Traffic Impact Analysis:

lancaster mobley

Stop N Save Development

Transportation Impact Study

Salem, Oregon

RENEWS: 6/30/2024

Date:
July 6, 2022

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Executive Summary

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2. The trip generation calculations show that the proposed project is projected to generate a total of 53 morning peak hour primary trips, 72 evening peak hour primary trips, and 1,062 average weekday primary trips.
3. No significant trends or crash patterns were identified at any of the study intersections that would be affected by the proposed development. Accordingly, no safety mitigation is recommended per the crash data analysis.
4. Preliminary traffic signal warrants are not projected to be met any of the unsignalized study intersections upon full buildout of the proposed development. Accordingly, no related mitigation is necessary or recommended.
5. Left-turn lanes are not projected to be met at the applicable intersections upon full buildout of the proposed development. Accordingly, no related mitigation is necessary or recommended.
6. All study intersections are currently operating acceptably per jurisdictional standards and are projected to continue operating acceptably through the 2024 site buildout year.

Project Description

Introduction

A gas station and retail space are proposed to be located on a 0.67-acre property (Tax Lot 082W06AB100000) in Salem, Oregon. The restaurant/retail space will encompass approximately 4,315 square feet, and the proposed gas station will be comprised of 8 fueling positions and a 300 square foot building which houses the cashier.

Based on correspondence with City of Salem, the report conducts safety and capacity/level of service analyses at the following intersections:

1. Hagers Grove Road SE at northern site access;
2. Hagers Grove Road SE at western site access;
3. Hagers Grove Road SE at southern site access; and
4. Lancaster Drive SE at Hagers Grove Road SE/Carson Drive SE.

The purpose of this study is to determine whether the transportation system within the vicinity of the site is capable of safely and efficiently supporting the existing and proposed uses, and to determine any mitigation that may be necessary to do so. Detailed information on traffic counts, trip generation calculations, safety analyses, and level of service calculations is included in the appendix to this report.

Location Description

The subject property is located east of Interstate 5 and south of Highway 22 (North Santiam Highway SE). The development will construct a site access along the northern property line and share the existing western and southern site access with the property to the south. Figure 1 on the following page shows the site vicinity with the subject site highlighted in red.

Figure 1: Vicinity Map

Vicinity Streets

The proposed development is expected to impact three roadways near the site. Table 1 provides a description of each vicinity roadway.

Table 1: Vicinity Roadway Descriptions

Street Name	Jurisdiction	Functional Classification	Cross-Section	Speed (MPH)	Curbs & Sidewalks	On-Street Parking	Bicycle Facilities
Lancaster Drive SE	City of Salem	Major Arterial	2-3 lanes	40 mph posted	Both sides	Not Permitted	Partial
Hagers Grove Road SE	City of Salem	Local Road	2 lanes	20 mph statutory	Partial both sides	Permitted	None
Carson Drive SE	City of Salem	Local Road	2 lanes	25 mph posted	Partial both sides	Permitted	None

Study Intersections

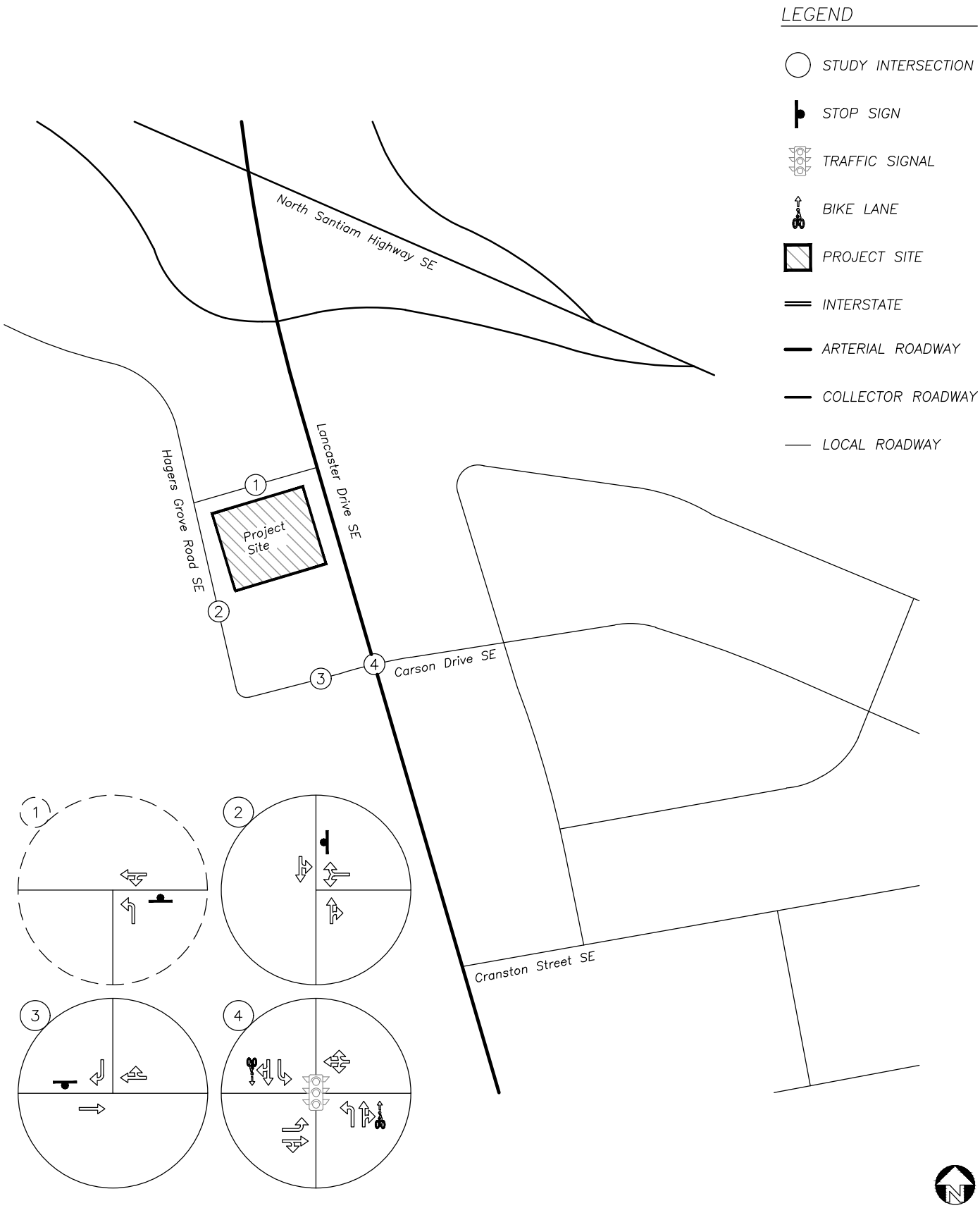
Based on coordination with City of Salem staff, four intersections were identified for analysis. A summarized description of these study intersections is provided in Table 2.

Table 2: Study Intersection Configurations

Intersection		Geometry	Traffic Control	Phasing/Stopped Approaches
1	Hagers Grove Road SE at northern site access	Three-Legged	Stop-Controlled	Northbound Stop-Controlled
2	Hagers Grove Road SE at western site access	Three-Legged	Stop-Controlled	Westbound Stop-Controlled
3	Hagers Grove Road SE at southern site access	Three-Legged	Stop-Controlled	Southbound Stop-Controlled
4	Lancaster Drive SE at Hagers Grove Road SE/Carson Drive SE	Four-Legged	Traffic Signal	Protected/Permitted with FYA North and Southbound Lefts, Permitted West and Eastbound Lefts

FYA = flashing yellow arrow

A vicinity map showing the project site, vicinity streets, and study intersection configurations is shown in Figure 2.



STUDY INTERSECTION CONFIGURATIONS

Figure 2
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Site Trips

Trip Generation

To estimate the number of trips that will be generated by the proposed use, trip rates from the *Trip Generation Manual*[1] were used. Trip generation for the proposed retail/restaurant use was estimated using data from land use code 932, *High Turnover Restaurant*, based on the building's gross floor area. Trip generation for the proposed gas station was estimated using data from land use code 944, *Gasoline Service Station*, based on the number of fueling positions.

Reductions at off-site intersections are taken to account for pass-by trips, which patronize retail/service uses within the site on the way to another destination. Since these trips would otherwise already be on the surrounding street system, they do not increase major-street volumes, but do affect turning movements at area intersections. Pass-by trip rates for land use codes 932 and 944 were used from the most recent edition of the *Trip Generation Manual*. Since no rate was given for land use code 932 during the morning peak hour, the evening pass-by rate was used for both peak hours.

The trip generation calculations show that the proposed project is projected to generate a total of 53 morning peak hour primary trips, 72 evening peak hour primary trips, and 1,062 average weekday primary trips. The trip generation estimates are summarized in Table 3. Detailed trip generation calculations are included as an attachment to this memorandum.

Table 3: Trip Generation Summary

		Morning Peak Hour			Evening Peak Hour			Weekday
Land Use – ITE Code	**Size**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**Total**
High Turnover Restaurant – 932	4,315 sq ft	22	19	41	24	15	39	462
Pass-by	*(43%/43%)*	*-9*	*-9*	*-18*	*-8*	*-8*	*-16*	*-198*
Gasoline Service Station – 944	8 FPs	41	41	82	55	56	111	1,376
Pass-by	*(63%/57%)*	*-26*	*-26*	*-52*	*-31*	*-31*	*-62*	*-578*
Total Trip Generation		63	60	123	79	71	150	1,838
Total Pass-By		*-35*	*-35*	*-70*	*-39*	*-39*	*-78*	*-776*
Primary Trips		28	25	53	40	32	72	1,062

[1] Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition, 2021.

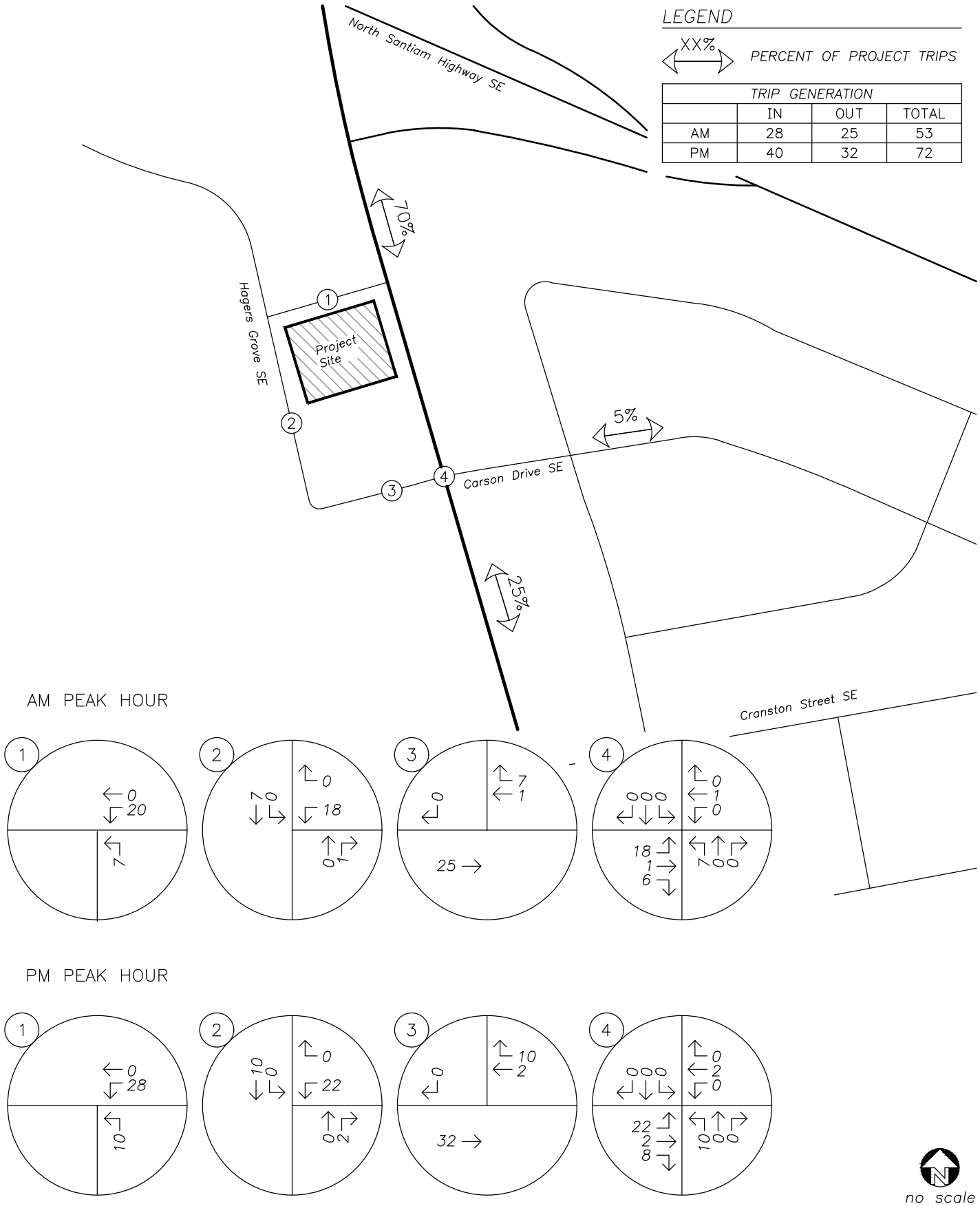
Trip Distribution

The directional distribution of site trips to/from the project site was estimated based on locations of likely trip destinations, locations of major transportation facilities in the site vicinity, and existing travel patterns at study intersections.

The following trip distribution is projected:

- Approximately 70 percent of entering/exiting site trips will travel from/to the north along Lancaster Drive SE;
- Approximately 25 percent of entering/exiting site trips will travel from/to the south along Lancaster Drive SE;
- Approximately 5 percent of entering/exiting site trips will travel from/to the east along Carson Drive SE.

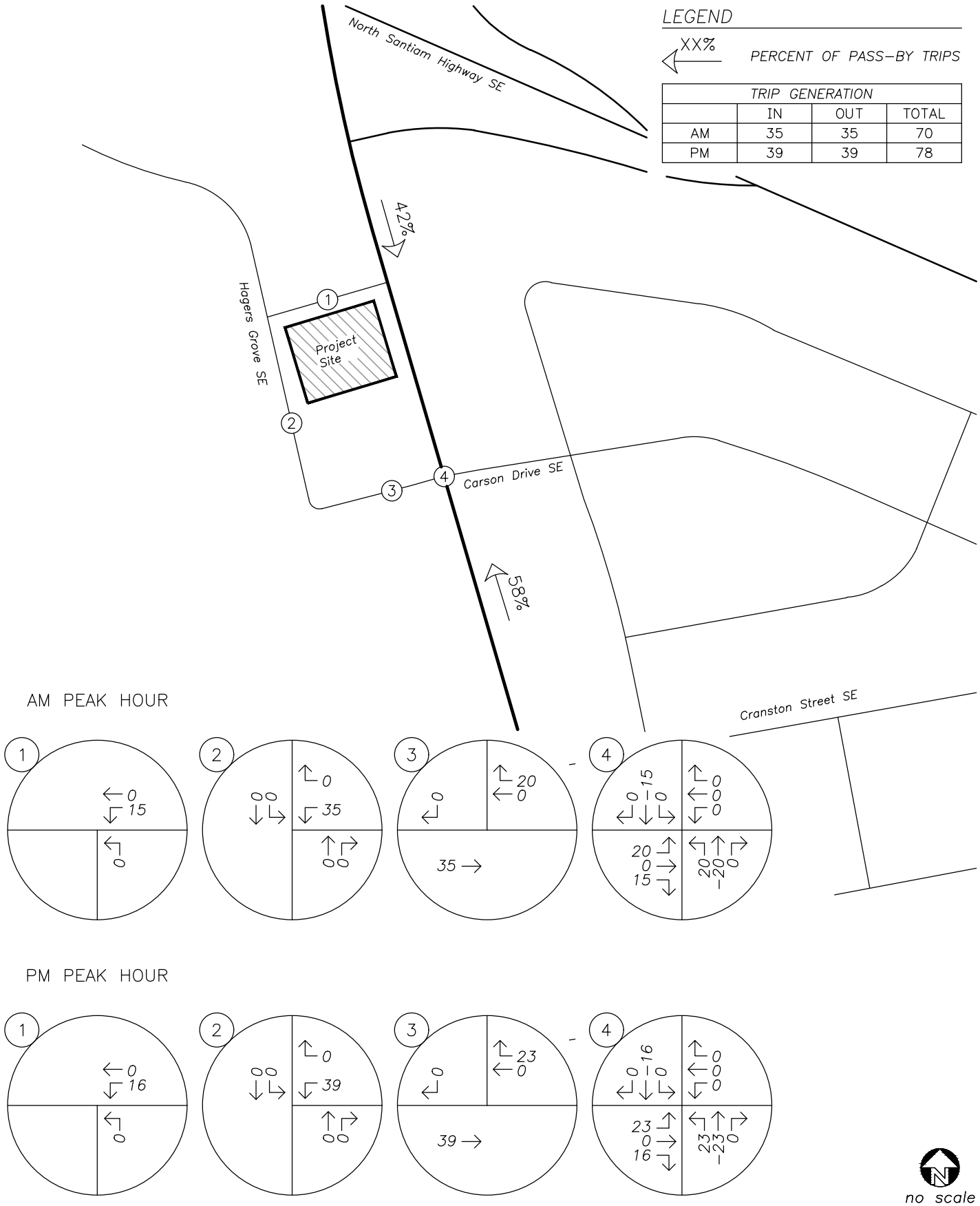
The trip distribution and assignment during the morning and evening peak hours is shown in Figure 3 for the primary trip generation and Figure 4 for the pass-by trip generation.



SITE TRIP DISTRIBUTION & ASSIGNMENT

Proposed Development Plan - Primary Site Trips
AM & PM Peak Hours

Figure 3
Stop N Save Development
7/6/2022



SITE TRIP DISTRIBUTION & ASSIGNMENT

Proposed Development Plan - Pass-By Site Trips
AM & PM Peak Hours

Figure 4
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Traffic Volumes

Existing Conditions

The ongoing COVID-19 pandemic is still causing a significant decrease in traffic due to closed or limited business operations and telecommuting. Therefore, historical data was used which was collected before the onset of the pandemic, with a growth rate applied to reflect the existing year 2022 traffic. This methodology was approved with the City during the scoping process.

Traffic counts were collected at all study intersections during the morning (between 7:00 AM and 9:00 AM) and evening (between 4:00 PM and 6:00 PM) peak hours on Wednesday, November 9th, 2016. Each intersection's peak hour was used for analysis. A compounded growth rate of two percent per year was applied to the 2016 traffic volumes to approximate year 2022 existing conditions.

Additionally, trips associated with the previously approved donut shop and convenience market were added as in-process traffic which would have been reflected in recent counts, had those been collected.

The existing traffic volumes at the study intersections during the morning and evening peak hours are shown in Figure 5.

Background Conditions

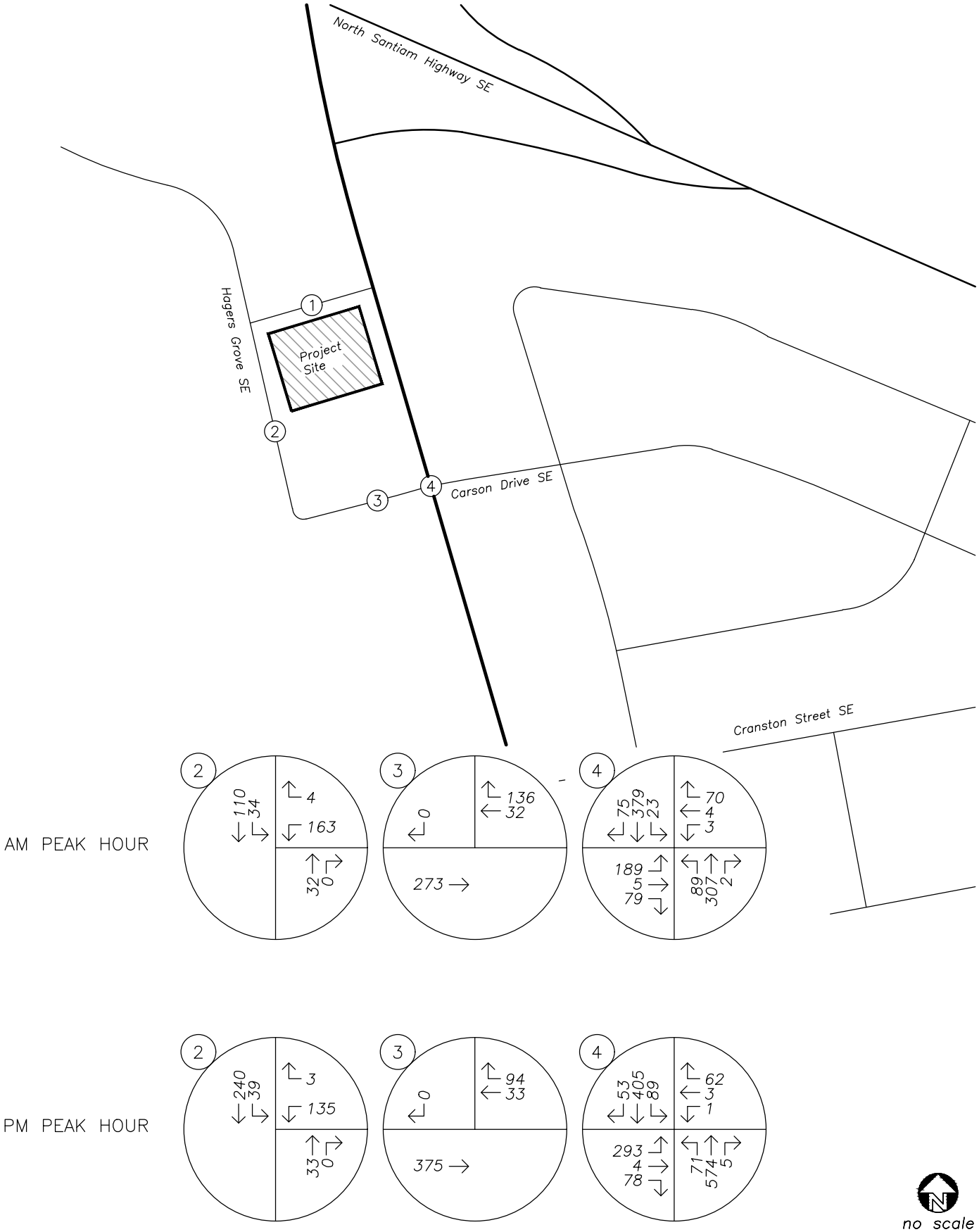
To provide analysis of the impact of the proposed development on the existing transportation facilities, an estimation of future traffic volumes is required. To calculate future traffic volumes for the year 2024 conditions, a compounded growth rate of two percent per year was applied. A build-out condition of two years was assumed.

