



lancaster
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SW Ibach St Subdivision

Transportation Impact Study

Tualatin, Oregon

Date:

November 11, 2025

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EXPIRES: 06/30/27

Table of Contents

Executive Summary	4
Project Description	5
Introduction	5
Location Description	5
Site Trips	10
Trip Generation	10
Trip Distribution	10
Traffic Volumes	12
Existing Conditions	12
Background Conditions	12
Buildout Conditions	13
Safety Analysis	17
Crash History Review	17
Access Spacing	18
Offset Site Access Intersection	19
Sight Distance Evaluation	19
Warrant Analysis	20
Pedestrian Crossing Analysis	20
Operational Analysis	23
Performance Standards	23
Delay & Capacity Analysis	23
Influence of School Traffic	24
Queuing Analysis	24
Conclusions	27



List of Appendices

Appendix A

Site Plan

Appendix B

Trip Generation Calculations

Appendix C

Traffic Counts

Appendix D

Crash History Data

Preliminary Traffic Signal Warrants

Left-Turn Lane Warrants

Appendix E

Definitions

Synchro Reports

Queuing Reports



List of Figures

Figure 1: Aerial Photo of Site Vicinity (Image from Google Earth)	6
Figure 2: Vicinity Map	8
Figure 3: Trip Distribution and Assignment	11
Figure 4: Year 2025 Existing Conditions	14
Figure 5: Year 2027 Background Conditions	15
Figure 6: Year 2027 Buildout Conditions	16

List of Tables

Table 1: Vicinity Roadway Descriptions	6
Table 2: Study Intersection Descriptions	7
Table 3: Transit Line Description	9
Table 4: Trip Generation Summary	10
Table 5: Crash Type Summary	18
Table 6: Crash Severity and Rate Summary	18
Table 7: Pedestrian Summary	21
Table 8: Capacity Analysis Summary	23
Table 9: Queuing Analysis Summary	25



Executive Summary

1. The proposed SW Ibach Street Subdivision will include a 28 lot townhouse subdivision located at 10150 SW Ibach Street (Tax Lot: 2S135BB02100) in Tualatin, Oregon. Access to the site will be provided via two proposed roadway connections along SW Ibach Street and SW 103rd Avenue.
2. The trip generation calculations show that the proposed project is projected to generate an additional 12 morning peak hour trips, 15 evening peak hour trips, and 192 average weekday trips.
3. Based on the most recent five years of available crash data, no significant trends or crash patterns were identified at any of the study intersections that were indicative of safety concerns. Accordingly, no safety mitigation is recommended.
4. The proposed site accesses along SW Ibach Street and SW 103rd Avenue have available sight distance which exceeds the ISD recommendations and SSD requirements in both directions. No mitigation is necessary or recommended with regard to sight distance at the site access intersections.
5. Left-turn warrants are not met at any of the proposed site accesses for the SW Ibach Subdivision development. No left-turn lanes are planned or proposed at the site accesses.
6. Traffic signal warrants are not projected to be met at any of the unsignalized study intersections under year 2027 conditions, regardless of whether or not the proposed development is constructed. Therefore, no new traffic signals are necessary or recommended as part of the proposed development application.
7. Based on the results of the pedestrian crossing analysis, all study intersections are currently operating safely and are projected to continue operating safely with the proposed development in the future. Accordingly, no pedestrian crossing mitigation is necessary or recommended at the study intersections.
8. All study intersections are currently operating acceptably per the agency standards and are projected to continue operating acceptably through the 2027 buildout year of the site. Accordingly, no operational mitigation is necessary or recommended at the study intersections.
9. In general, changes in 95th percentile queuing between the year 2027 background and buildout conditions are anticipated to be small. Although the 95th percentile queues at the intersection of SW Ibach Street & SW Boones Ferry Road are estimated to extend beyond available storage, the majority of the queues would be present under both background and buildout conditions. The proposed SW Ibach St Subdivision will not measurably change any of these queues.
10. The intersection of SW Ibach Street & SW Boones Ferry Road will operate acceptably with the proposed subdivision in place, including during the school year. Traffic counts near the project site while school was in session were not available, but a sensitivity analysis shows that even with double the volume of traffic, the intersections will still operate favorably and well within applicable performance standards.
11. Construction of street frontage improvements with this project will improve safety for all travel modes by providing missing sidewalks and removing vegetation to open up sight lines near the street.



