0.19	0.43	0.42	
v/c Ratio	0.05	0.22		0.75	0.32	0.35	0.59	0.57	0.63	0.63	0.28	
Control Delay	48.1	37.5		37.4	29.0	5.8	53.0	40.9	8.7	26.3	19.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.1	37.5		37.4	29.0	5.8	53.0	40.9	8.7	26.3	19.0	
LOS	D	D		D	C	A	D	D	A	C	B	
Approach Delay		38.6			30.1			28.4			22.0	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	5	18		246	92	0	65	124	0	131	91	
Queue Length 95th (ft)	24	48		#426	165	61	129	183	80	194	125	
Internal Link Dist (ft)		403			458			471			1006	
Turn Bay Length (ft)	150			335		210	170		125	115		
Base Capacity (vph)	232	464		1170	1206	694	347	1299	824	588	2448	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.04	0.17		0.71	0.30	0.34	0.31	0.30	0.47	0.49	0.17	

Intersection Summary
Cycle Length: 131
Actuated Cycle Length: 98.9
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.75

Intersection Signal Delay: 28.0	Intersection LOS: C
Intersection Capacity Utilization 67.7%	ICU Level of Service C
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: N 30th Street & Garden of the Gods Road



Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NEL	NER
Lane Configurations		↑↑↑	↱	↰	↑↑↑	↱				↱
Traffic Vol, veh/h	0	608	36	45	1217	23	0	0	0	67
Future Vol, veh/h	0	608	36	45	1217	23	0	0	0	67
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	75	440	-	415	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	0	-	0	-
Grade, %	-	0	-	-	0	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	661	39	49	1323	25	0	0	0	73

Major/Minor	Major1			Major2			Minor2		Minor1	
Conflicting Flow All	-	0	0	700	0	0	-	662	-	331
Stage 1	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	5.34	-	-	-	7.14	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.12	-	-	-	3.92	-	3.92
Pot Cap-1 Maneuver	0	-	-	545	-	-	0	347	0	567
Stage 1	0	-	-	-	-	-	0	-	0	-
Stage 2	0	-	-	-	-	-	0	-	0	-
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	-	-	-	545	-	-	-	347	-	567
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	SB	NE
HCM Control Delay, s	0	0.4	16.1	12.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	567	-	-	545	-	-	347
HCM Lane V/C Ratio	0.128	-	-	0.09	-	-	0.063
HCM Control Delay (s)	12.3	-	-	12.3	-	-	16.1
HCM Lane LOS	B	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	0.3	-	-	0.2

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	55	3	57	0	2	3	34	11	0	2	39	39
Future Vol, veh/h	55	3	57	0	2	3	34	11	0	2	39	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	60	3	62	0	2	3	37	12	0	2	42	42

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	156	153	63	186	174	12	84	0	0	12	0	0
Stage 1	67	67	-	86	86	-	-	-	-	-	-	-
Stage 2	89	86	-	100	88	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	810	739	1002	775	719	1069	1513	-	-	1607	-	-
Stage 1	943	839	-	922	824	-	-	-	-	-	-	-
Stage 2	918	824	-	906	822	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	790	720	1002	710	700	1069	1513	-	-	1607	-	-
Mov Cap-2 Maneuver	790	720	-	710	700	-	-	-	-	-	-	-
Stage 1	919	838	-	899	803	-	-	-	-	-	-	-
Stage 2	890	803	-	846	821	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	9.1	5.6	0.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1513	-	-	880	883	1607	-	-
HCM Lane V/C Ratio	0.024	-	-	0.142	0.006	0.001	-	-
HCM Control Delay (s)	7.4	0	-	9.8	9.1	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0	0	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	46	55	567	65	32	888
Future Vol, veh/h	46	55	567	65	32	888
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	60	616	71	35	965

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1205	344	0	0	687	0
Stage 1	652	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	176	652	-	-	903	-
Stage 1	480	-	-	-	-	-
Stage 2	540	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	169	652	-	-	903	-
Mov Cap-2 Maneuver	305	-	-	-	-	-
Stage 1	480	-	-	-	-	-
Stage 2	519	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	16.3	0	0.3
HCM LOS	C		