The background traffic volumes at the study intersections during the morning and evening peak hours are shown in Figure 6.

Buildout Conditions

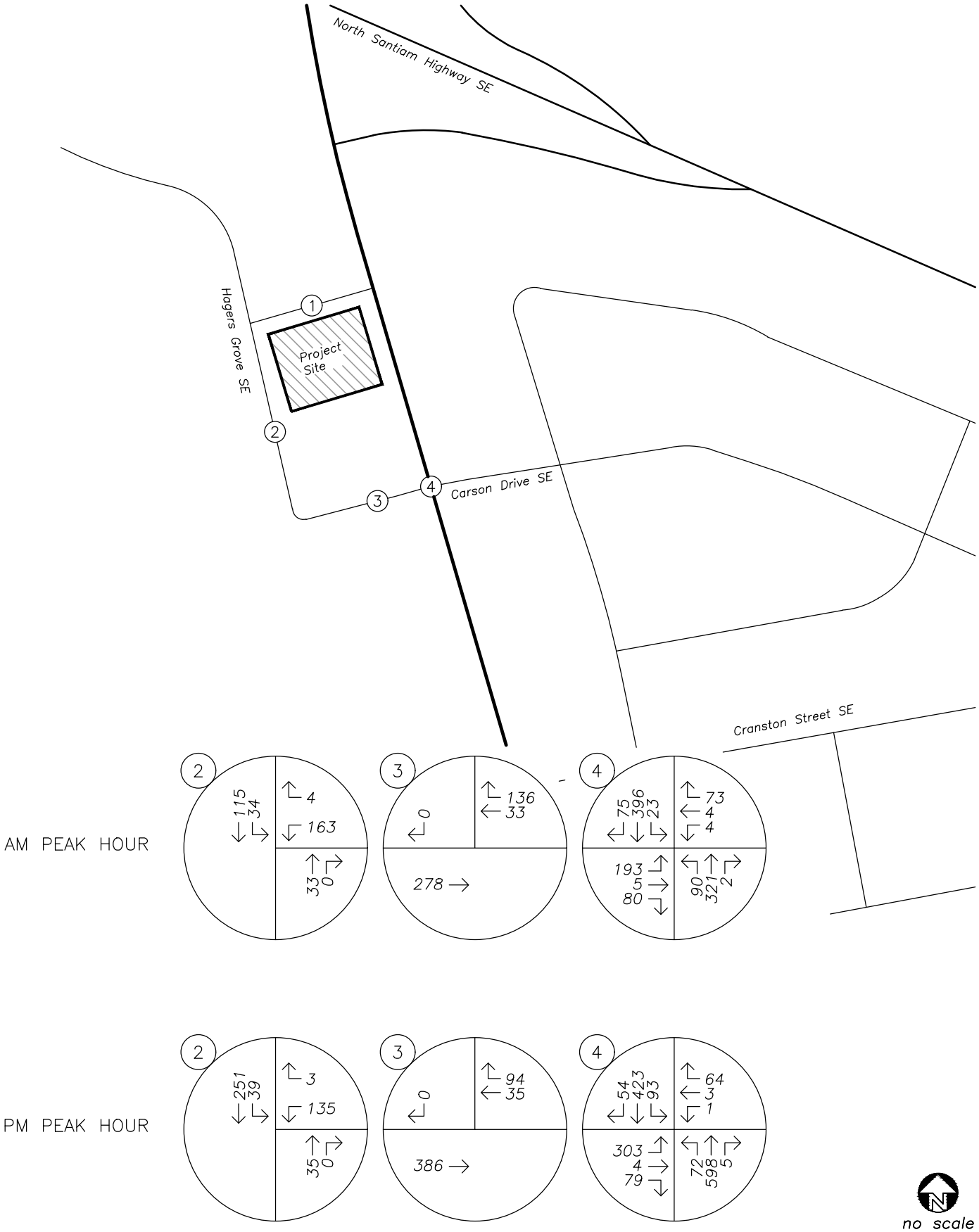
Peak hour trips calculated to be generated by the proposed development, as described earlier within the *Site Trips* section, were added to the projected year 2024 background traffic volumes to obtain the expected 2024 site buildout volumes.

The buildout traffic volumes at the study intersections during the morning and evening peak hours are shown in Figure 7.



TRAFFIC VOLUMES
Year 2022 Existing Conditions
AM & PM Peak Hours

Figure 5
Stop N Save Development
7/6/2022



TRAFFIC VOLUMES
Year 2024 Background Conditions
AM & PM Peak Hours

Figure 6
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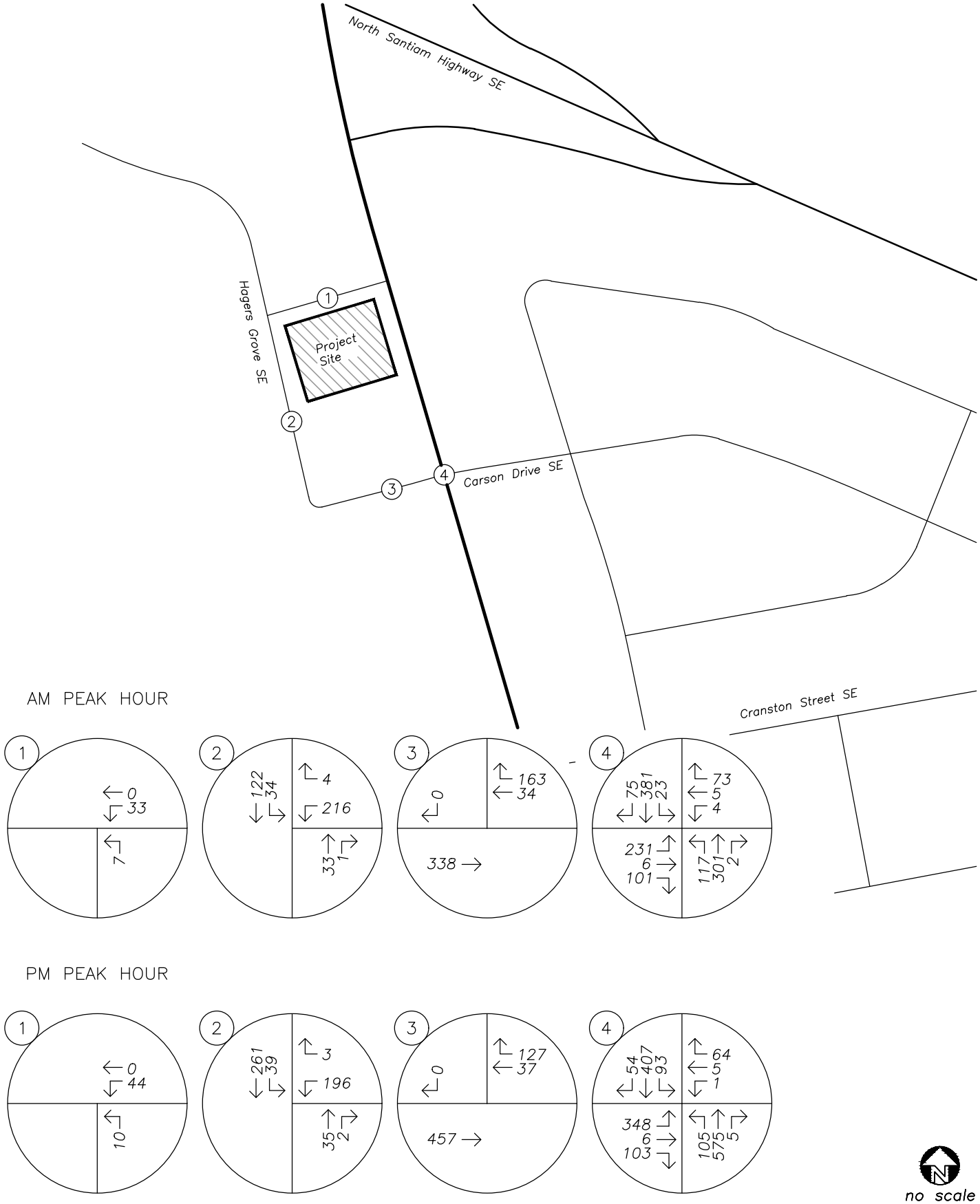
7/6/2022



TRAFFIC VOLUMES
2024 Buildout Conditions
AM & PM Peak Hours

Figure 7
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7/6/2022

Safety Analysis

Crash History Review

Using data obtained from ODOT's Crash Data System, a review of approximately five years of the most recent available crash history (January 2016 through December 2020) was performed at the study intersections. The crash data was evaluated based on the number of crashes, the type of collisions, and the severity of the collisions. Crash severity is based on injuries sustained by people involved in the crash, and includes five categories:

- Property Damage Only (PDO)
- Possible Injury (Injury C)
- Non-Incapacitating Injury (Injury B)
- Incapacitating Injury (Injury A)
- Fatality or Fatal Injury

Crash rates provide the ability to compare safety risks at different intersections by accounting for both the number of crashes that have occurred during the study period and the number of vehicles that typically travel through the intersection. Crash rates were calculated using the common assumption that traffic counted during the evening peak period represents approximately 10 percent of the annual average daily traffic (AADT) at the intersection.

Table 4 provides a summary of crash types while Table 5 summarizes crash severities and rates for each of the study intersections. Detailed crash data is provided in the appendix to this report.

Table 4: Crash Type Summary

Intersection		Crash Type								Total Crashes
		Turn	Rear End	Angle	Fixed Object	Side Swipe	Ped	Bike	Other	
4	Hagers Grove Road SE at Lancaster Drive SE	2	2	1	0	0	0	0	0	5

Table 5: Crash Severity and Rate Summary

Intersection		Severity					Total Crashes	Peak Hour Volume	Crash Rate
		PDO	C	B	A	Fatal			
4	Hagers Grove Road SE at Lancaster Drive SE	3	2	0	0	0	5	1,771	0.15

Based on review of the most recent five years of available crash data, no significant trends or crash patterns were identified at any of study intersections that would be affected by the proposed development. Accordingly, no safety mitigation is recommneded per crash data analysis.

Preliminary Traffic Signal Warrant Analysis

Traffic signal warrants were examined for all unsignalized intersections based on the methodologies in the Manual on Uniform Traffic Control Devices (MUTCD) published by the Federal Highway Administration in 2009. Volumes were used from the year 2024 buildout conditions. Warrant 1, Eight Hour Vehicular Volumes, was evaluated based on the common assumption that traffic counted during the evening peak hour represents ten percent of the ADT. Detailed information on the traffic signal warrant analysis is included in the attached appendix.

Preliminary traffic signal warrants are not projected to be met any of the unsignalized study intersections upon full buildout of the proposed development.

Left-Turn Lane Warrants

A left-turn refuge lane is primarily a safety consideration for the major-street, removing left-turning vehicles from the through traffic stream. The left-turn lane warrants were examined for all intersections in which site trips are expected to increase the major street left turn movement using methodologies provided within the National Cooperative Highway Research Program's (NCHRP) Report 457. Turn lane warrants were evaluated based on the number of advancing and opposing vehicles as well as the number of turning vehicles, the travel speed, and the number of through lanes.

Left-turn lane warrants are not projected to be met at the applicable study intersection under the year 2024 buildout scenario.

Operational Analysis

Intersection Capacity Analysis

A capacity and delay analysis were conducted for each of the study intersections per the unsignalized intersection analysis methodologies in the *Highway Capacity Manual* (HCM)[2]. Intersections are generally evaluated based on the average control delay experienced by vehicles and are assigned a grade according to their operation. The level of service (LOS) of an intersection can range from LOS A, which indicates very little, or no delay experienced by vehicles, to LOS F, which indicates a high degree of congestion and delay.

Performance Standards

According to the City of Salem's Transportation System Plan (TSP), the City shall allow its existing streets and intersections to function at LOS E during the morning and evening peak travel hours. However, traffic impacts created by new development, as identified in a traffic impact analysis, must be mitigated to maintain peak hour LOS D or better

Delay & Capacity Analysis

The LOS, delay, and v/c results of the capacity analysis are shown in Table 6 for the evening peak hour. Detailed calculations as well as tables showing the relationship between delay and LOS are included in the appendix to this report.

[2] Transportation Research Board, *Highway Capacity Manual 6th Edition*, 2016.

Table 6: Capacity Analysis Summary

Intersection & Condition	AM Peak Hour			PM Peak Hour		
	LOS	Delay (s)	V/C	LOS	Delay (s)	V/C
1. Hagers Grove Road SE at Northern Site Access						
Year 2024 Buildout Conditions	A	9	0.01	A	9	0.01
2. Hagers Grove Road SE at Western Site Access						
Year 2022 Existing Conditions	B	11	0.24	B	13	0.25
Year 2024 Background Conditions	B	12	0.25	B	13	0.25
Year 2024 Buildout Conditions	B	12	0.33	B	15	0.37
3. Hagers Grove Road SE at Southern Site Access						
Year 2022 Existing Conditions	A	9	0.01	A	9	0.01
Year 2024 Background Conditions	A	9	0.01	A	9	0.01
Year 2024 Buildout Conditions	A	9	0.01	A	9	0.01
4. Hagers Grove Road SE at Lancaster Drive SE						
Year 2022 Existing Conditions	B	14	0.77	B	14	0.82
Year 2024 Background Conditions	B	15	0.79	B	14	0.85
Year 2024 Buildout Conditions	B	16	0.86	B	17	0.89

Based on the results of the operational analysis, all study intersections are currently operating acceptably per jurisdictional standards and are projected to continue operating acceptably through the 2024 site buildout year. No operational mitigation is necessary or recommended at these intersections.

Conclusions

Key findings include:

- No significant trends or crash patterns were identified at any of the study intersections that would be affected by the proposed development. Accordingly, no safety mitigation is recommended per the crash data analysis.
- Preliminary traffic signal warrants are not projected to be met any of the unsignalized study intersections upon full buildout of the proposed development. Accordingly, no related mitigation is necessary or recommended.
- Left-turn lanes are not projected to be met at the applicable intersections upon full buildout of the proposed development. Accordingly, no related mitigation is necessary or recommended.
- All study intersections are currently operating acceptably per jurisdictional standards and are projected to continue operating acceptably through the 2024 site buildout year.

Appendix A – Site Data

Site Plan

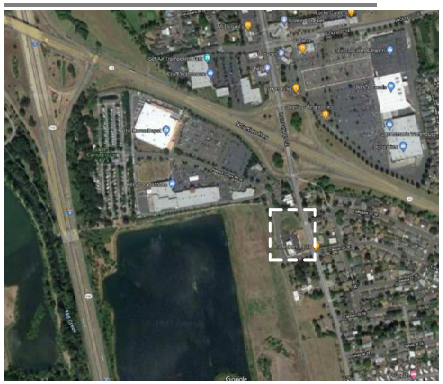
Trip Generation Calculations

Stop-N-Save Gas

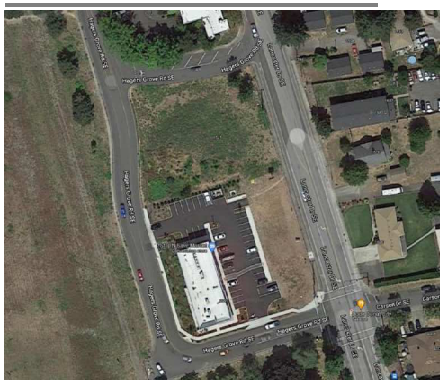
New Gas Station and C-Store

3997 Carson Dr SE Salem OR 97317

VICINITY IMAGE:



SITE IMAGE:

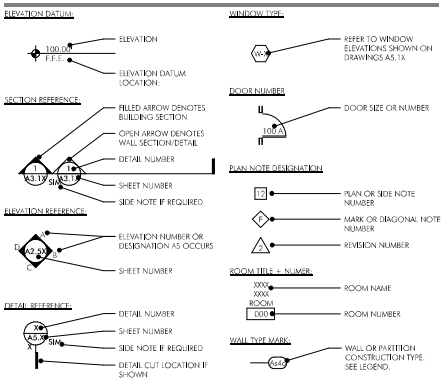


DRAWINGS LIST:

Sheet Number	Sheet Name	Sheet Issue Date	Current Revision	Revision Description
GENERAL DRAWINGS				
G0.01	COVER SHEET	01/09/2020		
G0.02	GENERAL NOTES	01/09/2020		
G3.01	PERSPECTIVE VIEWS	01/09/2020		
CIVIL ENGINEERING DRAWINGS				
C2.0	GRADING AND DRAINAGE PLAN	01/17/22		
C3.0	UTILITY PLAN	01/17/22		
ARCHITECTURAL DRAWINGS				
A1.01	SITE PLAN	01/09/2020		
A1.02	SITE PLAN - EXISTING CONDITIONS	01/12/22		

Sheet Number	Sheet Name	Sheet Issue Date	Current Revision	Revision Description

SYMBOL LEGEND:



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PROJECT # 2020-109
DATE: 01/17/2022
REVISIONS

Stop-N-Save Gas
New Gas Station
3997 Carson Dr SE Salem OR 97317

SHEET:
G0.01

GENERAL NOTES:

1. General notes apply to all drawings.
2. All construction shall comply with the Oregon Structural Specialty Code. Construction shall comply with any titles/rules/laws the local jurisdiction enforces up to and beyond the Oregon Structural Specialty Code. Accessibility shall comply with the ANSI/ICC A117.1.
3. Contractor or its subcontractors shall be responsible for obtaining and paying for all inspections and tests required by any government agency to implement the plans and accept any required special inspections or reports, which shall be paid for by the owner.
4. Work shown on these drawings is to be supplied, furnished, constructed, installed all as per the general conditions and the specifications: exceptions as described by the following abbreviations:
   a. CFCI Contractor Furnished - Contractor Installed
   b. OFCI Owner Furnished - Contractor Installed
   c. OFOI Owner Furnished - Owner Installed
   d. NIC OR N.I.C. Not in contract or not a part of this contract.
5. Do not scale drawings, dimensions govern. The general contractor shall notify the architect of any discrepancies immediately. All dimensions are to face of stud or concrete, unless otherwise noted, those indicated as clear shall be from finish.
6. These drawings have been assembled for use at their current size and scale. The contractor assumes all responsibility for work not conforming to these documents due to the use of reduced scale drawings for estimating or construction purposes.
7. Where construction details are not shown or noted for any part of the work, the work shall be executed consistent with the intent demonstrated by details provided for other work. If questions remain about intent, contact the architect prior to proceeding with the work.
8. All surfaces and materials shall be thoroughly prepared smooth, clean, level and even. By commencing finish installation, the finish contractor signifies its acceptance of the substrate and thereby assumes responsibility for the quality of the installation.
9. Where devices or items or parts thereof are referred to in singular, it is intended that such shall apply to as many such devices, items, or parts as are required to properly complete the work.
10. The contractor shall layout the work prior to proceeding. The contractor shall notify the architect of all discrepancies with the layout. Such inspection shall not relieve the contractor of responsibility to conform to the intent of the contract documents.
11. Unless otherwise noted, dimensions, placements and alignments shown are critical for the installation of furniture and equipment as well as for the use of the space by occupants. Finished dimensions may vary upward by ½" but may not vary downward. Where +/- is indicated variation of up to 3% shall be allowable. Alignments of new and existing conditions shall be finished to a smooth and monolithic appearance (gap shall be overlapped to an inside or outside corner where practicable to avoid cracking).
12. Do not deviate from the construction documents without the architect's written approval. The contractor agrees to defend indemnify and hold harmless the architect from any claims arising as a result of changes to the work without prior approval from the architect.
13. The general contractor shall be responsible for the timely arrival of all specified finish materials, equipment and any other materials to be utilized on the project. The general contractor shall notify the architect in writing within 10 days of date of contract of those specified items that may not be readily available and substitute items of equal quality and description. If notification is not received by the architect, the contractor accepts responsibility for the proper ordering and follow up of specified cost to the owner to insure availability of all specified items so as not to create a hardship on the owner nor delay progress of the work.
14. If required construction barriers shall be installed by the general contractor, painted, detailed, and illuminated as per the architect's direction. No signs other than those authorized by the architect or owner will be permitted on this barricade.
15. Neither the owner nor the architect will enforce safety measures or regulations. The contractor shall design, install and maintain all safety devices and shall be solely responsible for conforming to all local, state and federal safety and health standards, laws and regulations.
16. All existing facilities to be maintained in-place by the contractor unless otherwise shown or directed. Contractor shall take all precautions necessary to support, maintain or otherwise protect existing utilities and other facilities at all times during construction. Contractor shall leave existing facilities in an equal or better-than-original condition and to the satisfaction of the architect/owner.
17. The general contractor shall locate all existing utilities whether shown hereon or not and to protect them from damage. The general contractor shall bear all expenses of repair or replacement of utilities or other property damaged by operations in conjunction with the execution of his/her work.
18. The general contractor shall secure all permits required by the local jurisdiction, state agency and/or county.
19. Mechanical hvac, plumbing, fire suppression, low voltage and electrical work require separate permits. Trade subcontractors shall secure all required permits affecting their scope of work.
20. Exit doors shall be operable from the inside without the use of a key or any special knowledge or effort. Exit doors shall swing in the direction of exit travel when serving an occupant load greater than 50.
21. Install wall backing for all wall mounted items, including but not limited to the following: door stops, fixtures, wall cabinets, shelving, counters, toilet accessories, security equipment, hand rails, window covering tracks, equipment racks, etc.
22. Coordinate location of recessed or semi-recessed items to avoid back to back installation and to reduce noise transfer through partitions.
23. Provide water resistant gypsum board at bathtub/shower walls and bathroom ceilings.
24. Architect shows fire extinguishers in general logical location: verify requirements and locations with local fire marshal. General contractor to provide fire extinguishers and cabinets (where called out).
25. Specifications of material and equipment by the use of name, model number, and/or general coordinate installations with equipment dimensions, including equipment to be installed by the tenant.
26. All work shall conform to standards of the industry for first quality workmanship and materials and shall conform to manufacturer's recommendations and specifications.
27. Materials are specified by name, model number and description were practicable in order to avoid inaccuracies. The contractor shall review all specifications and notify the architect of any discrepancies in these documents prior to proceeding with the work.
28. Floor material changes shall occur at the centerline of doors except where notes. See threshold details for special conditions (if any).
29. Blocking and grounds at areas which have millwork, shelving, and tenant furnished furniture wall cabinets indicated on the drawings shall be included with the work.