Project Description

Introduction

The proposed SW Ibach Street Subdivision will include a 28 lot townhouse subdivision located at 10150 SW Ibach Street (Tax Lot: 2S135BB02100) in Tualatin, Oregon. Access to the site will be provided via two proposed roadway connections along SW Ibach Street and SW 103rd Avenue.

Based on correspondence with the City of Tualatin staff, the report conducts safety and capacity/level of service analyses at the following intersections during the morning and evening peak hours:

1. SW Ibach Street & SW 103rd Avenue
2. SW Ibach Street & Site Access
3. Site Access/SW Gardner Court & SW 103rd Avenue
4. SW Ibach Street & SW Grahams Ferry Road
5. SW Ibach Street & SW Boones Ferry Road

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 appendices to this report.

Location Description

The project site is located southeast of the intersection at SW Ibach Street and SW 103rd Avenue in Tualatin, Oregon. The subject site is located in an urbanized, predominately residential area of Tualatin, and is surrounded by residential land uses in all directions except Ibach Park to the northwest. The site includes a single property (Tax Lot 2S135BB02100) which encompasses an approximate total of ±1.76 acres. The site currently has a single-family home, which will be removed upon redevelopment of the site.

Figure 1 presents an aerial image of the nearby vicinity with the project site outlined in yellow. A site plan is included in Appendix A.



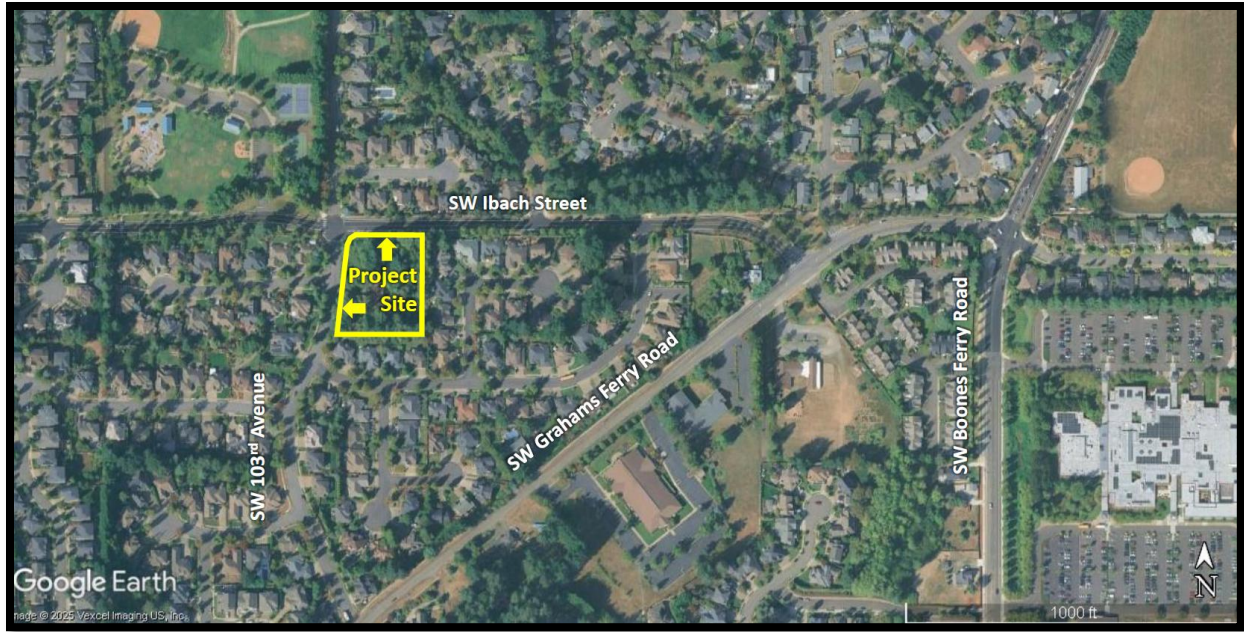


Figure 1: Aerial Photo of Site Vicinity (Image from Google Earth)

Vicinity Streets

The proposed development is expected to impact five roadways near the site. Table 1 provides a description of these vicinity roadways.