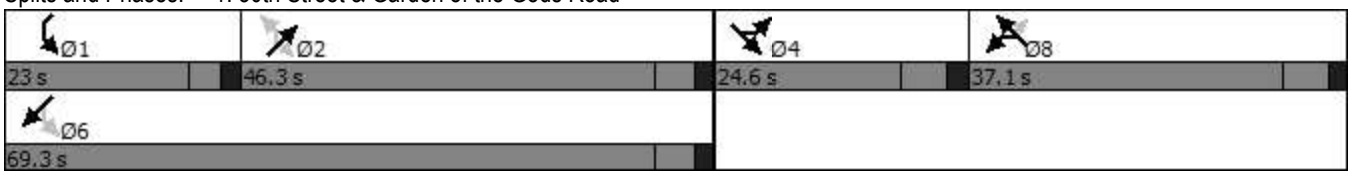
Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	429	903	-
HCM Lane V/C Ratio	-	-	0.256	0.039	-
HCM Control Delay (s)	-	-	16.3	9.1	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1	0.1	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	45	322	90	672	50	620	19	885	485	255	405	9
Future Volume (vph)	45	322	90	672	50	620	19	885	485	255	405	9
Satd. Flow (prot)	1770	3422	0	3433	3539	1583	1770	3539	1583	1770	3529	0
Flt Permitted	0.950			0.950			0.492			0.091		
Satd. Flow (perm)	1770	3422	0	3433	3539	1583	916	3539	1583	170	3529	0
Satd. Flow (RTOR)		23				429			248		2	
Lane Group Flow (vph)	49	448	0	730	54	674	21	962	527	277	450	0
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8			2		1	6	
Permitted Phases						8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	16.5	16.5		16.5	16.5	16.5	16.0	16.0	16.0	15.0	16.0	
Total Split (s)	24.6	24.6		37.1	37.1	37.1	46.3	46.3	46.3	23.0	69.3	
Total Split (%)	18.8%	18.8%		28.3%	28.3%	28.3%	35.3%	35.3%	35.3%	17.6%	52.9%	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5	6.5	6.0	6.0	6.0	5.0	6.0	
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	None	None		None	None	None	Min	Min	Min	None	Min	
Act Effct Green (s)	17.8	17.8		29.9	29.9	29.9	38.9	38.9	38.9	62.4	61.4	
Actuated g/C Ratio	0.14	0.14		0.23	0.23	0.23	0.30	0.30	0.30	0.49	0.48	
v/c Ratio	0.20	0.91		0.91	0.07	0.97	0.08	0.90	0.81	0.92	0.27	
Control Delay	52.5	74.7		64.8	39.4	44.8	33.3	54.8	32.2	69.5	20.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.5	74.7		64.8	39.4	44.8	33.3	54.8	32.2	69.5	20.4	
LOS	D	E		E	D	D	C	D	C	E	C	
Approach Delay		72.5			54.7			46.6			39.1	
Approach LOS		E			D			D			D	
Queue Length 50th (ft)	37	190		313	18	249	13	408	230	179	115	
Queue Length 95th (ft)	77	#290		#423	37	#513	34	#509	388	#349	152	
Internal Link Dist (ft)		403			455			477			1006	
Turn Bay Length (ft)	150			335		210	170		125	115		
Base Capacity (vph)	250	504		821	846	705	288	1115	668	308	1748	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.20	0.89		0.89	0.06	0.96	0.07	0.86	0.79	0.90	0.26	

Intersection Summary
Cycle Length: 131
Actuated Cycle Length: 128.1
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.97

Intersection Signal Delay: 51.2 Intersection LOS: D
Intersection Capacity Utilization 89.5% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: 30th Street & Garden of the Gods Road



Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰	↑↑↑	↱			↱			↱
Traffic Vol, veh/h	0	1208	114	137	1195	36	0	0	133	0	0	12
Future Vol, veh/h	0	1208	114	137	1195	36	0	0	133	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	440	-	415	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1313	124	149	1299	39	0	0	145	0	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	1437	0	0	-	-	657	-	-	650
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	239	-	-	0	0	349	0	0	353
Stage 1	0	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	239	-	-	-	-	349	-	-	353
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	4.2	22.4	15.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	349	-	-	239	-	-	353
HCM Lane V/C Ratio	0.414	-	-	0.623	-	-	0.037
HCM Control Delay (s)	22.4	-	-	42.1	-	-	15.6
HCM Lane LOS	C	-	-	E	-	-	C
HCM 95th %tile Q(veh)	2	-	-	3.7	-	-	0.1

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	50	5	35	0	59	60	113	35	0	119	47	82
Future Vol, veh/h	50	5	35	0	59	60	113	35	0	119	47	82
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	5	38	0	64	65	123	38	0	129	51	89

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	703	638	96	659	682	38	140	0	0	38	0	0
Stage 1	354	354	-	284	284	-	-	-	-	-	-	-
Stage 2	349	284	-	375	398	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	352	394	960	377	372	1034	1443	-	-	1572	-	-
Stage 1	663	630	-	723	676	-	-	-	-	-	-	-
Stage 2	667	676	-	646	603	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	242	327	960	311	309	1034	1443	-	-	1572	-	-
Mov Cap-2 Maneuver	242	327	-	311	309	-	-	-	-	-	-	-
Stage 1	605	573	-	660	617	-	-	-	-	-	-	-
Stage 2	511	617	-	559	549	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.3	15.3	5.9	3.6
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1443	-	-	348	478	1572	-	-
HCM Lane V/C Ratio	0.085	-	-	0.281	0.271	0.082	-	-
HCM Control Delay (s)	7.7	0	-	19.3	15.3	7.5	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	1.1	1.1	0.3	-	-

Intersection	
Int Delay, s/veh	11.1

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	79	182	1137	86	44	1005
Future Vol, veh/h	79	182	1137	86	44	1005
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	86	198	1236	93	48	1092

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1925	665	0	0	1329	0
Stage 1	1283	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 59	403	-	-	515	-
Stage 1	224	-	-	-	-	-
Stage 2	486	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 54	403	-	-	515	-
Mov Cap-2 Maneuver	157	-	-	-	-	-
Stage 1	224	-	-	-	-	-
Stage 2	441	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	106	0	0.5
HCM LOS	F		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	273	515	-
HCM Lane V/C Ratio	-	-	1.039	0.093	-
HCM Control Delay (s)	-	-	106	12.7	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	11	0.3	-

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