SUBMITTALS:

1. General: the contractor shall submit shop drawings, product data and samples.
2. The general contractor shall thoroughly review and check all submittals, coordinating separate trades and verifying conformance with the contract documents. The designer shall not review and will return without review any drawings or submittals not reviewed and noted by the general contractor.
3. Submittals shall include shop drawings, schedules and manufacturer's product and equipment cuts for all fixtures, equipment, finishes, special materials, specialties, millwork & casework, doors, frames, and hardware.
4. Finish materials: contractor shall submit samples of all finishes and materials, finishes shall be on actual materials.
5. Cut sheets: contractor shall submit manufacturer's cuts and spec sheets for all fixtures, including lighting, equipment, special materials, specialties, doors, frames and hardware.
6. Minimum sample size:
   a. Wood veneered products - 8 ½" x 11" x ¼"
   b. Solid lumber - 50 square inches
   c. Other finishes and miscellaneous materials - 6" x 6"
7. Quantity of submittals:
   a. Material samples: 3
   b. Shop drawings: 1 pdf
   c. Erection drawings: 1 pdf
8. Submittal markings: the samples shall bear identification of the project, designer, general contractor, and the manufacturer.
9. Quality grade of millwork and casework: AWI quality standards and specifications shall govern according to the following grades:
   a. Casework: Premium Grade
   b. Natural finish millwork: Premium Grade
   c. Running trim: Custom Grade
   d. Architectural flush doors (natural finish): Premium Grade

DEFERRED SUBMITTALS:

1. Deferred submittal review process: the portions of the project listed below will be constructed using a design/build approach.
2. The drawings included in this package are preliminary to provide a basis for bidding and planning.
3. Construction drawings for the portions listed are to be provided by the contractor as "deferred submittal" drawings.
4. "Deferred submittal" drawings require approval of both architect/engineer and the authority having jurisdiction prior to construction per O.S.S.C. paragraph 107.3.4.2.
5. The procedure for deferred submittal is as follows:
   a. Contractor to review and provide submittal stamp of approval.
   b. Deferred submittal shall be submitted to the architect for review.
   c. Following the completion of the architects review the contractor shall submit to the authority having jurisdiction.
   d. Work related to deferred submittal items shall not be performed until the deferred submittal documents have been approved by the authority having jurisdiction.
6. The contractor is responsible for the following deferred submittals:
   a. Electrical service design
   b. Mechanical HVAC (Heating Ventilating And Air Conditioning) system design
   c. Plumbing service design
   d. Fire suppression
   e. Fire alarm (where applicable)
7. Design-build coordination, design build services shall include but not be limited to the following:
   a. Electrical system and service design
   b. Mechanical HVAC (Heating Ventilating And Air Conditioning) system design
   c. Plumbing system and service design
   d. Fire suppression
   e. Fire alarm (approved first by general contractor)
8. Final design, engineering and shop drawings shall be submitted to architect for review and approval prior to proceeding, shop drawings shall include all materials, configurations, attachments, and finishes.

DESIGN-BUILD NOTES:

1. Design/Build - mechanical/electrical/plumbing/sprinkler.
2. Design/Build services shall be required of the Contractor for the Mechanical, Electrical, Plumbing, and Sprinkler portions of the work. All systems new and existing shall be designed, modified, provided and/or installed as required by the new layout. Contractor shall submit design drawings and product submittals for all design/build systems to the designer and the building for review and approval.
3. Conform to applicable codes, ordinances, specific building standards and industry standards for first class installations of all systems. Comply with building and lease specific requirements for emergency lighting, electrical service and sub-metering (contractor shall be responsible for the verification of adequacy of service and panel space). Contractor shall field verify and confirm with the building prior to submitting their bid for the work.
4. Contractors shall be responsible for all design and documentation (including required design documents professionally sealed by an engineer where and as required by the local jurisdiction) as may be required for the full and complete installation of HVAC, power, lighting and sprinkler systems, as well as applying and obtaining all permits, approvals, inspections and certificates required for the completion of the project for occupancy.
5. Contractor shall submit HVAC design drawings and product submittals to the designer and the building for review and approval, including clear indications of zones, locations of supply and return diffusers and thermostat locations. Contractor shall provide HVAC balancing report in triplicate to the architect and the building upon completion of the installation and balancing.
6. Fire suppression system: contractor shall modify existing fire suppression system consistent with requirements of code, new use, NFPA, and owner's insurance underwriter. Submit shop drawings for approval of building's engineer.
7. Sprinkler head types:
   a. At gypsum board ceiling: fully recessed flush mounted type with white cover plates.
   b. At suspended acoustic tile ceiling: centering not required, maintain min 6" from grid.
8. Contractor shall be responsible for complete as-built documents at the completion of the project and shall submit reproducible copies to the landlord for their records.

R.C.P. GENERAL NOTES:

1. Light fixtures, exit signs and other ceiling elements shall be located in center of individual ceiling plane or tile unless noted otherwise or as directed by architect.
2. Provide ceiling access as required for equipment and systems maintenance. Verify manufacturer recommendations.
3. Electrical contractor to provide all switches, dimmers and plates as required by design, multiple switches at one location shall be ganged together and furnished with one cover plate.
4. The reflected ceiling plan indicates the location of ceiling types, ceiling fixtures light switches and associated items.
5. Contractor to notify architect of any conflict of light fixture locations with main runners, ducts, etc. Prior to installation.
6. Verify field conditions and locations of all plumbing, mechanical ducts, structural elements and any and all other applicable items. Install new plumbing, mechanical fans, ducts, conduits, and other related items so as to not conflict with lights and any unique field conditions.
7. Furnish and install Underwriters Laboratory, Inc. (UL) labeled devices throughout.
8. Any lighting control systems which utilize an automatic time switch, occupant-sensing device, automatic daylight control device, lumen maintenance control device or interior photocell sensor, shall be installed in accordance with the manufacturers instruction.
9. Automatic daylight control devices and lumen maintenance control devices shall only control luminaries in the day lit area and have photocell sensors that are either ceiling mounted or located so that they are accessible only to authorized personnel.

PLUMBING MECHANICAL GENERAL NOTES:

1. Plumbing systems work for this project is shown for design-build guidance.
2. Plumbing fixtures are located on drawings for location only. Confirm fixture selection with owner prior to installation.
3. Equipment schedule does not specify any plumbing fixtures such as grease traps, faucets, pressure reducing valves, etc. Nor does it include final connection to service. Plumbing contractor to provide if necessary.
4. Contractor or its subcontractors shall be responsible for obtaining and paying for all inspections and tests required by any governmental agency to implement the plans and accept any required special inspections or reports, which shall be paid for by the owner.
5. Plumbing requirements shown only for items listed on equipment schedule.
6. Plumbing contractor to provide rough-in and final connect.
7. Although some floor drains may be shown on plans, provide all required floor drains per the plumbing code.

HVAC MECHANICAL GENERAL NOTES:

1. Mechanical HVAC work for this project is shown for design-build guidance.
2. Mechanical HVAC work for this project consists in exhaust fans and duct work as well as any code mandated ventilation.
3. Exhaust fans and circulation fans are located on drawings for general location only. Sizing is the responsibility of the design build contractor. Confirm equipment selection with owner prior to installation.
4. HVAC subcontractor to provide submittal information and receive owner approval prior to ordering equipment.
5. Contractor is required to review the drawings of all divisions of work contractor is responsible for coordination of this work and the work of all subcontractors with all divisions of work. It is this contractor's responsibility to provide all the subcontractors with a complete set of bid documents.
6. Contractor or its subcontractors shall be responsible for obtaining and paying for all inspections and tests required by any governmental agency to implement the plans and accept any required special inspections or reports, which shall be paid for by the owner.
7. The contractor shall furnish and install any additional structural steel required to support any mechanical equipment. This contractor shall coordinate locations and requirements with the general contractor and landlord prior to bid.

ELECTRICAL GENERAL NOTES:

1. Electrical work for this project is shown for design-build guidance.
2. Light fixtures and electric heating devices are located on drawings for general location only. Sizing of lumen output and power consumption is the responsibility of the design build contractor. Confirm fixture selection with owner prior to installation.
3. Contractor and subcontractors are required to review the drawings for all divisions of work. Contractor is responsible for coordination of this work and the work of all subcontractors with all divisions of work including electrical demolition. It is this contractor's responsibility to provide all the subcontractors with a complete set of bid documents.
4. Contractor or its subcontractors shall be responsible for obtaining and paying for all inspections and tests required by any governmental agency to implement the plans and accept any required special inspections or reports, which shall be paid for by the owner.
5. Electrical information provided on architectural floor plans is for reference only, electrical design build sub-contractor to confirm and coordinate all work.
6. Placement of light fixtures in ceiling planes takes precedence over all other services including fire protection or suppression devices.
7. Placement of receptacles, convenience outlets, switches, smoke detectors, etc must meet electrical code requirements, accessibility requirements and must be rationally laid out in the space available.
8. Circuiting indicated on plan is partially diagrammatic for clarity. Circuiting shall be "thru-wiring" where and whenever possible.
9. Field verify exact location and electrical requirements of all HVAC equipment with mechanical contractor prior to ordering related electrical equipment.
10. Coordinate with tenant's equipment power requirements.
11. Electrical contractor shall make all final connections as required for a fully complete and operable system.
12. All stub-up dimensions from finished floor to center of box.
13. Equipment listed on equipment schedule will be uncrated and set in place only. Rough in and final hookup will performed by the electrical contractor.
14. All electrical outlets and connections to be grounded type.
15. Electrical contractor to furnish disconnects where code requires.
16. Equipment listed on the equipment schedule does not include electrical fittings such as relays or disconnects to the electrical service.
17. Plugs should enter receptacle from the dimension side of symbols unless noted otherwise.

REFUELING CANOPY - DESIGN BUILD NOTES:

1. These drawings provide the general configuration of the re-fueling canopy only, inducing general size and clear height.
2. Design Build contractor is responsible for structural engineering of the canopy system including foundations, in accordance with the Oregon Structural Specialty Code, (OSSC).
3. Design Build contractor is responsible for fabrication and erection of components, including branding elements, for a complete refueling canopy system.
4. Prepare design and erection drawings under seal of a structural engineer registered in the State of Oregon.
5. Apply for permits associated with the erection of the canopy system.
6. Design canopy to collect and direct storm water to the site storm drainage system.
7. Provide canopy lighting to illumination standard required by the the fueling brand.
8. Coordinate electrical work and requirements with the owner and sitework contractor.

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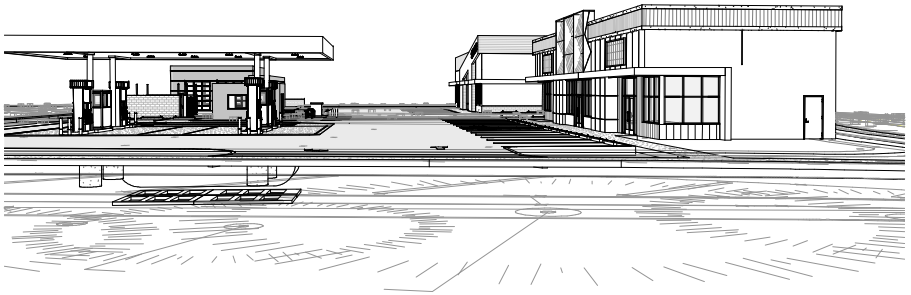
DATE: 01/17/2022
REVISIONS

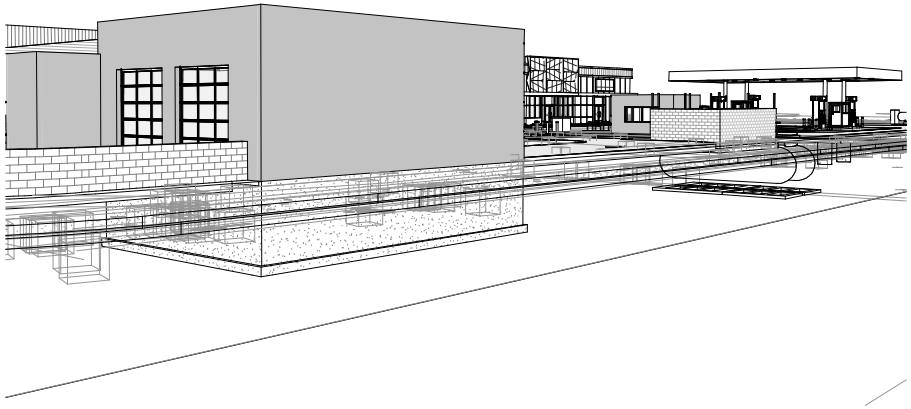
Stop-N-Save Gas
New Gas Station
3997 Carson Dr SE Salem OR 97317

SHEET:
G0.02

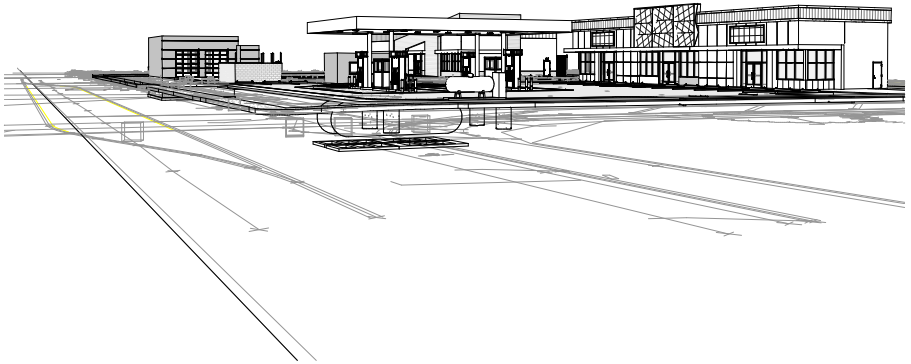
1 3D View 3



2 3D View 4



4 3D View 1



3 3D View 2

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SHEET:
G3.01

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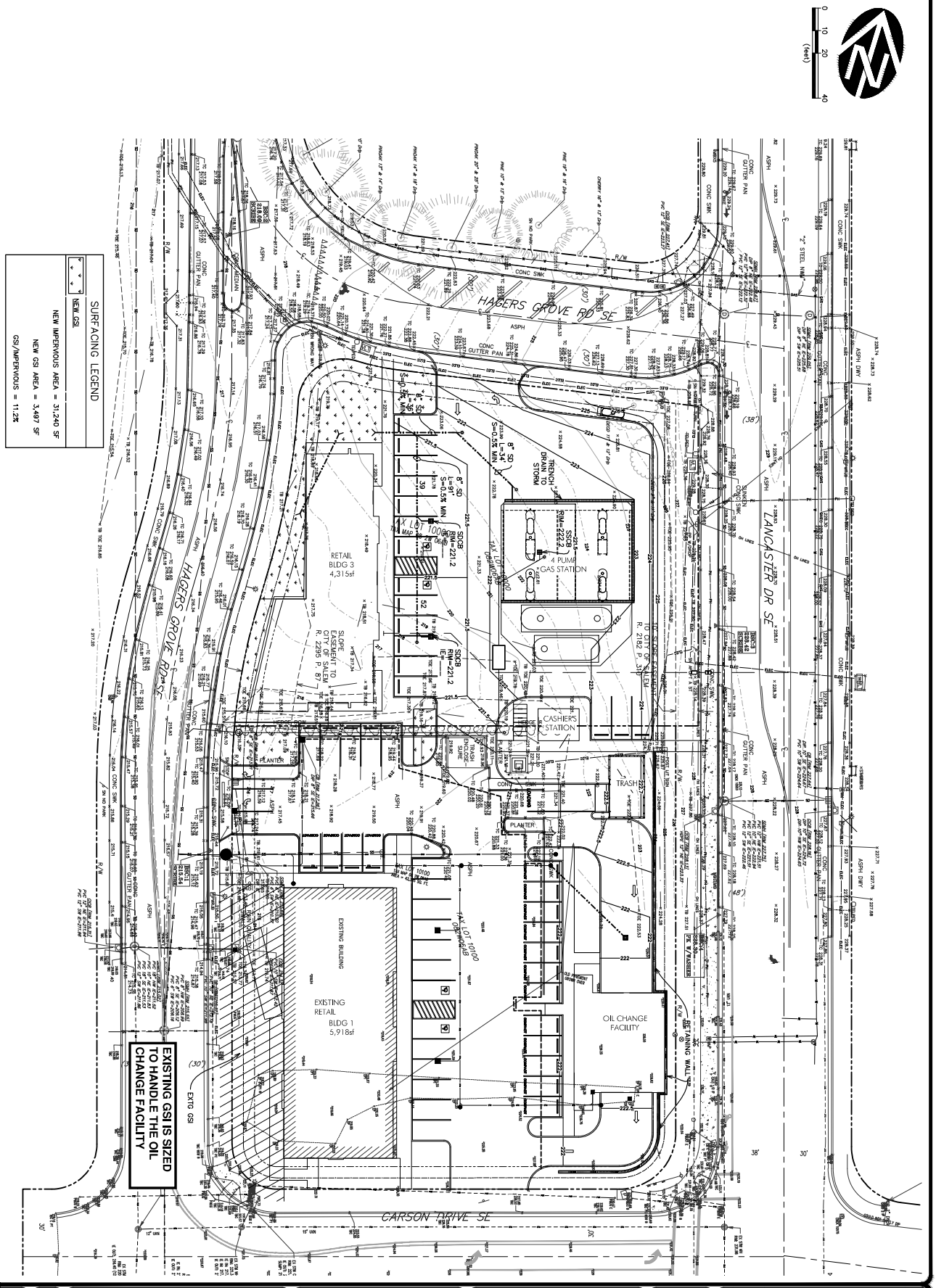

STUDIO3 ARCHITECTURE

STOP 'N' SAVE HAGERS GROVE

GRADING & DRAINAGE PLAN

DRAWING C2.0

JOB NUMBER 3265.00000.0

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302
Phone: (503) 585-2474 Fax: (503) 585-3986
E-mail: westech@westech-eng.com

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 12, 2005
WILLIAM J. WELLS
RENEWS: 6/30/2022

REVIEW

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DSN.	JW
DRN.	AK
CKD.	JW
DATE:	01/2022