Table 1: Vicinity Roadway Descriptions

Street Name	Jurisdiction	Functional Classification	Speed (MPH)	On-Street Parking	Curbs & Sidewalks	Bicycle Lanes
SW Ibach Street/Court	City of Tualatin	Major/Minor Collector/Local	25/35	Partially Permitted	Both Sides	Partially Both Sides
SW 103th Avenue/Court	City of Tualatin	Minor Collector/Local	25 (Statutory)	Partially Permitted	Partially Both Sides	None
SW Gardner Court	City of Tualatin	Local	25 (Statutory)	Permitted	Both Sides	None
SW Grahams Ferry Road	City of Tualatin	Major Collector	35	Not Permitted	Partially Both Sides	Partially Both Sides
SW Boones Ferry Road	City of Tualatin	Major Arterial	35	Not Permitted	Both Sides	Both Sides

Table Notes: Jurisdiction and functional classification based on Tualatin Transportation System Plan Update Figure 1 and ODOT TransGIS website.

Study Intersections

Based on coordination with agency staff, five intersections were identified for analysis. A summarized description of these study intersections, under their future planned/proposed lane configurations, is provided in Table 2.

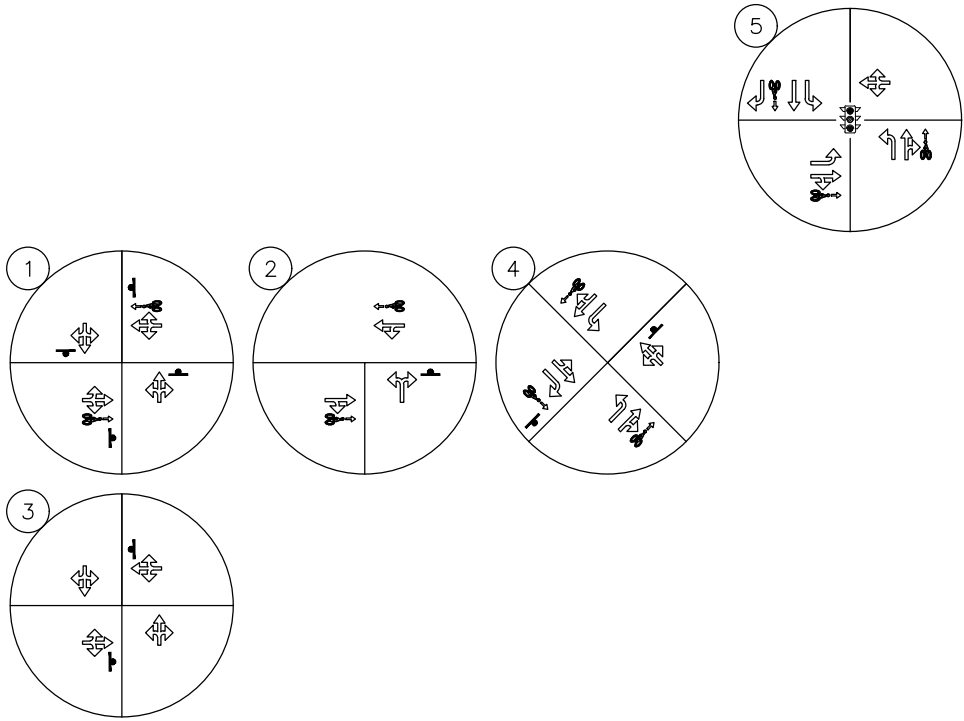
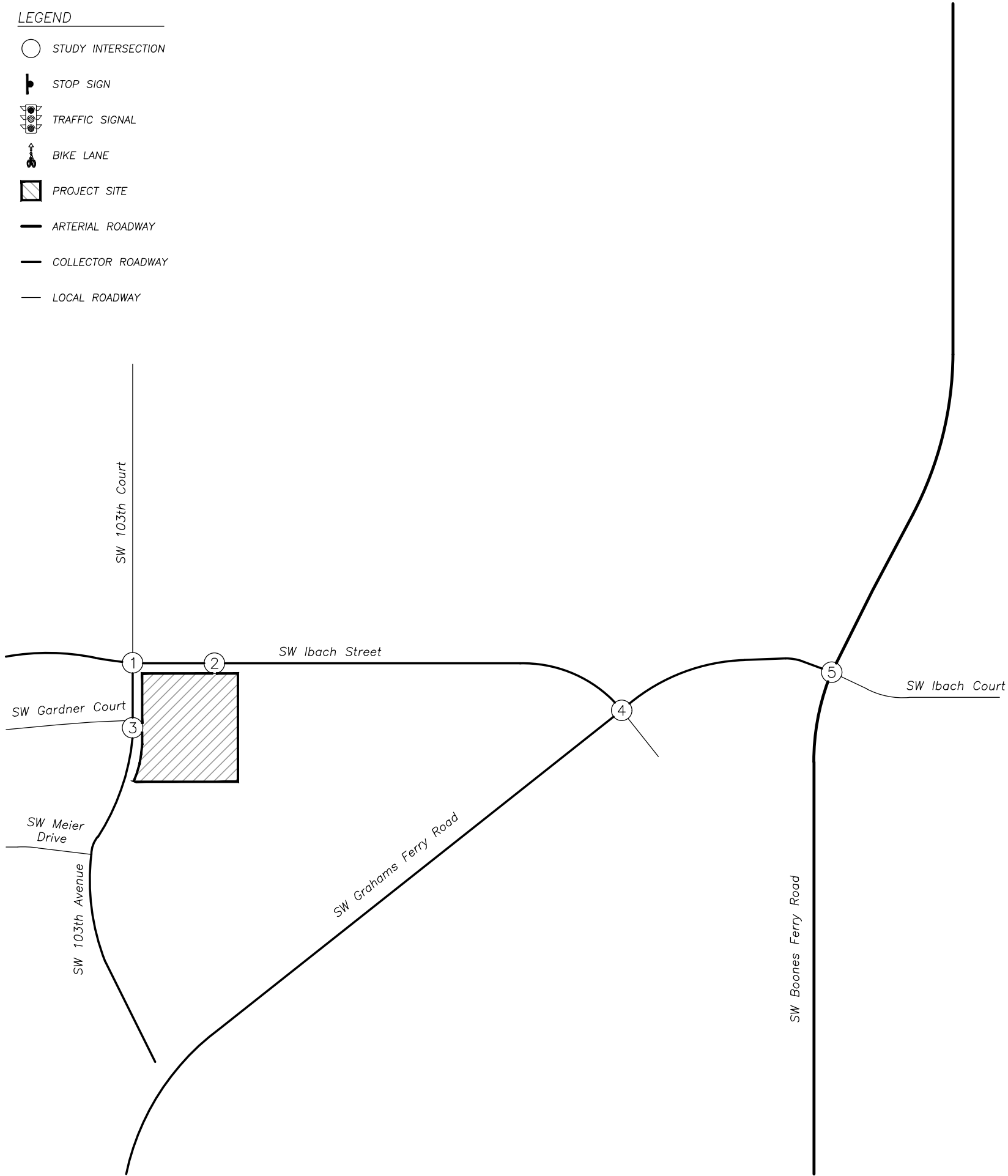
Table 2: Study Intersection Descriptions