NO.	DATE	DESCRIPTION	BY
1		REVISIONS	

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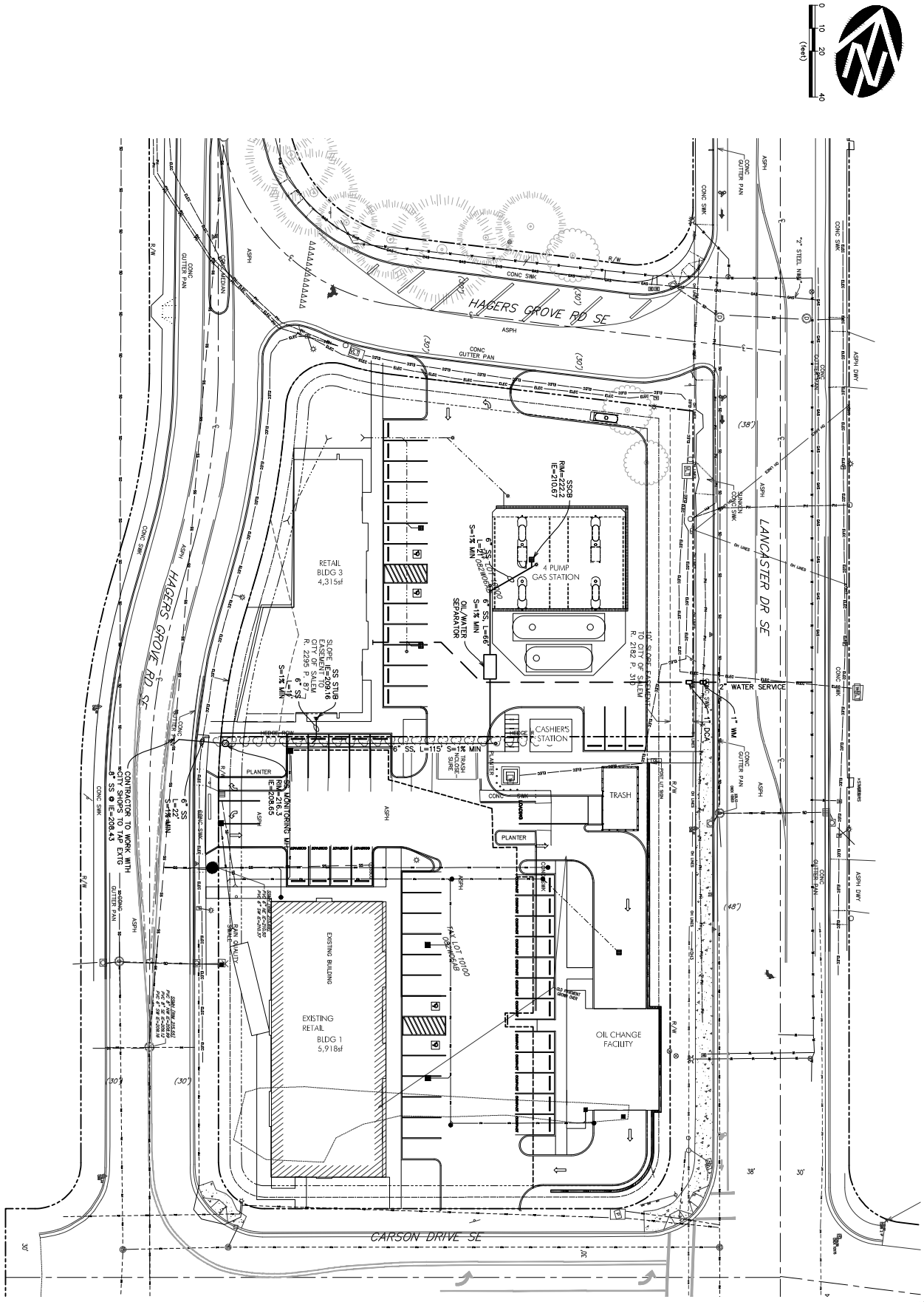

STUDIO3 ARCHITECTURE

STOP 'N' SAVE HAGERS GROVE

UTILITY PLAN

DRAWING C3.0

JOB NUMBER 3265.00000.0

WESTECH ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS
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Phone: (503) 585-2474 Fax: (503) 585-3986
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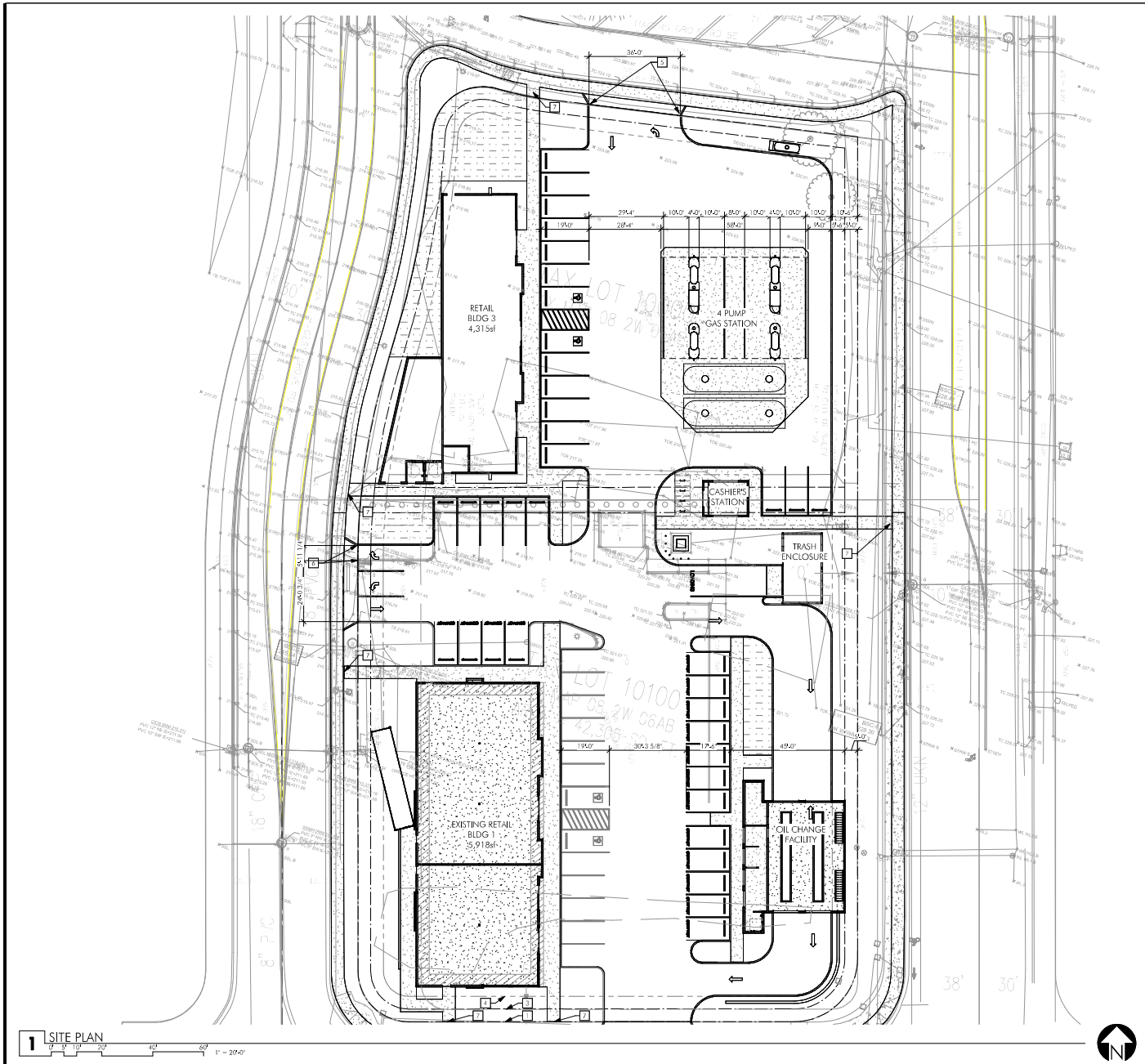

1 SITE PLAN
0' 5' 10' 20' 40' 60' 1" = 20'-0"

SITE PLAN GENERAL NOTES:

- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVES. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTORS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
- PROVIDE CONSTRUCTION FENCING AS REQUIRED TO SECURE SITE AND BUILDING DURING CONSTRUCTION.
- EXTREME CARE SHOULD BE TAKEN TO PRESERVE EXISTING ROOTS OF TREES TO REMAIN.
- REFER TO CIVIL DRAWINGS FOR GRADING. SITE IS REQUIRED TO MEET THE LAWS OF FHA AND ADA. ACCESSIBLE ROUTES SHALL NOT EXCEED 5% (1 IN 20) OR CROSS SLOPES SHALL NOT EXCEED 2% (1 IN 50). ALL AT GRADE SIDEWALKS ARE ACCESSIBLE ROUTES.
- JOINTS IN CONCRETE WALKS NOTED AS E.J. ARE TO BE CONSTRUCTED AS EXPANSION JOINTS. ALL OTHER JOINTS SHOWN, TO BE TOOLED CONTROL JOINTS, SEE CIVIL.
- SEE LANDSCAPE DRAWINGS FOR LANDSCAPE AND IRRIGATION ELEMENTS.
- SEE ELECTRICAL DRAWINGS FOR SITE LIGHTING.

SITE DEVELOPMENT CODE REVIEW:

SITE AREA: 67,798.91 sf = 1.5564ac

ZONING: CR Commercial Retail

COMPREHENSIVE PLAN: COM

BUILDING AREAS:
- BLDG 1 RETAIL: 5,918 sf
- BLDG 2 RETAIL: 4,315 sf
- BLDG 3 FUEL CASHIER: 252 sf
- BLDG 4 OIL CHANGE: 1,888 sf
- TRASH ENCLOSURE: 480 sf

PARKING:
- COMMERCIAL USES: 1/250sf REQ'D
- MOTOR VEHICLE SERVICES: 1/900sf REQ'D
- BLDG 1 RETAIL: @ 5,918sf/250sf = 23.672spaces
- BLDG 2 RETAIL: @ 4,315sf/250sf = 17.260spaces
- BLDG 3 CASHIER: @ 252sf/900sf = 0.280spaces
- BLDG 4 OIL: @ 1,888sf/900sf = 2.098spaces
- FUEL CANOPY: @ 2,320sf/900sf = 2.577spaces

Total Parking Req'd = 45.88spaces.
Total Parking Provided: = 50spaces.
16 spaces, Compact, 34 spaces Full Size.

BIKE PARKING:
- 1 SPACES PER 3,500 sf, or MINIMUM 4 SPACES.
- THEREFORE PROVIDE 4 BIKE PARKING SPACES.

LOADING SPACES:
- FOR BUILDINGS BETWEEN 5,000 sf TO 60,000 sf PROVIDE 1 SPACE:
- LOADING SPACE SIZE: 12'-0" x 19'-0" WITH ACCESS TO STREET OR ALLEY.

SITE AREA CALCULATIONS

DESCRIPTION	AREA sf	PERCENT	REMARKS
BUILDINGS	12,373.00	18.25%	
LANDSCAPING	13,881.45	20.47%	
ASPHALT PAVING	31,044.56	45.79%	
ACCESSORY STRUCTURES	448.00	0.66%	TRASH ENCLOSURE
CONCRETE SIDEWALKS	5,281.94	7.79%	
CONCRETE CURBS	745.16	1.10%	
CONCRETE RE-FUELING PAD	4,024.80	5.94%	
MISCELLANEOUS	0.00	0.00%	
8	67,798.91	100.00%	

CANOPY AREA CALCULATIONS

COVER DESCRIPTION	COVER AREA sf	PERCENT	COVER REMARKS
RE-FUELING CANOPY	2,320.00	100.00%	
1	2,320.00	100.00%	

SITE PLAN NOTES:

1. PROPERTY LINE
2. RIGHT OF WAY DEDICATION
3. BUILDINGS SETBACK LINE
4. VEHICLE USE AREA SETBACK LINE
5. NEW DRIVEWAY PERMIT, LEFT OUT, LEFT IN, ONLY.
6. DRIVEWAY PERMIT, WIDEN DRIVEWAY TO 36'-0" WIDTH TO PROVIDE LEFT AND RIGHT OUT LANES.
7. PEDESTRIAN CONNECTION POINT TO NEW OR EXISTING CITY SIDEWALK.

STUDIO 3 ARCHITECTURE INCORPORATED
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PROJECT # 2020-109
DATE: 01/17/2022
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Stop-N-Save Gas
New Gas Station
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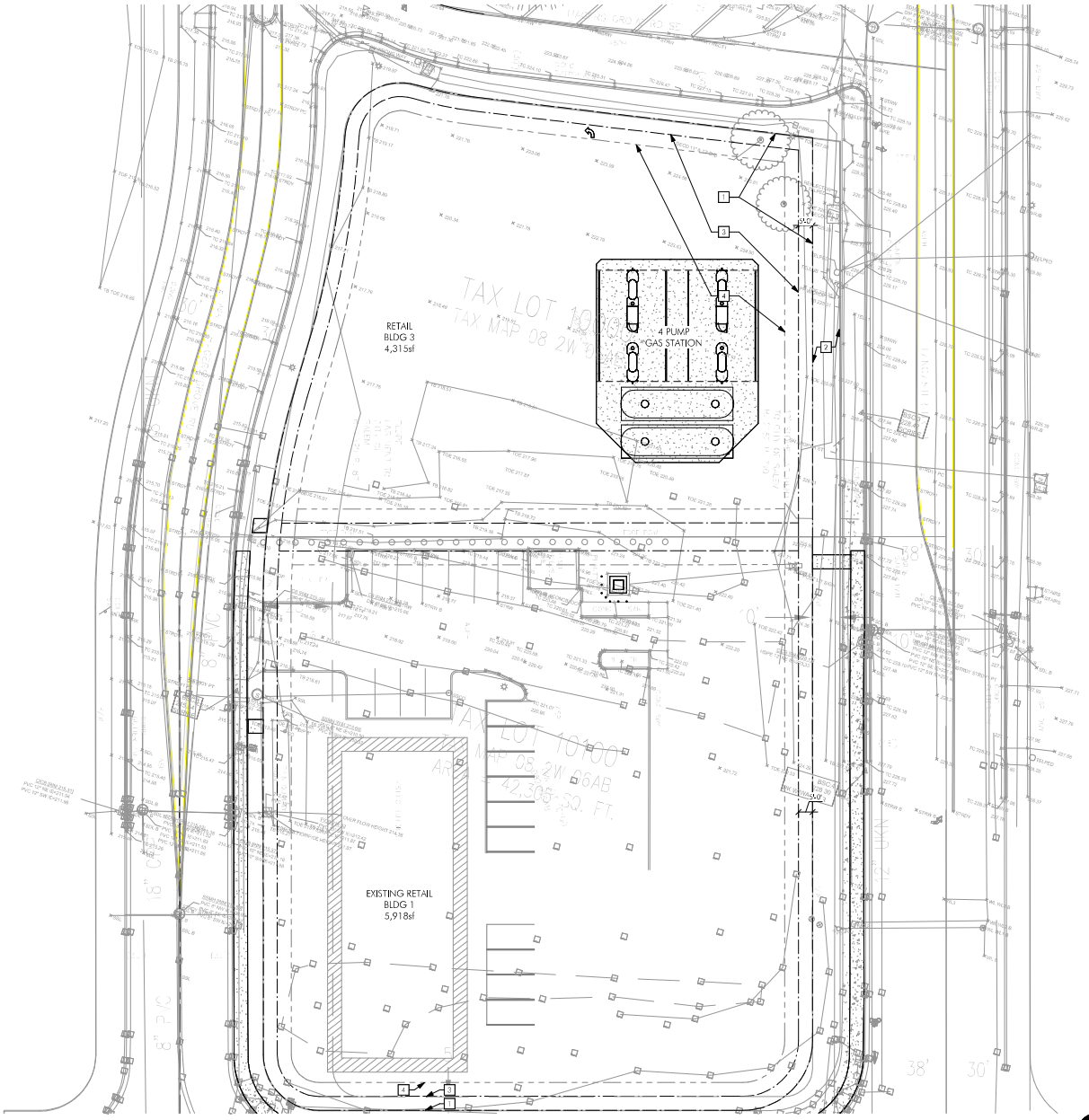
A1.01



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SHEET:
A1.02

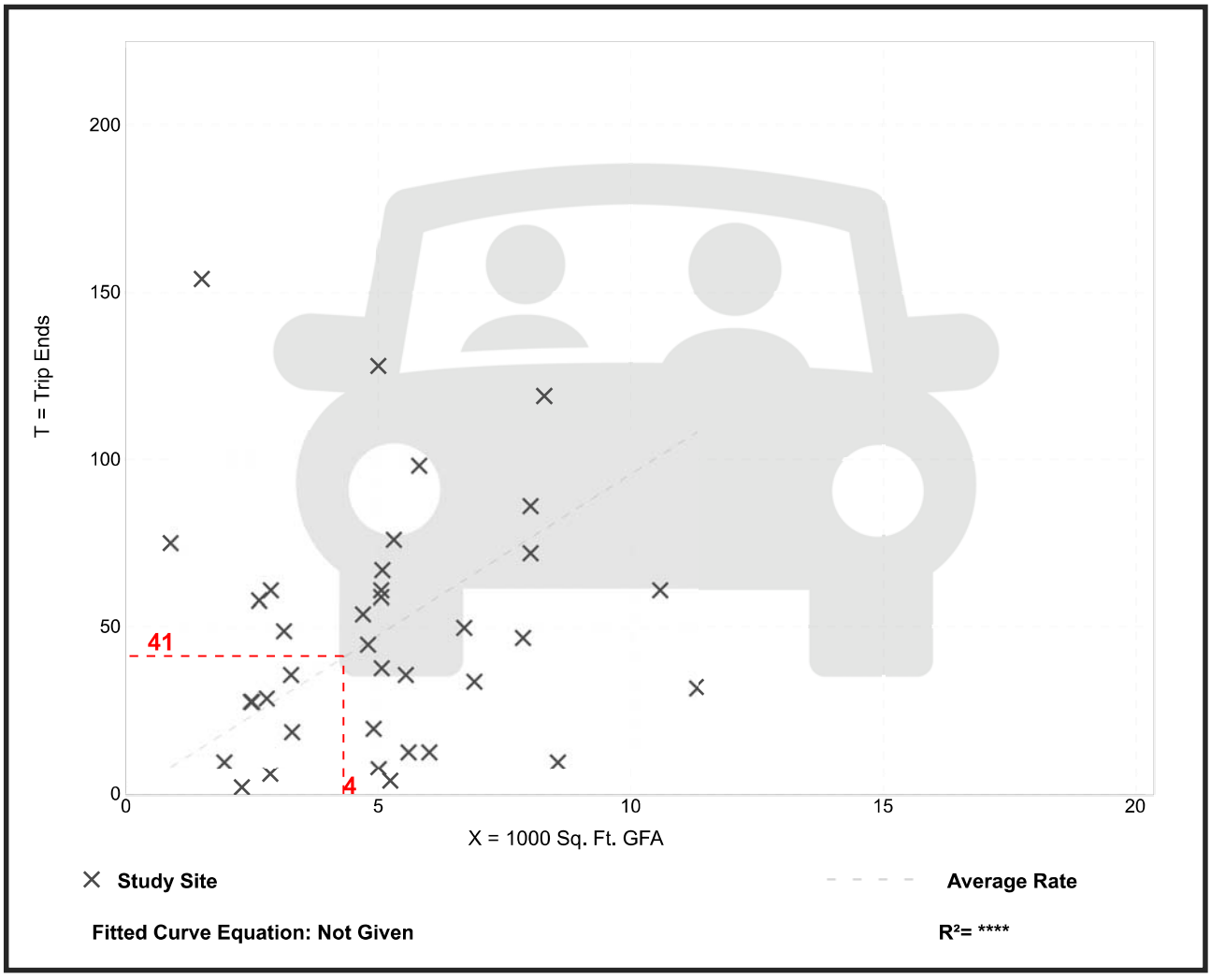
High-Turnover (Sit-Down) Restaurant
(932)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 37
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.57	0.76 - 102.39	11.61

Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

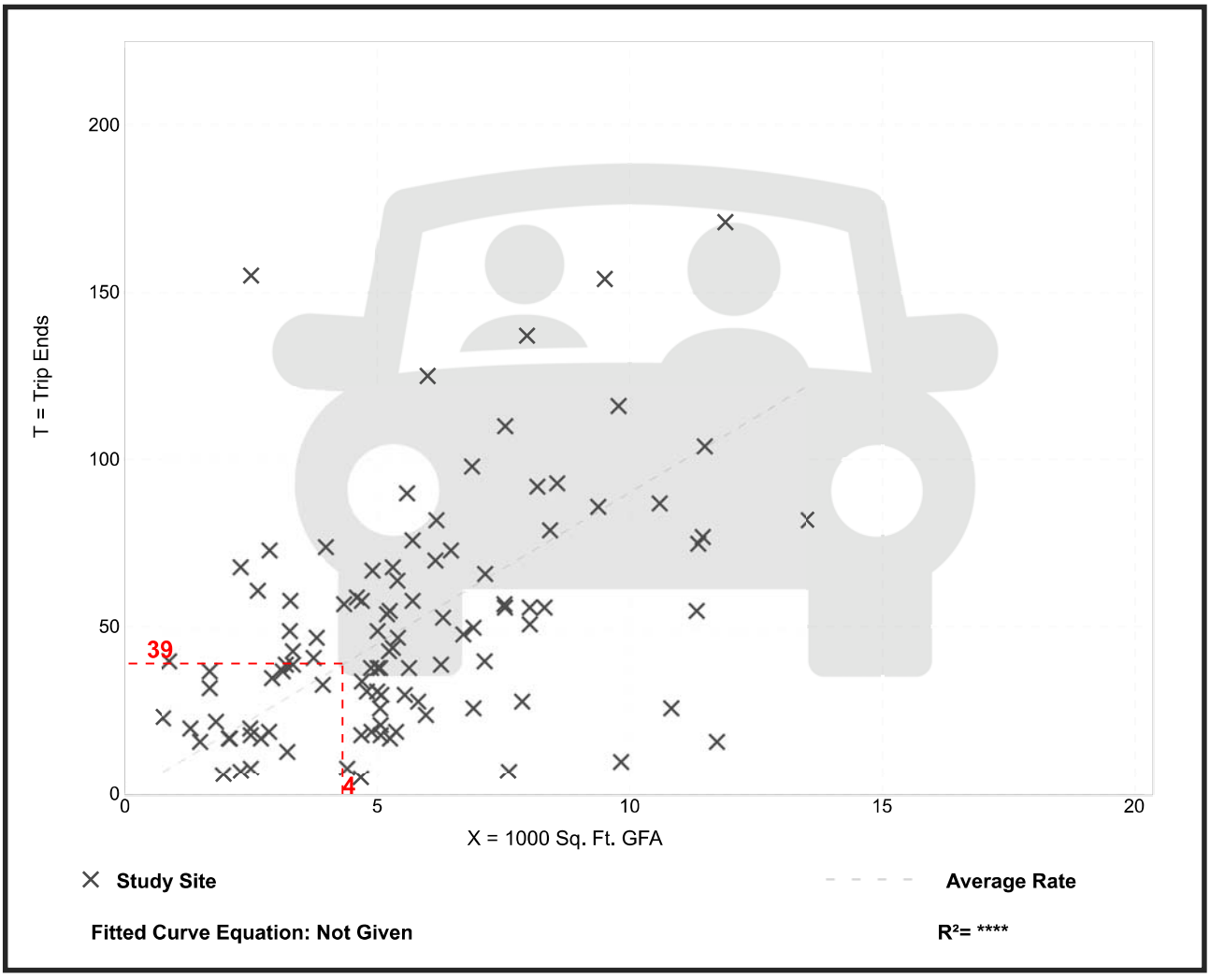
High-Turnover (Sit-Down) Restaurant
(932)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 104
Avg. 1000 Sq. Ft. GFA: 6
Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.05	0.92 - 62.00	6.18

Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

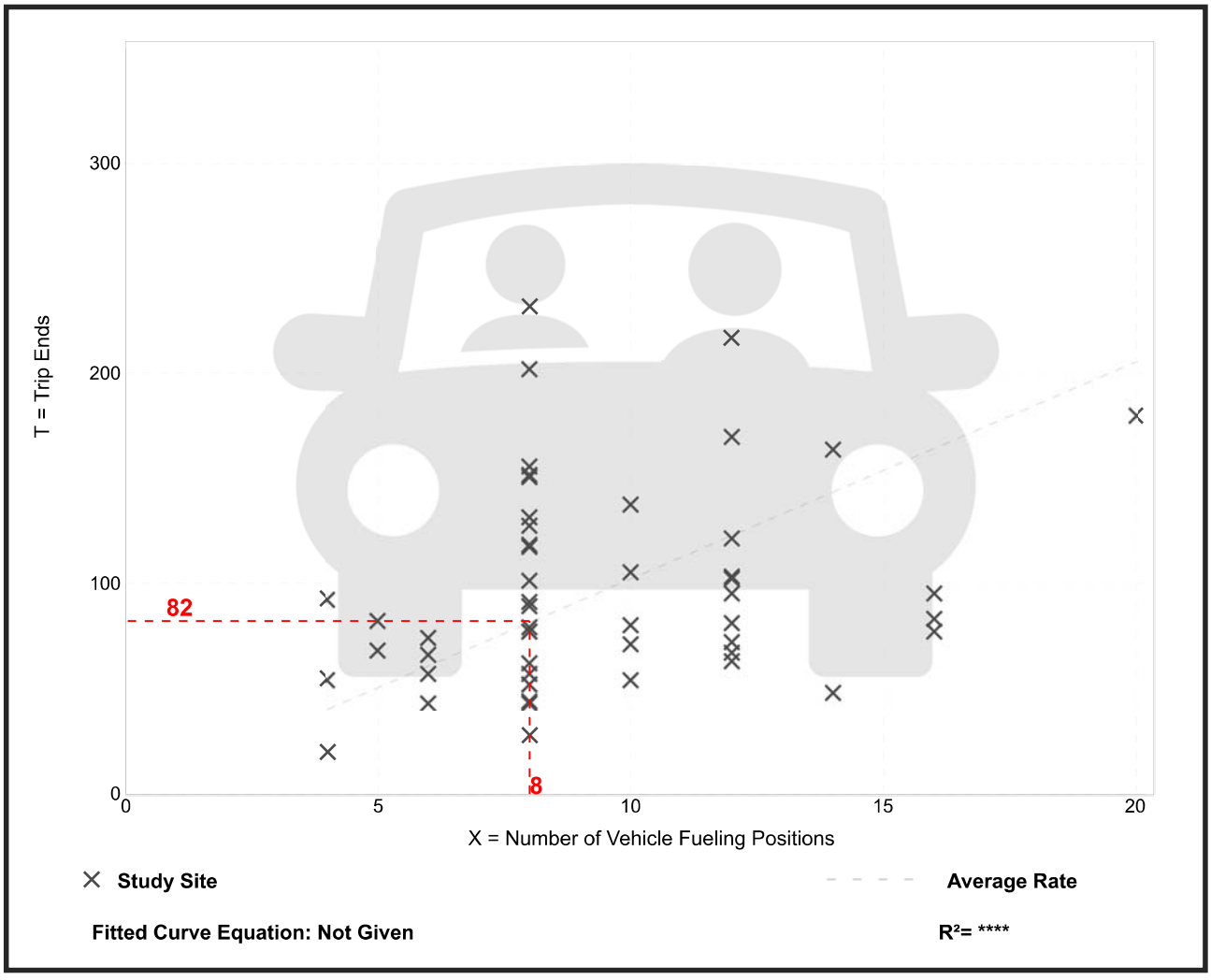
Gasoline/Service Station
(944)

Vehicle Trip Ends vs: **Vehicle Fueling Positions**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 53
Avg. Num. of Vehicle Fueling Positions: 9
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
10.28	3.50 - 29.00	5.36

Data Plot and Equation



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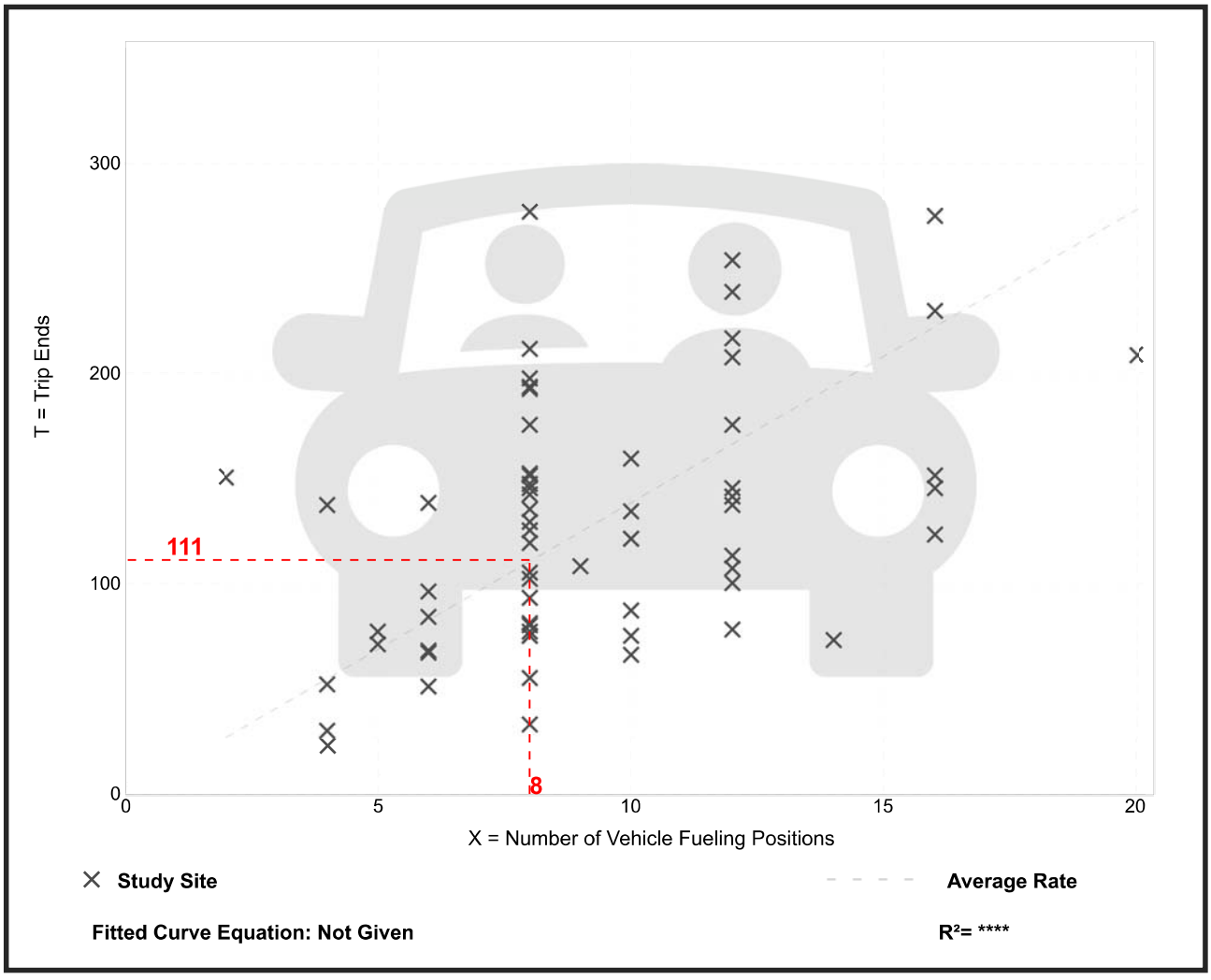
Gasoline/Service Station
(944)

Vehicle Trip Ends vs: **Vehicle Fueling Positions**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 65
Avg. Num. of Vehicle Fueling Positions: 9
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
13.91	4.25 - 75.50	6.93

Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

Vehicle Pass-By Rates by Land Use

Source: ITE *Trip Generation Manual* , 11th Edition

Land Use Code	932
Land Use	High-Turnover (Sit-Down) Restaurant
Setting	General Urban/Suburban
Time Period	Weekday PM Peak Period
# Data Sites	12
Average Pass-By Rate	43%

Pass-By Characteristics for Individual Sites

GFA (000)	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Non-Pass-By Trips			Adj Street Peak Hour Volume	Source
					Primary (%)	Diverted (%)	Total (%)		
2.9	Kentucky	1993	41	37	27	36	63	3935	2
3.1	Kentucky	1993	21	38	29	33	62	2580	2
4.6	Florida	1992	276	63	—	—	37	—	30
5	Florida	1992	65	58	—	—	42	—	30
5.3	Kentucky	1993	24	50	37	13	50	1615	2
5.7	Florida	1994	308	57	—	—	43	—	30
5.8	Florida	1992	150	32	—	—	68	—	30
6.2	Florida	1995	521	46	43	11	54	—	30
7.1	Indiana	1993	—	23	23	54	77	1565	2
8	Florida	1995	664	40	39	21	60	—	30
11	Florida	1996	267	38	43	19	62	—	30
12	Florida	1996	317	29	51	20	71	—	30

Vehicle Pass-By Rates by Land Use

Source: ITE *Trip Generation Manual* , 11th Edition

Land Use Code	944
Land Use	Gasoline/Service Station
Setting	General Urban/Suburban
Time Period	Weekday AM Peak Period
# Data Sites	12
Average Pass-By Rate	63%

Pass-By Characteristics for Individual Sites

Vehicle Fueling Positions	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Non-Pass-By Trips			Adj Street Peak Hour Volume	Source
					Primary (%)	Diverted (%)	Total (%)		
6	Maryland	1992	21	67	14	19	33	900	25
6	Maryland	1992	21	43	28	29	57	870	25
8	Maryland	1992	46	87	13	0	13	2235	25
8	Maryland	1992	35	78	9	13	22	7080	25
8	Kentucky	1993	61	60	15	25	40	4000	2
8	Kentucky	1993	48	68	13	19	32	1307	2
8	Kentucky	1993	—	56	22	22	44	1211	2
8	Maryland	1992	36	47	14	39	53	3095	25
8	Maryland	1992	46	75	0	25	25	3770	25
10	Kentucky	1993	47	67	11	22	33	1105	2
10	Kentucky	1993	—	46	42	12	54	1211	2
12	Maryland	1992	36	61	8	31	39	3480	25

Vehicle Pass-By Rates by Land Use

Source: ITE *Trip Generation Manual* , 11th Edition

Land Use Code	944
Land Use	Gasoline/Service Station
Setting	General Urban/Suburban
Time Period	Weekday PM Peak Period
# Data Sites	17
Average Pass-By Rate	57%

Pass-By Characteristics for Individual Sites

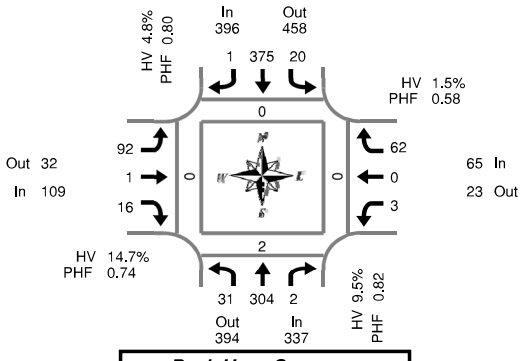
Vehicle Fueling Positions	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Non-Pass-By Trips			Adj Street Peak Hour Volume	Source
					Primary (%)	Diverted (%)	Total (%)		
6	Maryland	1992	18	61	6	33	39	2510	25
6	Maryland	1992	26	58	11	31	42	1020	25
8	Maryland	1992	47	62	23	15	38	2635	25
8	Kentucky	1993	83	52	8	40	48	4965	2
8	Kentucky	1993	60	53	20	27	47	1491	2
8	Kentucky	1993	—	72	7	21	28	2657	2
8	Maryland	1992	36	67	14	19	33	3095	25
8	Maryland	1992	46	46	11	43	54	3770	25
8	Maryland	1992	35	54	3	43	46	7080	25
10	Kentucky	1993	—	57	19	24	43	1812	2
10	Kentucky	1993	—	55	16	29	45	2657	2
12	Maryland	1992	52	38	10	52	62	3835	25
12	Pennsylvania	2009	—	66	—	—	34	—	19
12	Pennsylvania	2009	—	51	—	—	49	—	19
12	Pennsylvania	2009	—	40	—	—	60	—	19
12	Pennsylvania	2009	—	61	—	—	39	—	19
12	New Jersey	2009	—	73	—	—	27	—	19

Appendix B – Traffic Data

Traffic Counts

Total Vehicle Summary

All Traffic Data
Services Inc.
Clay Carney
(503) 833-2740



Lancaster Dr SE & Hagers Grove Rd SE

Wednesday, November 09, 2016
7:00 AM to 9:00 AM

Peak Hour Summary
7:10 AM to 8:10 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	21	0	0	1	20	1	0	6	0	1	0	0	0	7	0	57	0	0	0	0
7:05 AM	2	19	0	0	3	20	0	0	5	0	2	0	0	0	7	0	58	0	0	0	0
7:10 AM	4	26	0	0	1	29	0	0	4	0	1	0	0	0	7	0	72	0	0	0	0
7:15 AM	2	18	1	0	2	25	0	0	10	0	0	0	0	0	5	0	63	0	1	0	0
7:20 AM	1	26	0	0	2	30	0	0	4	0	1	0	0	0	2	0	66	0	0	0	0
7:25 AM	4	25	0	0	2	23	0	0	7	0	2	0	0	0	7	0	70	0	0	0	0
7:30 AM	2	27	1	0	0	30	0	0	5	0	3	0	0	0	3	0	71	0	0	0	0
7:35 AM	2	38	0	0	1	37	0	0	5	1	2	0	1	0	8	0	95	0	0	0	0
7:40 AM	4	24	0	0	0	32	0	0	14	0	0	0	0	0	14	0	88	0	0	0	0
7:45 AM	2	33	0	0	3	42	0	0	11	0	2	0	0	0	5	0	98	0	1	0	0
7:50 AM	1	26	0	0	1	36	0	0	8	0	2	0	0	0	1	0	75	0	0	0	0
7:55 AM	4	18	0	0	1	40	1	0	8	0	0	0	0	0	5	0	77	0	0	0	0
8:00 AM	2	18	0	0	4	28	0	0	9	0	2	0	1	0	1	0	65	0	0	0	0
8:05 AM	3	25	0	0	3	23	0	0	7	0	1	0	1	0	4	0	67	0	0	0	0
8:10 AM	3	15	1	0	1	22	0	0	6	0	2	0	0	0	3	0	53	0	0	0	0
8:15 AM	2	20	0	0	1	18	0	0	11	0	2	0	0	0	5	0	59	0	0	0	1
8:20 AM	2	21	1	0	0	21	0	0	11	0	2	0	0	0	4	0	62	0	0	0	0
8:25 AM	5	21	0	1	1	28	0	0	11	0	5	0	0	0	6	0	77	0	0	0	0
8:30 AM	2	17	0	0	1	28	1	0	8	1	1	0	0	0	3	0	62	0	0	0	0
8:35 AM	5	24	1	0	1	19	0	0	9	1	2	0	1	0	4	0	67	0	0	0	0
8:40 AM	0	29	1	0	4	24	1	0	11	0	2	0	0	0	1	0	73	0	0	1	0
8:45 AM	3	29	0	0	2	17	1	0	14	0	3	0	0	1	5	0	75	0	0	0	0
8:50 AM	5	28	0	0	2	29	0	0	10	0	0	0	0	0	3	0	77	0	0	0	0
8:55 AM	3	27	0	0	3	17	0	0	9	0	4	0	0	0	2	0	65	0	0	0	0
Total Survey	63	575	6	1	40	638	5	0	203	3	42	0	4	1	112	0	1,692	0	2	1	1

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	6	66	0	0	5	69	1	0	15	0	4	0	0	0	21	0	187	0	0	0	0
7:15 AM	7	69	1	0	6	78	0	0	21	0	3	0	0	0	14	0	199	0	1	0	0
7:30 AM	8	89	1	0	1	99	0	0	24	1	5	0	1	0	25	0	254	0	0	0	0
7:45 AM	7	77	0	0	5	118	1	0	27	0	4	0	0	0	11	0	250	0	1	0	0
8:00 AM	8	58	1	0	8	73	0	0	22	0	5	0	2	0	8	0	185	0	0	0	0
8:15 AM	9	62	1	1	2	67	0	0	33	0	9	0	0	0	15	0	198	0	0	0	1
8:30 AM	7	70	2	0	6	71	2	0	28	2	5	0	1	0	8	0	202	0	0	1	0
8:45 AM	11	84	0	0	7	63	1	0	33	0	7	0	0	1	10	0	217	0	0	0	0
Total Survey	63	575	6	1	40	638	5	0	203	3	42	0	4	1	112	0	1,692	0	2	1	1

Peak Hour Summary
7:10 AM to 8:10 AM

By Approach	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	337	394	731	0	396	458	854	0	109	32	141	0	65	23	88	0	907	0	2	0	0
%HV	9.5%				4.8%				14.7%				1.5%				7.5%				
PHF	0.82				0.80				0.74				0.58				0.81				

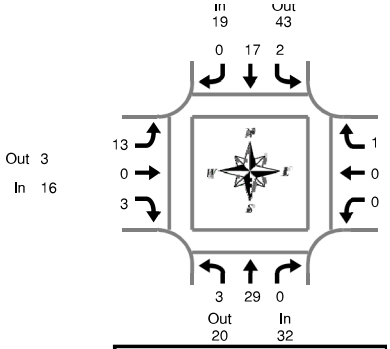
By Movement	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	31	304	2	337	20	375	1	396	92	1	16	109	3	0	62	65	907
%HV	9.7%	9.5%	0.0%	9.5%	10.0%	4.5%	0.0%	4.8%	14.1%	0.0%	18.8%	14.7%	0.0%	0.0%	1.6%	1.5%	7.5%
PHF	0.86	0.80	0.50	0.82	0.63	0.79	0.25	0.80	0.70	0.25	0.57	0.74	0.38	0.00	0.57	0.58	0.81

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	28	301	2	0	17	364	2	0	87	1	16	0	1	0	71	0	890	0	2	0	0
7:15 AM	30	293	3	0	20	368	1	0	94	1	17	0	3	0	58	0	888	0	2	0	0
7:30 AM	32	286	3	1	16	357	1	0	106	1	23	0	3	0	59	0	887	0	1	0	1
7:45 AM	31	267	4	1	21	329	3	0	110	2	23	0	3	0	42	0	835	0	1	1	1
8:00 AM	35	274	4	1	23	274	3	0	116	2	26	0	3	1	41	0	802	0	0	1	1

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Lancaster Dr SE & Hagers Grove Rd SE

Wednesday, November 09, 2016
7:00 AM to 9:00 AM

Peak Hour Summary
7:10 AM to 8:10 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
7:05 AM	1	1	0	2	0	2	0	2	0	0	0	0	0	0	0	0	4
7:10 AM	0	1	0	1	0	2	0	2	0	0	0	0	0	0	0	0	3
7:15 AM	0	1	0	1	0	1	0	1	1	0	0	1	0	0	0	0	3
7:20 AM	1	1	0	2	0	2	0	2	0	0	0	0	0	0	0	0	4
7:25 AM	0	3	0	3	0	0	0	0	1	0	0	1	0	0	0	0	4
7:30 AM	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	0	3
7:35 AM	1	4	0	5	1	1	0	2	1	0	0	1	0	0	0	0	8
7:40 AM	0	1	0	1	0	0	0	0	2	0	0	2	0	0	0	0	3
7:45 AM	1	5	0	6	1	2	0	3	2	0	1	3	0	0	0	0	12
7:50 AM	0	3	0	3	0	2	0	2	2	0	0	2	0	0	0	0	7
7:55 AM	0	3	0	3	0	3	0	3	1	0	0	1	0	0	0	0	7
8:00 AM	0	2	0	2	0	1	0	1	1	0	1	2	0	0	0	0	5
8:05 AM	0	4	0	4	0	2	0	2	2	0	0	2	0	0	1	1	9
8:10 AM	0	3	0	3	0	1	0	1	2	0	0	2	0	0	0	0	6
8:15 AM	0	2	0	2	0	1	0	1	1	0	0	1	0	0	0	0	4
8:20 AM	1	4	0	5	0	3	0	3	1	0	0	1	0	0	0	0	9
8:25 AM	0	3	0	3	0	3	0	3	2	0	0	2	0	0	0	0	8
8:30 AM	0	5	0	5	0	3	0	3	1	1	0	2	0	0	0	0	10
8:35 AM	1	1	0	2	0	3	0	3	0	0	0	0	0	0	0	0	5
8:40 AM	0	5	1	6	1	2	0	3	2	0	0	2	0	0	0	0	11
8:45 AM	0	4	0	4	1	1	0	2	2	0	1	3	0	0	0	0	9
8:50 AM	2	10	0	12	0	3	0	3	1	0	0	1	0	0	0	0	16
8:55 AM	0	3	0	3	1	4	0	5	3	0	1	4	0	0	0	0	12
Total Survey	8	72	1	81	5	43	0	48	28	1	5	34	0	0	1	1	164

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	1	4	0	5	0	4	0	4	0	0	0	0	0	0	0	0	9
7:15 AM	1	5	0	6	0	3	0	3	2	0	0	2	0	0	0	0	11
7:30 AM	1	6	0	7	1	2	0	3	3	0	1	4	0	0	0	0	14
7:45 AM	1	11	0	12	1	7	0	8	5	0	1	6	0	0	0	0	26
8:00 AM	0	9	0	9	0	4	0	4	5	0	1	6	0	0	1	1	20
8:15 AM	1	9	0	10	0	7	0	7	4	0	0	4	0	0	0	0	21
8:30 AM	1	11	1	13	1	8	0	9	3	1	0	4	0	0	0	0	26
8:45 AM	2	17	0	19	2	8	0	10	6	0	2	8	0	0	0	0	37
Total Survey	8	72	1	81	5	43	0	48	28	1	5	34	0	0	1	1	164

Heavy Vehicle Peak Hour Summary
7:10 AM to 8:10 AM

By Approach	Northbound Lancaster Dr SE			Southbound Lancaster Dr SE			Eastbound Hagers Grove Rd SE			Westbound Hagers Grove Rd SE			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	32	20	52	19	43	62	16	3	19	1	2	3	68
PHF	0.67			0.59			0.57			0.25			0.65

By Movement	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	3	29	0	32	2	17	0	19	13	0	3	16	0	0	1	1	68
PHF	0.38	0.66	0.00	0.67	0.25	0.61	0.00	0.59	0.54	0.00	0.75	0.57	0.00	0.00	0.25	0.25	0.65

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

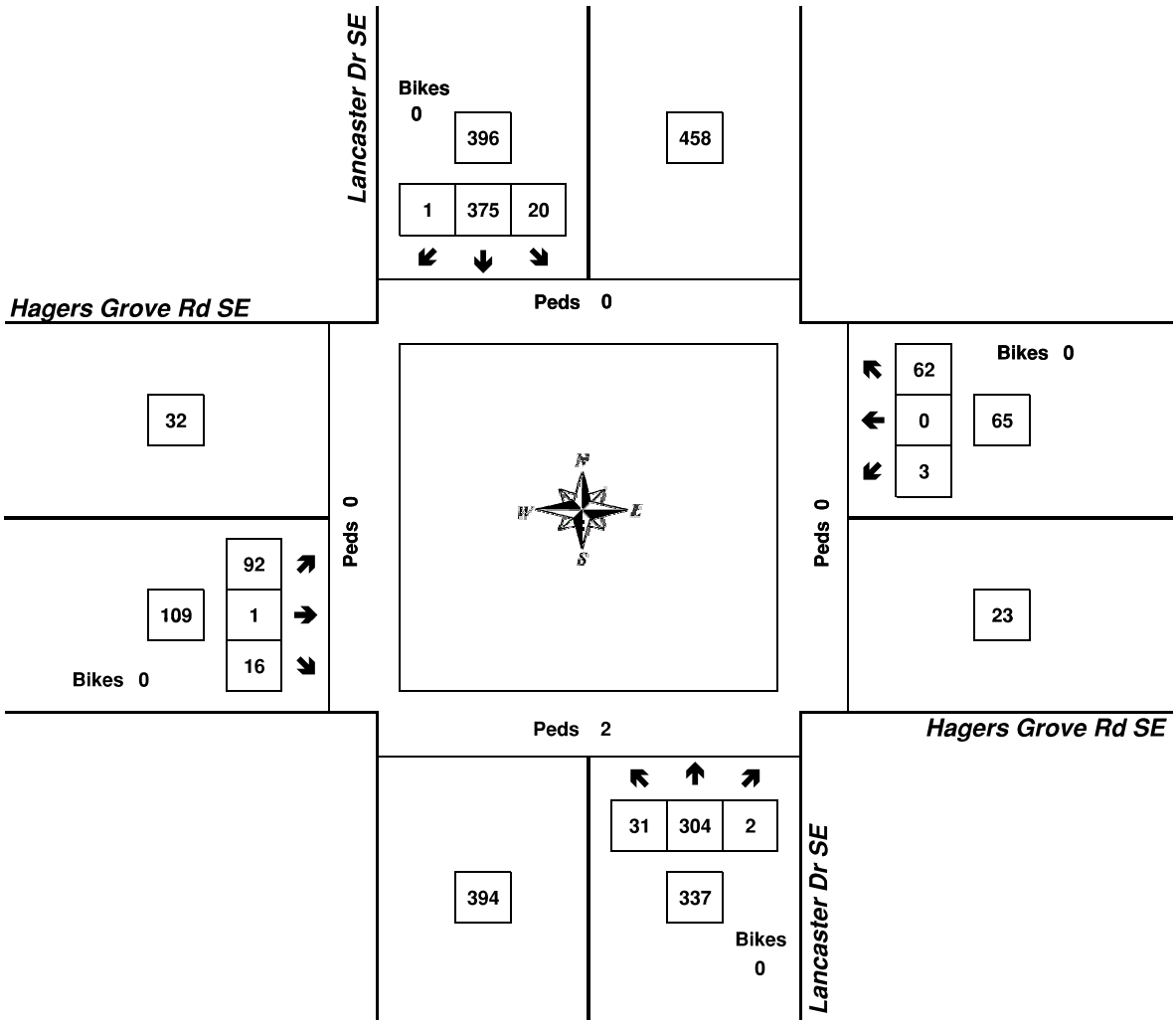
Interval Start Time	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	4	26	0	30	2	16	0	18	10	0	2	12	0	0	0	0	60
7:15 AM	3	31	0	34	2	16	0	18	15	0	3	18	0	0	1	1	71
7:30 AM	3	35	0	38	2	20	0	22	17	0	3	20	0	0	1	1	81
7:45 AM	3	40	1	44	2	26	0	28	17	1	2	20	0	0	1	1	93
8:00 AM	4	46	1	51	3	27	0	30	18	1	3	22	0	0	1	1	104

Peak Hour Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740

Lancaster Dr SE & Hagers Grove Rd SE

7:10 AM to 8:10 AM
Wednesday, November 09, 2016

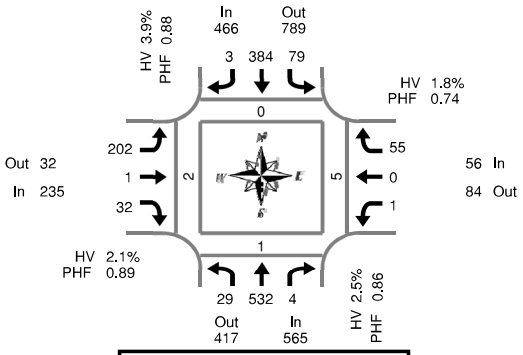


Approach	PHF	HV%	Volume
EB	0.74	14.7%	109
WB	0.58	1.5%	65
NB	0.82	9.5%	337
SB	0.80	4.8%	396
Intersection	0.81	7.5%	907

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data
Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:15 PM to 5:15 PM

Lancaster Dr SE & Hagers Grove Rd SE

Wednesday, November 09, 2016
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	4	16	0	0	8	32	0	0	14	0	7	0	0	1	3	0	85	1	0	0	0
4:05 PM	3	27	0	0	4	43	0	0	15	0	2	0	0	0	6	0	100	0	0	0	0
4:10 PM	2	39	0	0	6	34	1	0	17	0	5	0	1	0	2	0	107	0	0	0	0
4:15 PM	4	39	1	0	8	23	0	0	20	1	4	0	0	0	3	0	103	0	0	0	0
4:20 PM	4	35	0	0	5	31	0	0	16	0	2	0	0	0	7	0	100	0	0	0	0
4:25 PM	2	51	1	0	7	40	1	0	19	0	4	0	0	0	9	0	134	0	0	0	0
4:30 PM	2	49	0	0	9	39	0	0	14	0	2	0	0	0	2	0	117	0	0	4	0
4:35 PM	1	26	0	0	6	27	0	0	24	0	3	1	1	0	7	0	95	0	0	0	0
4:40 PM	2	53	2	0	6	28	0	0	16	0	5	0	0	0	3	0	115	0	0	1	0
4:45 PM	2	63	0	0	5	26	1	0	12	0	3	0	0	0	5	0	117	0	0	0	0
4:50 PM	3	39	0	0	4	26	0	0	18	0	2	0	0	0	5	0	97	0	1	0	2
4:55 PM	3	47	0	0	11	31	0	0	13	0	4	0	0	0	2	0	111	0	0	0	0
5:00 PM	1	44	0	0	9	39	1	0	25	0	1	0	0	0	5	0	125	0	0	0	0
5:05 PM	3	40	0	0	5	37	0	0	6	0	2	0	0	0	4	0	97	0	0	0	0
5:10 PM	2	46	0	0	4	37	0	0	19	0	0	0	0	0	3	0	111	0	0	0	0
5:15 PM	4	30	1	0	3	27	0	0	5	0	5	0	2	0	7	0	84	2	0	2	0
5:20 PM	1	30	2	0	13	47	0	0	12	0	3	0	0	0	3	0	111	0	0	0	0
5:25 PM	2	33	0	0	6	26	0	0	15	0	4	0	0	0	2	0	88	0	0	0	0
5:30 PM	1	38	0	0	8	21	0	0	14	0	3	0	0	0	3	0	88	0	0	0	0
5:35 PM	2	30	0	0	8	30	1	0	13	0	4	0	0	0	5	0	93	0	1	0	0
5:40 PM	4	30	1	0	2	24	1	0	13	0	3	0	0	1	3	0	82	0	0	0	0
5:45 PM	2	26	0	0	11	48	0	0	10	0	2	0	0	0	3	0	102	0	0	0	0
5:50 PM	0	14	0	0	4	26	0	0	15	0	2	0	0	0	2	0	63	0	0	1	0
5:55 PM	3	28	0	0	8	26	1	0	11	0	1	0	0	0	4	0	82	0	2	0	0
Total Survey	57	873	8	0	160	768	7	0	356	1	73	1	4	2	98	0	2,407	3	4	8	2

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	9	82	0	0	18	109	1	0	46	0	14	0	1	1	11	0	292	1	0	0	0
4:15 PM	10	125	2	0	20	94	1	0	55	1	10	0	0	0	19	0	337	0	0	0	0
4:30 PM	5	128	2	0	21	94	0	0	54	0	10	1	1	0	12	0	327	0	0	5	0
4:45 PM	8	149	0	0	20	83	1	0	43	0	9	0	0	0	12	0	325	0	1	0	2
5:00 PM	6	130	0	0	18	113	1	0	50	0	3	0	0	0	12	0	333	0	0	0	0
5:15 PM	7	93	3	0	22	100	0	0	32	0	12	0	2	0	12	0	283	2	0	2	0
5:30 PM	7	98	1	0	18	75	2	0	40	0	10	0	0	1	11	0	263	0	1	0	0
5:45 PM	5	68	0	0	23	100	1	0	36	0	5	0	0	0	9	0	247	0	2	1	0
Total Survey	57	873	8	0	160	768	7	0	356	1	73	1	4	2	98	0	2,407	3	4	8	2

Peak Hour Summary
4:15 PM to 5:15 PM

By Approach	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	565	417	982	0	466	789	1,255	0	235	32	267	1	56	84	140	0	1,322	0	1	5	2
%HV	2.5%				3.9%				2.1%				1.8%				2.9%				
PHF	0.86				0.88				0.89				0.74				0.94				

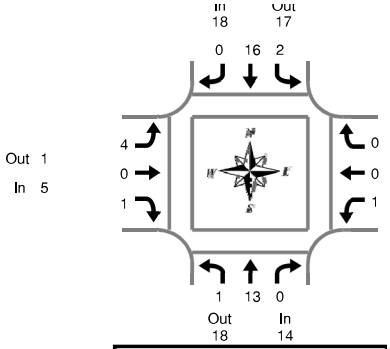
By Movement	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	29	532	4	565	79	384	3	466	202	1	32	235	1	0	55	56	1,322
%HV	3.4%	2.4%	0.0%	2.5%	2.5%	4.2%	0.0%	3.9%	2.0%	0.0%	3.1%	2.1%	#####	0.0%	0.0%	1.8%	2.9%
PHF	0.73	0.86	0.50	0.86	0.79	0.85	0.75	0.88	0.89	0.25	0.73	0.89	0.25	0.00	0.72	0.74	0.94

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	32	484	4	0	79	380	3	0	198	1	43	1	2	1	54	0	1,281	1	1	5	2
4:15 PM	29	532	4	0	79	384	3	0	202	1	32	1	1	0	55	0	1,322	0	1	5	2
4:30 PM	26	500	5	0	81	390	2	0	179	0	34	1	3	0	48	0	1,268	2	1	7	2
4:45 PM	28	470	4	0	78	371	4	0	165	0	34	0	2	1	47	0	1,204	2	2	2	2
5:00 PM	25	389	4	0	81	388	4	0	158	0	30	0	2	1	44	0	1,126	2	3	3	0

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Lancaster Dr SE & Hagers Grove Rd SE

Wednesday, November 09, 2016
4:00 PM to 6:00 PM

Peak Hour Summary
4:15 PM to 5:15 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	1	0	1	1	5	0	6	1	0	0	1	0	0	0	0	8
4:05 PM	0	2	0	2	0	3	0	3	2	0	0	2	0	0	0	0	7
4:10 PM	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	2
4:20 PM	0	1	0	1	0	4	0	4	0	0	0	0	0	0	0	0	5
4:25 PM	1	1	0	2	0	2	0	2	1	0	0	1	0	0	0	0	5
4:30 PM	0	2	0	2	1	1	0	2	0	0	0	0	0	0	0	0	4
4:35 PM	0	1	0	1	0	1	0	1	0	0	0	0	1	0	0	1	3
4:40 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	1	1	0	2	1	0	0	1	0	0	0	0	3
4:50 PM	0	3	0	3	0	3	0	3	0	0	0	0	0	0	0	0	6
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	3	0	3	0	1	0	1	0	0	0	0	0	0	0	0	4
5:05 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
5:10 PM	0	1	0	1	0	3	0	3	0	0	0	0	0	0	0	0	4
5:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:20 PM	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	3
5:25 PM	0	0	0	0	0	1	0	1	2	0	0	2	0	0	1	1	4
5:30 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
5:50 PM	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	0	5
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	1	21	1	23	3	32	1	36	9	0	1	10	1	0	1	2	71

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	4	0	4	1	8	1	10	3	0	0	3	0	0	0	0	17
4:15 PM	1	2	0	3	0	6	0	6	2	0	1	3	0	0	0	0	12
4:30 PM	0	4	0	4	1	2	0	3	0	0	0	0	1	0	0	1	8
4:45 PM	0	3	0	3	1	4	0	5	1	0	0	1	0	0	0	0	9
5:00 PM	0	4	0	4	0	4	0	4	1	0	0	1	0	0	0	0	9
5:15 PM	0	3	1	4	0	1	0	1	2	0	0	2	0	0	1	1	8
5:30 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	6	0	6	0	0	0	0	0	0	0	0	6
Total Survey	1	21	1	23	3	32	1	36	9	0	1	10	1	0	1	2	71

Heavy Vehicle Peak Hour Summary
4:15 PM to 5:15 PM

By Approach	Northbound Lancaster Dr SE			Southbound Lancaster Dr SE			Eastbound Hagers Grove Rd SE			Westbound Hagers Grove Rd SE			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	14	18	32	18	17	35	5	1	6	1	2	3	38
PHF	0.58			0.56			0.42			0.25			0.68

By Movement	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	1	13	0	14	2	16	0	18	4	0	1	5	1	0	0	1	38
PHF	0.25	0.54	0.00	0.58	0.50	0.57	0.00	0.56	0.50	0.00	0.25	0.42	0.25	0.00	0.00	0.25	0.68

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

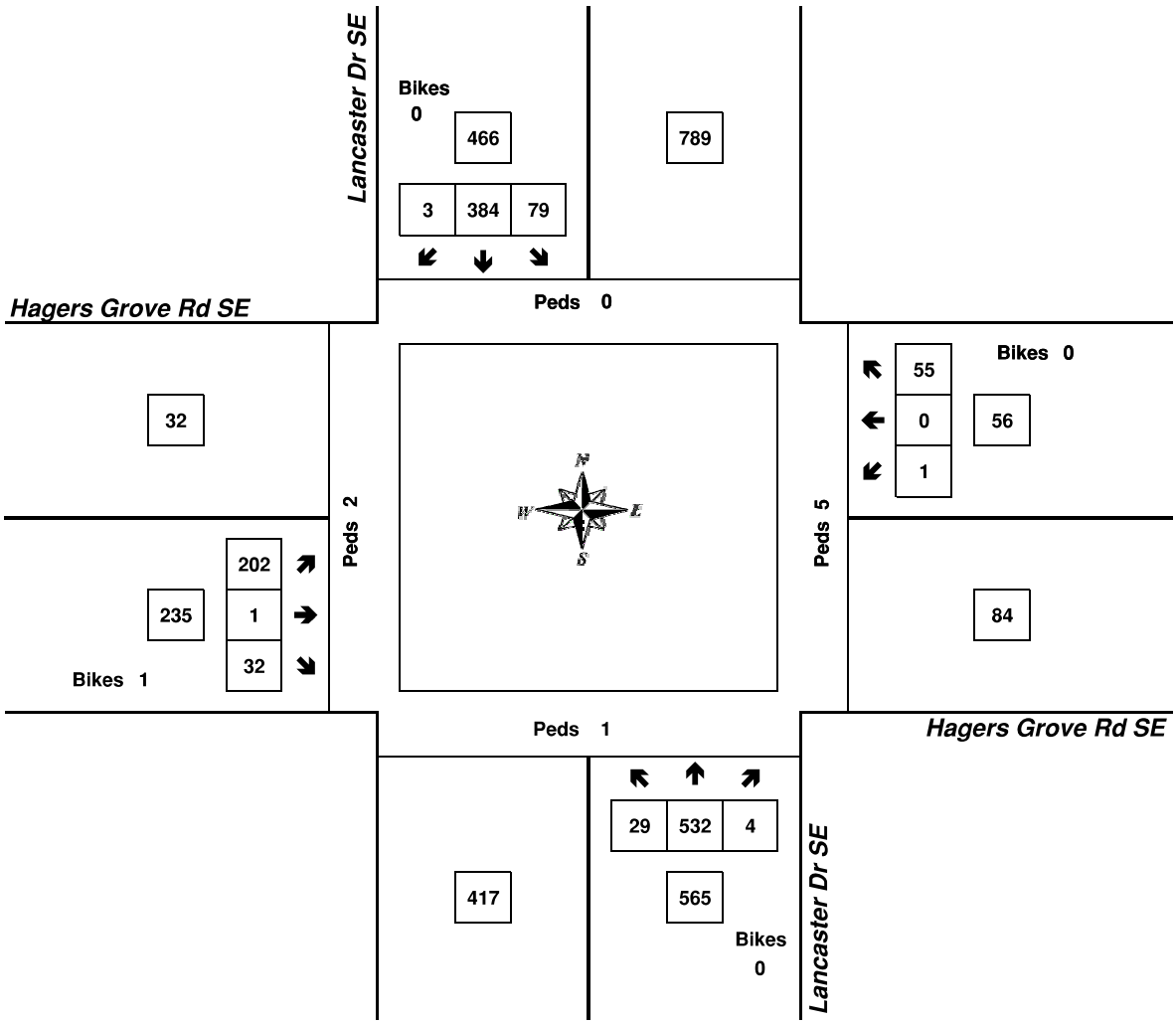
Interval Start Time	Northbound Lancaster Dr SE				Southbound Lancaster Dr SE				Eastbound Hagers Grove Rd SE				Westbound Hagers Grove Rd SE				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	1	13	0	14	3	20	1	24	6	0	1	7	1	0	0	1	46
4:15 PM	1	13	0	14	2	16	0	18	4	0	1	5	1	0	0	1	38
4:30 PM	0	14	1	15	2	11	0	13	4	0	0	4	1	0	1	2	34
4:45 PM	0	11	1	12	1	10	0	11	4	0	0	4	0	0	1	1	28
5:00 PM	0	8	1	9	0	12	0	12	3	0	0	3	0	0	1	1	25

Peak Hour Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740

Lancaster Dr SE & Hagers Grove Rd SE

4:15 PM to 5:15 PM
Wednesday, November 09, 2016



Approach	PHF	HV%	Volume
EB	0.89	2.1%	235
WB	0.74	1.8%	56
NB	0.86	2.5%	565
SB	0.88	3.9%	466
Intersection	0.94	2.9%	1,322

Count Period: 4:00 PM to 6:00 PM

Appendix C - Safety

Crash History Data

Preliminary Signal Warrants

Left-turn Lane Warrants

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF SALEM, MARION COUNTY

HAGERS GROVE at CARSON DR, City of Salem, Marion County, 01/01/2016 to 12/31/2020

1 - 3 of 3 Crash records shown.