Number	Intersection	Geometry	Traffic Control	Phasing/Stopped Approaches
1	SW Ibach Street & SW 103 rd Avenue	Four-Legged	Stop-Controlled	All-Way Stop Control
2	SW Ibach Street & Site Access	Three-Legged	Stop-Controlled	NB Stop Control
3	Site Access/SW Gardner Court & SW 103 rd Avenue	Four-Legged	Stop-Controlled	EB/WB Stop Control
4	SW Ibach Street & SW Grahams Ferry Road	Four-Legged	Stop-Controlled	NWB/SEB Stop Control
5	SW Ibach Street & SW Boones Ferry Road	Four-Legged	Traffic Signal	Permitted EB/WB Left-turns, Protected/FYA NB/SB Left-turns

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

LEGEND

- STUDY INTERSECTION
- STOP SIGN
- TRAFFIC SIGNAL
- BIKE LANE
- PROJECT SITE
- ARTERIAL ROADWAY
- COLLECTOR ROADWAY
- LOCAL ROADWAY



VICINITY MAP

Figure 2

SW Ibach St Subdivision

11/11/2025

Pedestrian Facilities

Within the study area, there are sidewalks along most sections of the roadways. The frontage improvements for the proposed development will include sidewalks along both SW Ibach Street and SW 103rd Avenue. These sidewalks will connect to other pedestrian facilities along the public roads and the larger pedestrian system. With the completion of the frontage improvements, the connection to the bus stops and Tualatin High School to the east, and the public park (Ibach Park) to the northwest will be available.