SER# INVEST RD DPT UNLOC?	S D M / P R J S W / E A U I C O / E L G N H R / D C S V L K	DATE DAY TIME LAT	CLASS DIST FROM LONG	CITY STREET FIRST STREET SECOND STREET LRS	RD CHAR DIRECT LOCTN	INT-TYPE (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH COLL SVRTY	SPCL USE TRLR QTY OWNER V# TYPE	MOVE FROM TO	PRTC P# TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
05242	N N N	11/26/2016	19	CARSON DR	INTER	3-LEG	N	N	CLR	ANGL-OTH	01 NONE 9	TURN-R									02
NONE		SA	0	HAGERS GROVE	CN		YIELD	N	DRY	TURN	N/A	SE-N								000	00
N		1P			02	0		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK		000	000	00
N		44 54 40.65	-122 58 48.24														UNK				
											02 NONE 9	STRGHT									
											N/A	S -N								000	00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK		000	000	00
																	UNK				
01825	N N N	06/21/2020	19	CARSON DR	INTER	3-LEG	N	N	CLR	ANGL-OTH	01 NONE 9	TURN-R									02
NONE		SU	0	HAGERS GROVE	CN		YIELD	N	DRY	TURN	N/A	SE-N								000	00
N		10A			02	0		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK		000	000	00
N		44 54 40.62	-122 58 48.22														UNK				
											02 NONE 9	STRGHT									
											N/A	S -N								000	00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK		000	000	00
																	UNK				
01286	N N N	04/19/2020	19	CARSON DR	INTER	3-LEG	N	N	UNK	ANGL-OTH	01 NONE 9	TURN-R									02
NONE		SU	0	HAGERS GROVE	CN		YIELD	N	UNK	TURN	N/A	SE-N								000	00
N		5P			02	0		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00	Unk	UNK		000	000	00
N		44 54 40.63	-122 58 48.24														UNK				
											02 NONE 9	STRGHT									
											N/A	S -N								000	00
											PSNGR CAR		01 DRVR	NONE	00	Unk	UNK		000	000	00
																	UNK				

CITY OF SALEM, MARION COUNTY

HAGERS GROVE at LANCASTER DR, City of Salem, Marion County, 01/01/2016 to 12/31/2020

	S D M																			
SER#	P R J S W DATE	CLASS	CITY STREET		INT-TYPE					SPCL USE										
INVEST	E A U I C O DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE			A	S					
RD DPT	E L G N H R TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED			
UNLOC?	D C S V L K LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	TO	P# TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT EVENT	CAUSE

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

HAGERS GROVE at LANCASTER DR, City of Salem, Marion County, 01/01/2016 to 12/31/2020

SER# / INVEST / RD DPT / UNLOC?	S P E D	D M R A L C	J U G S	S I N V	W C O H L	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
02737	N	N N				09/08/2020	16	CARSON DR SE	INTER	CROSS	N	N	SMOK	S-1STOP	01	NONE 9	STRGHT										29
NONE						TU	0	LANCASTER DR SE	S		TRF SIGNAL	N	DRY	REAR		N/A	S -N									000	00
N						8A			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N						44 54 36.17	-122 58 42.72																UNK				
															02	NONE 9	STOP									011	00
																N/A	S -N									000	00
																PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																							UNK				
03916	N	N N				09/09/2016	16	CARSON DR SE	INTER	CROSS	N	N	CLR	S-STRGHT	01	NONE 0	STRGHT										29
NO RPT						FR	0	LANCASTER DR SE	CN		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000	00
N						12P			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	23	F	OR-Y		042	000	29
N						44 54 36.16	-122 58 42.74																OR<25				
															01	NONE 0	STRGHT										
																PRVTE	S -N									000	00
																PSNGR CAR		02	PSNG	NO<5	03	F			000	000	00
															02	NONE 0	STRGHT										
																PRVTE	S -N									000	00
																PSNGR CAR		01	DRVR	INJC	54	F	OR-Y		000	000	00
																							OR<25				
04304	N	N N				10/01/2016	16	CARSON DR SE	INTER	CROSS	N	N	CLR	O-OTHER	01	NONE 9	TURN-R										02
NONE						SA	0	LANCASTER DR SE	CN		TRF SIGNAL	N	DRY	TURN		N/A	E -N									000	00
N						2P			02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N						44 54 36.16	-122 58 42.74																UNK				
															02	NONE 9	TURN-L										
																N/A	W -N									000	00
																PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																							UNK				
00689	N	N N	N	N	N	02/22/2019	16	CARSON DR SE	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT										04
CITY						FR	0	LANCASTER DR SE	CN		TRF SIGNAL	N	WET	ANGL		PRVTE	W -E									000	00
N						10P			04	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	23	M	OR-Y		000	000	00
N						44 54 36.17	-122 58 42.75																OR<25				
															01	NONE 0	STRGHT										
																PRVTE	W -E									000	00
																PSNGR CAR		02	PSNG	INJC	24	M			000	000	00
															02	UNKN 0	STRGHT										
																UNKN	S -N									000	00
																PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		020	000	04
																							UNK				

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
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LANCASTER DR at CARSON DR, City of Salem, Marion County, 01/01/2016 to 12/31/2020

URBAN NON-SYSTEM CRASH LISTING

CITY OF SALEM, MARION COUNTY

LANCASTER DR at CARSON DR, City of Salem, Marion County, 01/01/2016 to 12/31/2020

5 - 5 of 5 Crash records shown.

SER# INVEST RD DPT UNLOC?	S D M P R J S W E A U I C O E L G N H R D C S V L K	DATE DAY TIME LAT	CLASS DIST FROM LONG	CITY STREET FIRST STREET SECOND STREET LRS	RD CHAR DIRECT LOCTN	INT-TYPE (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH COLL SVRTY	V#	SPCL USE TRLR QTY OWNER TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
04082	N N N	10/17/2019	16	CARSON DR SE	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 9	TURN-L										04
NO RPT		TH	0	LANCASTER DR SE	CN		TRF SIGNAL	N	DRY	TURN		N/A	W -N									000	00
N		11A			03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N		44 54 36.17	-122 58 42.72																UNK				
											02	NONE 9	STRGHT										
												N/A	N -S									000	00
												PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																			UNK				

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING
LANCASTER DR at CARSON DR, City of Salem, Marion County, 01/01/2016 to 12/31/2020

Traffic Signal Warrant Analysis

Project: Stop N Save Development
Date: 7/6/2022
Scenario: Year 2024 Buildout

Major Street:	Hagers Grove Road SE	Minor Street:	Northern Site Access
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	44	PM Peak Hour Volumes:	10

Warrant Used:

X 100 percent of standard warrants used

70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	440	8,850	
Minor Street*	100	2,650	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	440	13,300	
Minor Street*	100	1,350	**No**
Combination Warrant			
Major Street	440	10,640	
Minor Street*	100	2,120	**No**

* Minor street right-turning traffic volumes reduced by 25%

Traffic Signal Warrant Analysis

Project: Stop N Save Development
Date: 7/6/2022
Scenario: Year 2024 Buildout

Major Street:	Hagers Grove Road SE	Minor Street:	Western Site Access
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	337	PM Peak Hour Volumes:	198

Warrant Used:

X 100 percent of standard warrants used

70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	3,370	8,850	
Minor Street*	1,980	2,650	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	3,370	13,300	
Minor Street*	1,980	1,350	**No**
Combination Warrant			
Major Street	3,370	10,640	
Minor Street*	1,980	2,120	**No**

* Minor street right-turning traffic volumes reduced by 25%

Traffic Signal Warrant Analysis

Project: Stop N Save Development
Date: 7/6/2022
Scenario: Year 2024 Buildout

Major Street:	Hager Grove Road SE	Minor Street:	Southern Site Access
Number of Lanes:	3	Number of Lanes:	1
PM Peak Hour Volumes:	621	PM Peak Hour Volumes:	1

Warrant Used:

X 100 percent of standard warrants used

70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	6,210	10,600	
Minor Street*	10	2,650	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	6,210	15,900	
Minor Street*	10	1,350	**No**
Combination Warrant			
Major Street	6,210	12,720	
Minor Street*	10	2,120	**No**

* Minor street right-turning traffic volumes reduced by 85% of the capcaity

Left-Turn Lane Warrant Analysis

Project: Stop N Save Development
Intersection: Hagers Grove Rd SE at Western Site Access
Date: 7/6/2022
Scenario: 2024 buildout conditions PM (SB)

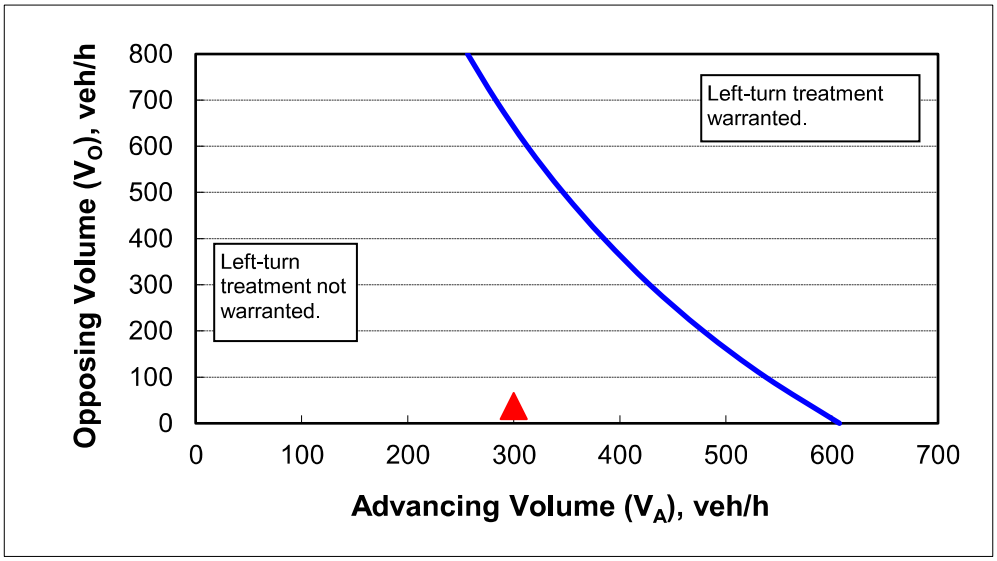
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	13%
Advancing volume (V_A), veh/h:	300
Opposing volume (V_O), veh/h:	37

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	580
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis

Project: Stop N Save Development
Intersection: Hagers Grove Rd SE at Western Site Access
Date: 7/6/2022
Scenario: 2024 buildout conditions AM (SB)

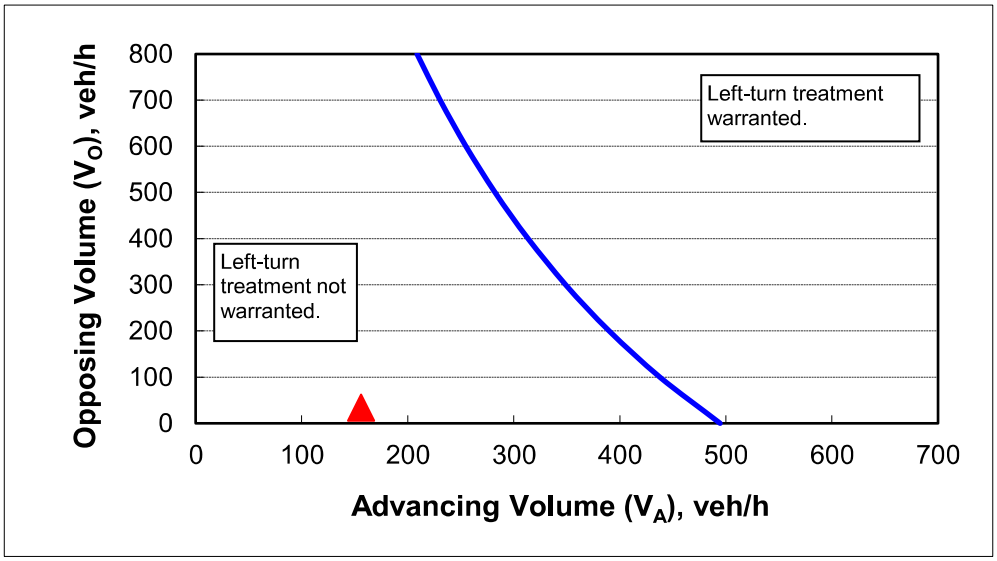
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	22%
Advancing volume (V_A), veh/h:	156
Opposing volume (V_O), veh/h:	34

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	474
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Appendix D – Operations

Capacity Reports

Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	163	4	32	0	34	110
Future Vol, veh/h	163	4	32	0	34	110
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	-	-	-	-	-
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	177	4	35	0	37	120

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	229	35	0	0	35	0
Stage 1	35	-	-	-	-	-
Stage 2	194	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	759	1038	-	-	1576	-
Stage 1	987	-	-	-	-	-
Stage 2	839	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	740	1038	-	-	1576	-
Mov Cap-2 Maneuver	740	-	-	-	-	-
Stage 1	962	-	-	-	-	-
Stage 2	839	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	745	1576	-
HCM Lane V/C Ratio	-	-	0.244	0.023	-
HCM Control Delay (s)	-	-	11.4	7.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1	0.1	-

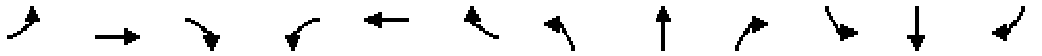
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	273	32	136	0	0
Future Vol, veh/h	0	273	32	136	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
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	0	297	35	148	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	109
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	945
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	945
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	5	79	3	4	70	89	307	2	23	379	75
Future Volume (veh/h)	189	5	79	3	4	70	89	307	2	23	379	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1589	1589	1589	1772	1772	1772	1660	1660	1660	1730	1730	1730
Adj Flow Rate, veh/h	233	6	98	4	5	86	110	379	2	28	468	93
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	15	15	15	2	2	2	10	10	10	5	5	5
Cap, veh/h	450	18	301	92	29	323	133	726	4	33	526	105
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.08	0.44	0.44	0.02	0.38	0.38
Sat Flow, veh/h	1106	78	1275	20	123	1367	1581	1649	9	1647	1401	278
Grp Volume(v), veh/h	233	0	104	95	0	0	110	0	381	28	0	561
Grp Sat Flow(s),veh/h/ln	1106	0	1353	1510	0	0	1581	0	1658	1647	0	1680
Q Serve(g_s), s	5.5	0.0	2.7	0.0	0.0	0.0	2.9	0.0	7.1	0.7	0.0	13.4
Cycle Q Clear(g_c), s	7.7	0.0	2.7	2.2	0.0	0.0	2.9	0.0	7.1	0.7	0.0	13.4
Prop In Lane	1.00		0.94	0.04		0.91	1.00		0.01	1.00		0.17
Lane Grp Cap(c), veh/h	450	0	320	444	0	0	133	0	730	33	0	631
V/C Ratio(X)	0.52	0.00	0.33	0.21	0.00	0.00	0.83	0.00	0.52	0.86	0.00	0.89
Avail Cap(c_a), veh/h	835	0	791	964	0	0	369	0	1395	231	0	1256
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.2	0.0	13.5	13.3	0.0	0.0	19.3	0.0	8.7	20.9	0.0	12.5
Incr Delay (d2), s/veh	0.3	0.0	0.2	0.1	0.0	0.0	4.8	0.0	0.2	20.0	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.7	0.7	0.0	0.0	1.1	0.0	1.7	0.4	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.5	0.0	13.7	13.4	0.0	0.0	24.1	0.0	8.9	40.9	0.0	14.3
LnGrp LOS	B	A	B	B	A	A	C	A	A	D	A	B
Approach Vol, veh/h		337			95			491			589	
Approach Delay, s/veh		15.0			13.4			12.3			15.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	21.1		14.1	4.8	23.8		14.1				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	10.0	32.0		25.0	6.0	36.0		25.0				
Max Q Clear Time (g_c+I1), s	4.9	15.4		4.2	2.7	9.1		9.7				
Green Ext Time (p_c), s	0.0	0.7		0.1	0.0	0.4		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			14.2									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	4.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	135	3	33	0	39	240
Future Vol, veh/h	135	3	33	0	39	240
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	-	-	-	-	-
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	147	3	36	0	42	261

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	381	36	0	0	36	0
Stage 1	36	-	-	-	-	-
Stage 2	345	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	621	1037	-	-	1575	-
Stage 1	986	-	-	-	-	-
Stage 2	717	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	602	1037	-	-	1575	-
Mov Cap-2 Maneuver	602	-	-	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	717	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.8	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	608	1575	-
HCM Lane V/C Ratio	-	-	0.247	0.027	-
HCM Control Delay (s)	-	-	12.8	7.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1	0.1	-

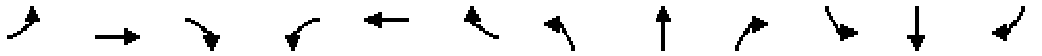
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	375	33	94	0	1
Future Vol, veh/h	0	375	33	94	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
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	0	408	36	102	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	87
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	971
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	971
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	971
HCM Lane V/C Ratio	-	-	-	0.001
HCM Control Delay (s)	-	-	-	8.7
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	293	4	78	1	3	62	71	574	5	89	405	53
Future Volume (veh/h)	293	4	78	1	3	62	71	574	5	89	405	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1758	1758	1758	1744	1744	1744
Adj Flow Rate, veh/h	312	4	83	1	3	66	76	611	5	95	431	56
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	4	4	4
Cap, veh/h	515	19	393	81	22	388	367	678	6	292	605	79
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.04	0.39	0.39	0.05	0.40	0.40
Sat Flow, veh/h	1258	69	1438	5	82	1422	1674	1741	14	1661	1512	196
Grp Volume(v), veh/h	312	0	87	70	0	0	76	0	616	95	0	487
Grp Sat Flow(s),veh/h/ln	1258	0	1507	1508	0	0	1674	0	1755	1661	0	1708
Q Serve(g_s), s	8.7	0.0	2.0	0.0	0.0	0.0	1.2	0.0	15.2	1.6	0.0	11.0
Cycle Q Clear(g_c), s	10.3	0.0	2.0	1.6	0.0	0.0	1.2	0.0	15.2	1.6	0.0	11.0
Prop In Lane	1.00		0.95	0.01		0.94	1.00		0.01	1.00		0.11
Lane Grp Cap(c), veh/h	515	0	412	491	0	0	367	0	684	292	0	683
V/C Ratio(X)	0.61	0.00	0.21	0.14	0.00	0.00	0.21	0.00	0.90	0.33	0.00	0.71
Avail Cap(c_a), veh/h	856	0	820	898	0	0	505	0	1391	404	0	1346
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	0.0	12.9	12.7	0.0	0.0	9.0	0.0	13.2	10.4	0.0	11.6
Incr Delay (d2), s/veh	0.4	0.0	0.1	0.0	0.0	0.0	0.1	0.0	1.8	0.2	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	0.6	0.5	0.0	0.0	0.3	0.0	4.6	0.4	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	0.0	13.0	12.8	0.0	0.0	9.1	0.0	15.0	10.6	0.0	12.1
LnGrp LOS	B	A	B	B	A	A	A	A	B	B	A	B
Approach Vol, veh/h		399			70			692			582	
Approach Delay, s/veh		15.4			12.8			14.4			11.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	23.4		16.6	6.5	22.9		16.6				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	5.8	36.2		25.0	5.6	36.4		25.0				
Max Q Clear Time (g_c+I1), s	3.2	13.0		3.6	3.6	17.2		12.3				
Green Ext Time (p_c), s	0.0	0.6		0.1	0.0	0.7		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			13.7									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	6.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	163	4	33	0	34	115
Future Vol, veh/h	163	4	33	0	34	115
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	-	-	-	-	-
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	177	4	36	0	37	125

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	235	36	0	0	36	0
Stage 1	36	-	-	-	-	-
Stage 2	199	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	753	1037	-	-	1575	-
Stage 1	986	-	-	-	-	-
Stage 2	835	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	734	1037	-	-	1575	-
Mov Cap-2 Maneuver	734	-	-	-	-	-
Stage 1	961	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	739	1575	-
HCM Lane V/C Ratio	-	-	0.246	0.023	-
HCM Control Delay (s)	-	-	11.5	7.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1	0.1	-

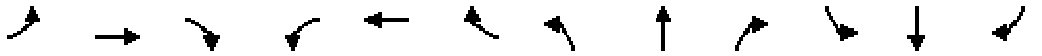
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	278	33	136	0	0
Future Vol, veh/h	0	278	33	136	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
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	0	302	36	148	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	110
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	943
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	943
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	5	80	4	4	73	90	321	2	23	396	75
Future Volume (veh/h)	193	5	80	4	4	73	90	321	2	23	396	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1589	1589	1589	1772	1772	1772	1660	1660	1660	1730	1730	1730
Adj Flow Rate, veh/h	238	6	99	5	5	90	111	396	2	28	489	93
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	15	15	15	2	2	2	10	10	10	5	5	5
Cap, veh/h	445	18	304	90	30	324	135	744	4	32	545	104
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.09	0.45	0.45	0.02	0.39	0.39
Sat Flow, veh/h	1102	77	1276	24	127	1359	1581	1650	8	1647	1413	269
Grp Volume(v), veh/h	238	0	105	100	0	0	111	0	398	28	0	582
Grp Sat Flow(s),veh/h/ln	1102	0	1353	1510	0	0	1581	0	1658	1647	0	1681
Q Serve(g_s), s	5.9	0.0	2.9	0.0	0.0	0.0	3.1	0.0	7.8	0.8	0.0	14.5
Cycle Q Clear(g_c), s	8.3	0.0	2.9	2.4	0.0	0.0	3.1	0.0	7.8	0.8	0.0	14.5
Prop In Lane	1.00		0.94	0.05		0.90	1.00		0.01	1.00		0.16
Lane Grp Cap(c), veh/h	445	0	323	444	0	0	135	0	748	32	0	648
V/C Ratio(X)	0.53	0.00	0.33	0.23	0.00	0.00	0.82	0.00	0.53	0.86	0.00	0.90
Avail Cap(c_a), veh/h	799	0	757	922	0	0	353	0	1335	221	0	1203
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.8	0.0	14.1	13.9	0.0	0.0	20.1	0.0	8.9	21.9	0.0	12.9
Incr Delay (d2), s/veh	0.4	0.0	0.2	0.1	0.0	0.0	4.7	0.0	0.2	20.8	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.8	0.7	0.0	0.0	1.1	0.0	1.9	0.4	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	0.0	14.3	14.0	0.0	0.0	24.8	0.0	9.1	42.7	0.0	14.8
LnGrp LOS	B	A	B	B	A	A	C	A	A	D	A	B
Approach Vol, veh/h		343			100			509			610	
Approach Delay, s/veh		15.6			14.0			12.5			16.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	22.2		14.7	4.9	25.2		14.7				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	10.0	32.0		25.0	6.0	36.0		25.0				
Max Q Clear Time (g_c+I1), s	5.1	16.5		4.4	2.8	9.8		10.3				
Green Ext Time (p_c), s	0.0	0.7		0.2	0.0	0.4		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		14.7	
HCM 6th LOS		B	

Intersection	
Int Delay, s/veh	4.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	135	3	35	0	39	251
Future Vol, veh/h	135	3	35	0	39	251
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	-	-	-	-	-
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	147	3	38	0	42	273

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	395	38	0	0	38	0
Stage 1	38	-	-	-	-	-
Stage 2	357	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	610	1034	-	-	1572	-
Stage 1	984	-	-	-	-	-
Stage 2	708	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	591	1034	-	-	1572	-
Mov Cap-2 Maneuver	591	-	-	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	708	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	597	1572	-
HCM Lane V/C Ratio	-	-	0.251	0.027	-
HCM Control Delay (s)	-	-	13	7.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1	0.1	-

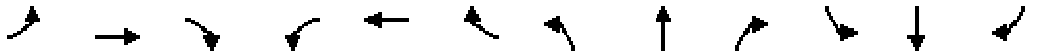
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	386	35	94	0	1
Future Vol, veh/h	0	386	35	94	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
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	0	420	38	102	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	89
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	969
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	969
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	969
HCM Lane V/C Ratio	-	-	-	0.001
HCM Control Delay (s)	-	-	-	8.7
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	303	4	79	1	3	64	72	598	5	93	423	54
Future Volume (veh/h)	303	4	79	1	3	64	72	598	5	93	423	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1758	1758	1758	1744	1744	1744
Adj Flow Rate, veh/h	322	4	84	1	3	68	77	636	5	99	450	57
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	4	4	4
Cap, veh/h	512	19	400	76	22	396	359	698	5	281	626	79
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.04	0.40	0.40	0.06	0.41	0.41
Sat Flow, veh/h	1256	68	1438	4	80	1424	1674	1742	14	1661	1517	192
Grp Volume(v), veh/h	322	0	88	72	0	0	77	0	641	99	0	507
Grp Sat Flow(s),veh/h/ln	1256	0	1507	1508	0	0	1674	0	1755	1661	0	1709
Q Serve(g_s), s	9.6	0.0	2.2	0.0	0.0	0.0	1.3	0.0	16.9	1.7	0.0	12.2
Cycle Q Clear(g_c), s	11.4	0.0	2.2	1.8	0.0	0.0	1.3	0.0	16.9	1.7	0.0	12.2
Prop In Lane	1.00		0.95	0.01		0.94	1.00		0.01	1.00		0.11
Lane Grp Cap(c), veh/h	512	0	420	494	0	0	359	0	704	281	0	705
V/C Ratio(X)	0.63	0.00	0.21	0.15	0.00	0.00	0.21	0.00	0.91	0.35	0.00	0.72
Avail Cap(c_a), veh/h	802	0	768	841	0	0	476	0	1303	378	0	1268
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	13.6	13.4	0.0	0.0	9.4	0.0	13.9	11.1	0.0	12.0
Incr Delay (d2), s/veh	0.5	0.0	0.1	0.0	0.0	0.0	0.1	0.0	2.0	0.3	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.7	0.5	0.0	0.0	0.3	0.0	5.3	0.4	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.1	0.0	13.7	13.5	0.0	0.0	9.5	0.0	15.9	11.3	0.0	12.5
LnGrp LOS	B	A	B	B	A	A	A	A	B	B	A	B
Approach Vol, veh/h		410			72			718			606	
Approach Delay, s/veh		16.4			13.5			15.2			12.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	25.2		17.7	6.7	24.7		17.7				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	5.6	36.4		25.0	5.6	36.4		25.0				
Max Q Clear Time (g_c+I1), s	3.3	14.2		3.8	3.7	18.9		13.4				
Green Ext Time (p_c), s	0.0	0.6		0.1	0.0	0.8		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	33	0	7	0
Future Vol, veh/h	0	0	33	0	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
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	0	0	36	0	8	0

Major/Minor	Major2		Minor1	
Conflicting Flow All	0	0	72	-
Stage 1	-	-	0	-
Stage 2	-	-	72	-
Critical Hdwy	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.42	-
Follow-up Hdwy	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	-	932	0
Stage 1	-	-	-	0
Stage 2	-	-	951	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	932	-
Mov Cap-2 Maneuver	-	-	932	-
Stage 1	-	-	-	-
Stage 2	-	-	951	-

Approach	WB	NB
HCM Control Delay, s		8.9
HCM LOS		A

Minor Lane/Major Mvmt	NBLn1	WBL	WBT
Capacity (veh/h)	932	-	-
HCM Lane V/C Ratio	0.008	-	-
HCM Control Delay (s)	8.9	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0	-	-

Intersection	
Int Delay, s/veh	7.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	216	4	33	1	34	122
Future Vol, veh/h	216	4	33	1	34	122
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	-	-	-	-	-
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	235	4	36	1	37	133

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	244	37	0	0	37	0
Stage 1	37	-	-	-	-	-
Stage 2	207	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	744	1035	-	-	1574	-
Stage 1	985	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	725	1035	-	-	1574	-
Mov Cap-2 Maneuver	725	-	-	-	-	-
Stage 1	960	-	-	-	-	-
Stage 2	828	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	729	1574	-
HCM Lane V/C Ratio	-	-	0.328	0.023	-
HCM Control Delay (s)	-	-	12.3	7.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.4	0.1	-

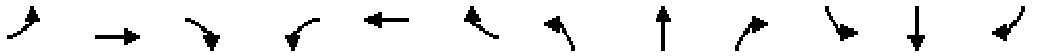
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	338	34	163	0	1
Future Vol, veh/h	0	338	34	163	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
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	0	367	37	177	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	126
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	924
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	924
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	924
HCM Lane V/C Ratio	-	-	-	0.001
HCM Control Delay (s)	-	-	-	8.9
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	231	6	101	4	5	73	117	301	2	23	381	75
Future Volume (veh/h)	231	6	101	4	5	73	117	301	2	23	381	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1589	1589	1589	1772	1772	1772	1660	1660	1660	1730	1730	1730
Adj Flow Rate, veh/h	285	7	125	5	6	90	144	372	2	28	470	93
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	15	15	15	2	2	2	10	10	10	5	5	5
Cap, veh/h	476	20	354	85	40	373	319	713	4	432	520	103
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.08	0.43	0.43	0.02	0.37	0.37
Sat Flow, veh/h	1101	72	1281	22	143	1348	1581	1649	9	1647	1402	277
Grp Volume(v), veh/h	285	0	132	101	0	0	144	0	374	28	0	563
Grp Sat Flow(s),veh/h/ln	1101	0	1353	1513	0	0	1581	0	1658	1647	0	1680
Q Serve(g_s), s	8.4	0.0	3.7	0.0	0.0	0.0	2.5	0.0	7.9	0.5	0.0	15.2
Cycle Q Clear(g_c), s	10.9	0.0	3.7	2.5	0.0	0.0	2.5	0.0	7.9	0.5	0.0	15.2
Prop In Lane	1.00		0.95	0.05		0.89	1.00		0.01	1.00		0.17
Lane Grp Cap(c), veh/h	476	0	374	497	0	0	319	0	717	432	0	623
V/C Ratio(X)	0.60	0.00	0.35	0.20	0.00	0.00	0.45	0.00	0.52	0.06	0.00	0.90
Avail Cap(c_a), veh/h	631	0	565	708	0	0	379	0	918	589	0	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.2	0.0	13.9	13.4	0.0	0.0	10.6	0.0	10.0	9.3	0.0	14.2
Incr Delay (d2), s/veh	0.5	0.0	0.2	0.1	0.0	0.0	0.4	0.0	0.2	0.0	0.0	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	1.0	0.8	0.0	0.0	0.6	0.0	2.1	0.1	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.6	0.0	14.1	13.5	0.0	0.0	11.0	0.0	10.2	9.3	0.0	20.8
LnGrp LOS	B	A	B	B	A	A	B	A	B	A	A	C
Approach Vol, veh/h		417			101			518			591	
Approach Delay, s/veh		15.8			13.5			10.4			20.3	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	22.8		17.2	4.9	25.7		17.2				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	5.7	26.3		20.0	5.5	26.5		20.0				
Max Q Clear Time (g_c+I1), s	4.5	17.2		4.5	2.5	9.9		12.9				
Green Ext Time (p_c), s	0.0	0.6		0.1	0.0	0.4		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			15.6									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	44	0	10	0
Future Vol, veh/h	0	0	44	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
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	0	0	48	0	11	0

Major/Minor	Major2		Minor1	
Conflicting Flow All	0	0	96	-
Stage 1	-	-	0	-
Stage 2	-	-	96	-
Critical Hdwy	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.42	-
Follow-up Hdwy	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	-	903	0
Stage 1	-	-	-	0
Stage 2	-	-	928	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	903	-
Mov Cap-2 Maneuver	-	-	903	-
Stage 1	-	-	-	-
Stage 2	-	-	928	-

Approach	WB	NB
HCM Control Delay, s		9
HCM LOS		A

Minor Lane/Major Mvmt	NBLn1	WBL	WBT
Capacity (veh/h)	903	-	-
HCM Lane V/C Ratio	0.012	-	-
HCM Control Delay (s)	9	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0	-	-

Intersection	
Int Delay, s/veh	6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	196	3	35	2	39	261
Future Vol, veh/h	196	3	35	2	39	261
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	-	-	-	-	-
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	213	3	38	2	42	284

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	407	39	0	0	40	0
Stage 1	39	-	-	-	-	-
Stage 2	368	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	600	1033	-	-	1570	-
Stage 1	983	-	-	-	-	-
Stage 2	700	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	581	1033	-	-	1570	-
Mov Cap-2 Maneuver	581	-	-	-	-	-
Stage 1	952	-	-	-	-	-
Stage 2	700	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.7	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	585	1570	-
HCM Lane V/C Ratio	-	-	0.37	0.027	-
HCM Control Delay (s)	-	-	14.7	7.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.7	0.1	-

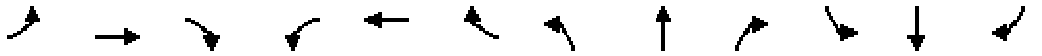
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	457	37	127	0	1
Future Vol, veh/h	0	457	37	127	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
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	0	497	40	138	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	109
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	945
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	945
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	945
HCM Lane V/C Ratio	-	-	-	0.001
HCM Control Delay (s)	-	-	-	8.8
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	348	6	103	1	5	64	105	575	5	93	407	54
Future Volume (veh/h)	348	6	103	1	5	64	105	575	5	93	407	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1772	1772	1772	1772	1758	1758	1758	1744	1744	1744
Adj Flow Rate, veh/h	370	6	110	1	5	68	112	612	5	99	433	57
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	4	4	4
Cap, veh/h	544	24	448	70	37	436	351	670	5	268	571	75
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.06	0.38	0.38	0.06	0.38	0.38
Sat Flow, veh/h	1254	78	1431	4	119	1392	1674	1741	14	1661	1509	199
Grp Volume(v), veh/h	370	0	116	74	0	0	112	0	617	99	0	490
Grp Sat Flow(s),veh/h/ln	1254	0	1509	1514	0	0	1674	0	1755	1661	0	1708
Q Serve(g_s), s	12.4	0.0	3.0	0.0	0.0	0.0	2.1	0.0	17.6	1.9	0.0	13.2
Cycle Q Clear(g_c), s	14.3	0.0	3.0	1.9	0.0	0.0	2.1	0.0	17.6	1.9	0.0	13.2
Prop In Lane	1.00		0.95	0.01		0.92	1.00		0.01	1.00		0.12
Lane Grp Cap(c), veh/h	544	0	472	543	0	0	351	0	675	268	0	646
V/C Ratio(X)	0.68	0.00	0.25	0.14	0.00	0.00	0.32	0.00	0.91	0.37	0.00	0.76
Avail Cap(c_a), veh/h	815	0	799	870	0	0	423	0	1109	350	0	1079
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	13.5	13.1	0.0	0.0	10.8	0.0	15.4	12.2	0.0	14.3
Incr Delay (d2), s/veh	0.6	0.0	0.1	0.0	0.0	0.0	0.2	0.0	4.6	0.3	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	0.9	0.6	0.0	0.0	0.6	0.0	6.3	0.5	0.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	0.0	13.6	13.2	0.0	0.0	10.9	0.0	20.1	12.6	0.0	15.0
LnGrp LOS	B	A	B	B	A	A	B	A	C	B	A	B
Approach Vol, veh/h		486			74			729			589	
Approach Delay, s/veh		16.7			13.2			18.7			14.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	25.0		20.5	7.0	25.3		20.5				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	5.6	33.4		28.0	5.6	33.4		28.0				
Max Q Clear Time (g_c+I1), s	4.1	15.2		3.9	3.9	19.6		16.3				
Green Ext Time (p_c), s	0.0	0.6		0.1	0.0	0.7		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		16.7	
HCM 6th LOS		B	

Signalized Intersection V/C Calculation Summary

MORNING PEAK HOUR

Intersection 4: Hagers Grove Road SE & Carson Drive

Year 2022	Protected/Permitted Left-Turn Phasing						Permitted Left-Turn Phasing					
Critical Movement:	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Adjusted Flow Rate:	110	379	2	28	468	93	233	6	98	4	5	86
Saturated Flow:	1581	1649	9	1647	1401	278	1106	78	1275	20	123	1367
Flow Ratio:	0.07	0.23	0.22	0.02	0.33	0.33	0.21	0.08	0.08	0.20	0.04	0.06
			0.40						0.21			

Sum of Critical Flow Ratios:	0.61	Critical Intersection V/C:	0.77
Cycle Length (seconds):	80		
Lost Time per phase (seconds):	4		
Number of Phases:	4		

Year 2024 Background	Protected/Permitted Left-Turn Phasing						Permitted Left-Turn Phasing					
Critical Movement:	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Adjusted Flow Rate:	111	396	2	28	489	93	238	6	99	5	5	90
Saturated Flow:	1581	1650	8	1647	1413	269	1102	77	1276	24	127	1359
Flow Ratio:	0.07	0.24	0.25	0.02	0.35	0.35	0.22	0.08	0.08	0.21	0.04	0.07
			0.42						0.22			

Sum of Critical Flow Ratios:	0.63	Critical Intersection V/C:	0.79
Cycle Length (seconds):	80		
Lost Time per phase (seconds):	4		
Number of Phases:	4		

Year 2024 Buildout	Protected/Permitted Left-Turn Phasing						Permitted Left-Turn Phasing					
Critical Movement:	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Adjusted Flow Rate:	144	372	2	28	470	93	285	7	125	5	6	90
Saturated Flow:	1581	1649	9	1647	1403	277	1101	72	1281	22	142	1348
Flow Ratio:	0.09	0.23	0.22	0.02	0.33	0.34	0.26	0.10	0.10	0.23	0.04	0.07
			0.43						0.26			

Sum of Critical Flow Ratios:	0.69	Critical Intersection V/C:	0.86
Cycle Length (seconds):	80		
Lost Time per phase (seconds):	4		
Number of Phases:	4		

EVENING PEAK HOUR

Intersection 4: Hagers Grove Road SE & Carson Drive

Year 2022	Protected/Permitted Left-Turn Phasing						Permitted Left-Turn Phasing					
Critical Movement:	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Adjusted Flow Rate:	76	611	5	95	431	56	312	4	83	1	3	66
Saturated Flow:	1674	1741	14	1661	1512	196	1258	69	1438	4	82	1422
Flow Ratio:	0.05	0.35	0.36	0.06	0.29	0.29	0.25	0.06	0.06	0.25	0.04	0.05
			0.41						0.25			

Sum of Critical Flow Ratios:	0.66	Critical Intersection V/C:	0.83
Cycle Length (seconds):	80		
Lost Time per phase (seconds):	4		
Number of Phases:	4		

Year 2024 Background	Protected/Permitted Left-Turn Phasing						Permitted Left-Turn Phasing					
Critical Movement:	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Adjusted Flow Rate:	77	636	5	99	450	57	322	4	84	1	3	68
Saturated Flow:	1674	1742	14	1661	1517	192	1256	68	1438	4	80	1424
Flow Ratio:	0.05	0.37	0.36	0.06	0.30	0.30	0.26	0.06	0.06	0.25	0.04	0.05
			0.42						0.26			

Sum of Critical Flow Ratios:	0.68	Critical Intersection V/C:	0.85
Cycle Length (seconds):	80		
Lost Time per phase (seconds):	4		
Number of Phases:	4		

Year 2042 Buildout	Protected/Permitted Left-Turn Phasing						Permitted Left-Turn Phasing					
Critical Movement:	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Adjusted Flow Rate:	112	617	5	99	433	57	370	6	110	1	5	68
Saturated Flow:	1674	1741	14	1661	1511	198	1254	79	1430	4	119	1392
Flow Ratio:	0.07	0.35	0.36	0.06	0.29	0.29	0.30	0.08	0.08	0.25	0.04	0.05
			0.42						0.30			

Sum of Critical Flow Ratios:	0.71	Critical Intersection V/C:	0.89
Cycle Length (seconds):	80		
Lost Time per phase (seconds):	4		
Number of Phases:	4		

Notes:

Since NB and SB left-turn phases are protected, critical ring is either EBL+WBT or WBL+EBT - HCM6 does not show reductions for permitted left turns

Since EB and WB left-turn phases are permitted, critical ring is maximum of any lane group.