Bicycle Facilities

Bicycle facilities in the study area are similar to the pedestrian facilities. Bike lanes are developed along portions of vicinity roadways including SW Ibach Street, SW Grahams Ferry Road, and SW Boones Ferry Road. The access to the bus stops and Tualatin High School to the east, and the public park (Ibach Park) to the northwest is available.

Transit Access

Route 96 – TriMet provides weekday (Mon – Fri) services near the project site. The nearest bus stop to the site is located near the intersection of SW Ibach Street and SW Boones Ferry Road, approximately 1,950 feet east of the site. The summarized description of the transit line is shown in Table 3.

Table 3: Transit Line Description

Transit Line (TriMet)	Service Area	Day of Week	Service Times	Typical Headways (Minutes)	Nearest Stops
Bus Line #96 – Tualatin/I-5	Portland City Center, Tualatin	Weekday	5:15 AM - 9:08 PM	30	SW Ibach Street at SW Boones Ferry Road
		Weekend	No Service		



Site Trips

Trip Generation

The proposed development will include the construction of a 28-lot townhouse subdivision while removing the existing single-family dwelling. To estimate the number of trips that will be generated by the existing and proposed land uses, rates from the *Trip Generation Manual*¹ were used. Data from Land Use Code (LUC) 210, *Single-Family Detached Housing*, was used to estimate trip generation of the existing use and data from Land Use Code (LUC) 215, *Single-Family Attached Housing*, was used to estimate trip generation of the proposed use. Both existing and proposed use trip generation were based on the number of dwelling units.

The trip generation calculations show that the proposed project is projected to generate an additional 12 morning peak hour trips, 15 evening peak hour trips, and 192 average weekday trips. The trip generation estimates are summarized in Table 4. Detailed trip generation calculations are included in Appendix B.

Table 4: Trip Generation Summary

Land Use Assumption (ITE Code)	Intensity	Morning Peak Hour			Evening Peak Hour			Weekday Trips
		In	Out	Total	In	Out	Total	
Existing Condition								
Single-Family Detached Housing (210)	1 unit	0	1	1	1	0	1	10
Proposed Condition								
Single-Family Attached Housing (215)	28 unit	3	10	13	9	7	16	202
Total Net New Trips		3	9	12	8	7	15	192

Trip Distribution

The directional distribution of site trips to and from the proposed project site was estimated based on locations of likely destinations and locations of major transportation facilities in the site vicinity. The following trip distribution was used for analysis:

- Approximately 35% of site trips will travel to/from the north along SW Boones Ferry Road.
- Approximately 30% of site trips will travel to/from the south along SW Boones Ferry Road.
- Approximately 25% of site trips will travel to/from the west along SW Ibach Street.
- Approximately 5% of site trips will travel to/from the southwest along SW Grahams Ferry Road.
- Approximately 5% of site trips will travel to/from the south along SW 103rd Avenue.

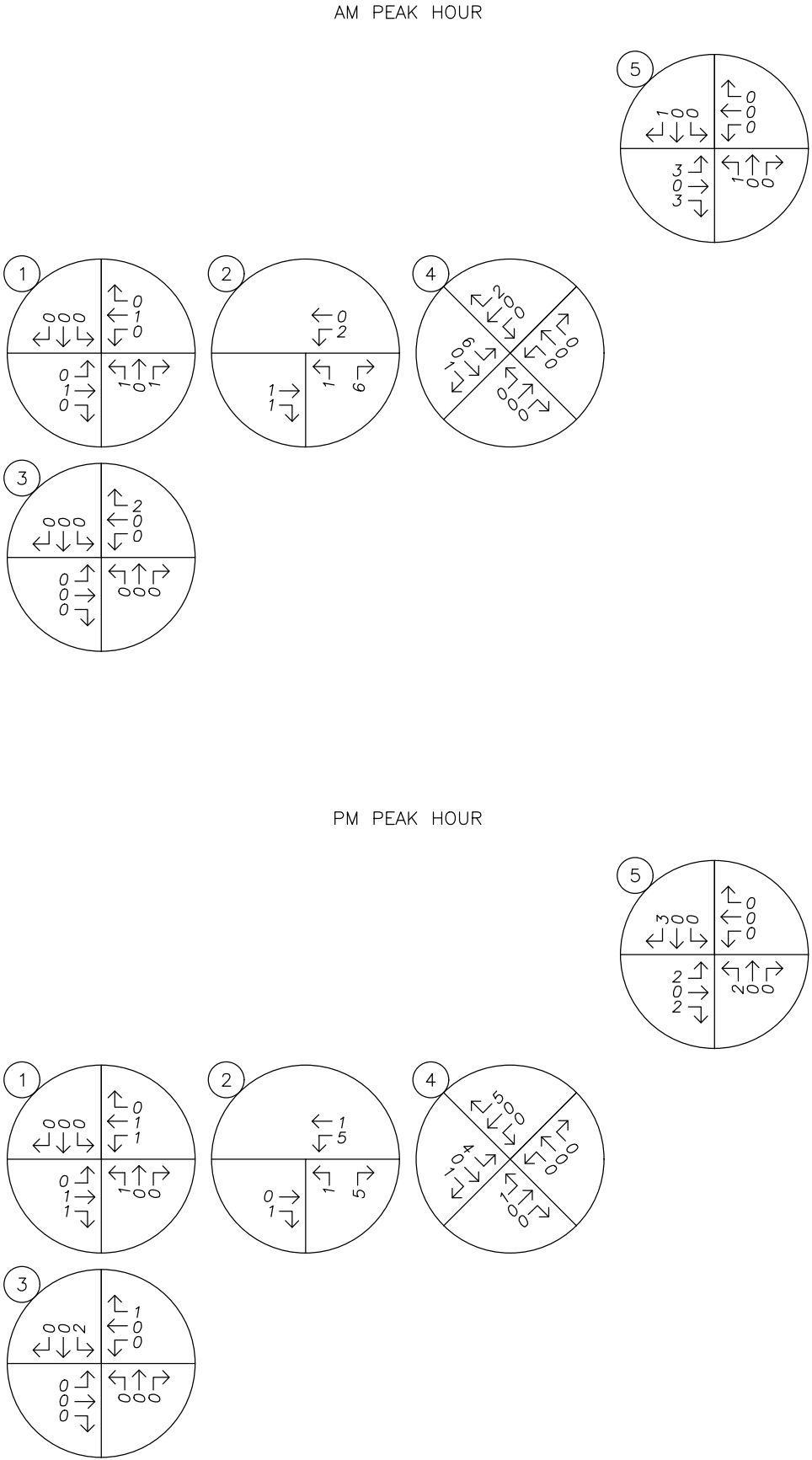
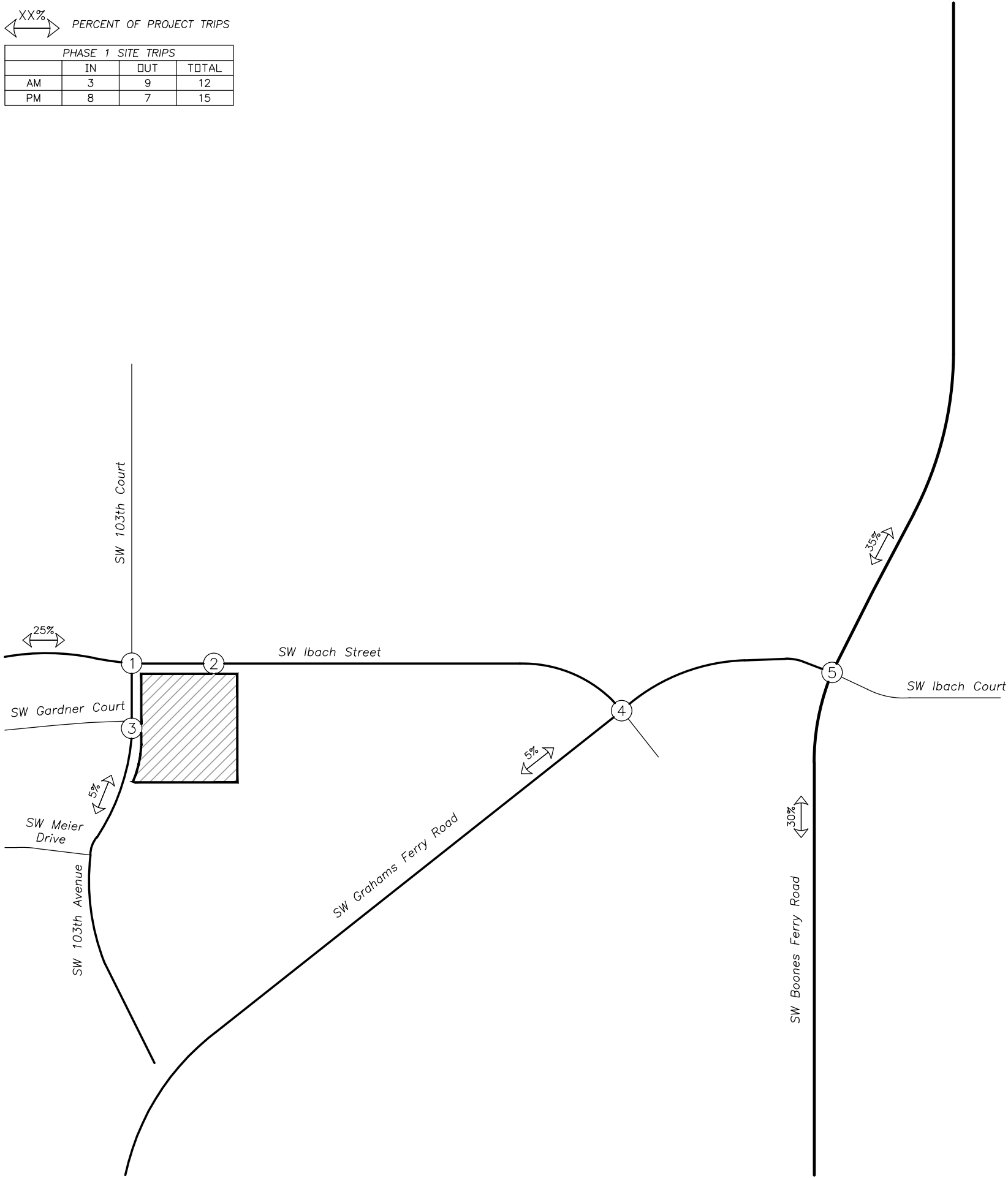
The trip distribution and assignment for the site trips generated during the morning and evening peak hours are shown in Figure 3.

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

XX%

PERCENT OF PROJECT TRIPS

PHASE 1 SITE TRIPS			
	IN	OUT	TOTAL
AM	3	9	12
PM	8	7	15



4

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AM PEAK HOUR

PM PEAK HOUR



Traffic Volumes

Existing Conditions

Traffic counts were conducted at the study intersections from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM on the following dates.

- SW Ibach Street & SW 103rd Avenue (Thursday, July 24, 2025)
- SW Ibach Street & Site Access
- Site Access/SW Gardner Court & SW 103rd Avenue (Thursday, July 24, 2025)
- SW Ibach Street & SW Grahams Ferry Road (Thursday, July 24, 2025)
- SW Ibach Street & SW Boones Ferry Road (Thursday, May 30, 2024)

Data was used from each intersection's respective morning and evening peak hours. For the proposed access intersection along SW Ibach Street, major street through volumes were estimated via volume balancing with the intersection of SW Ibach Street & SW 103rd Avenue. Raw count data is included in Appendix C.

The intersection of SW Ibach Street & SW Boones Ferry Road is the most congested intersection in the study area while school is in session. Per the recommendation of the City's staff, the traffic counts collected in May 2024 were used for the intersection of SW Ibach Street & SW Boones Ferry Road. Also, the operation of the intersections near the site are addressed in more detail in the "Operational Analysis" section to reflect the school traffic.

In order to approximate the existing year 2025 traffic volumes for the intersection of SW Ibach Street & SW Boones Ferry Road, a conservative compounded growth rate of two percent per year over a one-year period was applied to all turning movements at the study intersection.

Figure 4 shows the year 2025 existing traffic volumes at the study intersections during the morning and evening peak hours.

Background Conditions

To provide an analysis of the impact of the proposed development on the nearby transportation facilities, an estimate of future traffic volumes is required. It is expected that the proposed development will be constructed and in operation by year 2027. In order to approximate the future year 2027 traffic volumes at the study intersections, a conservative compounded growth rate of two percent per year over a two-year period were applied to all turning movements and study intersections.

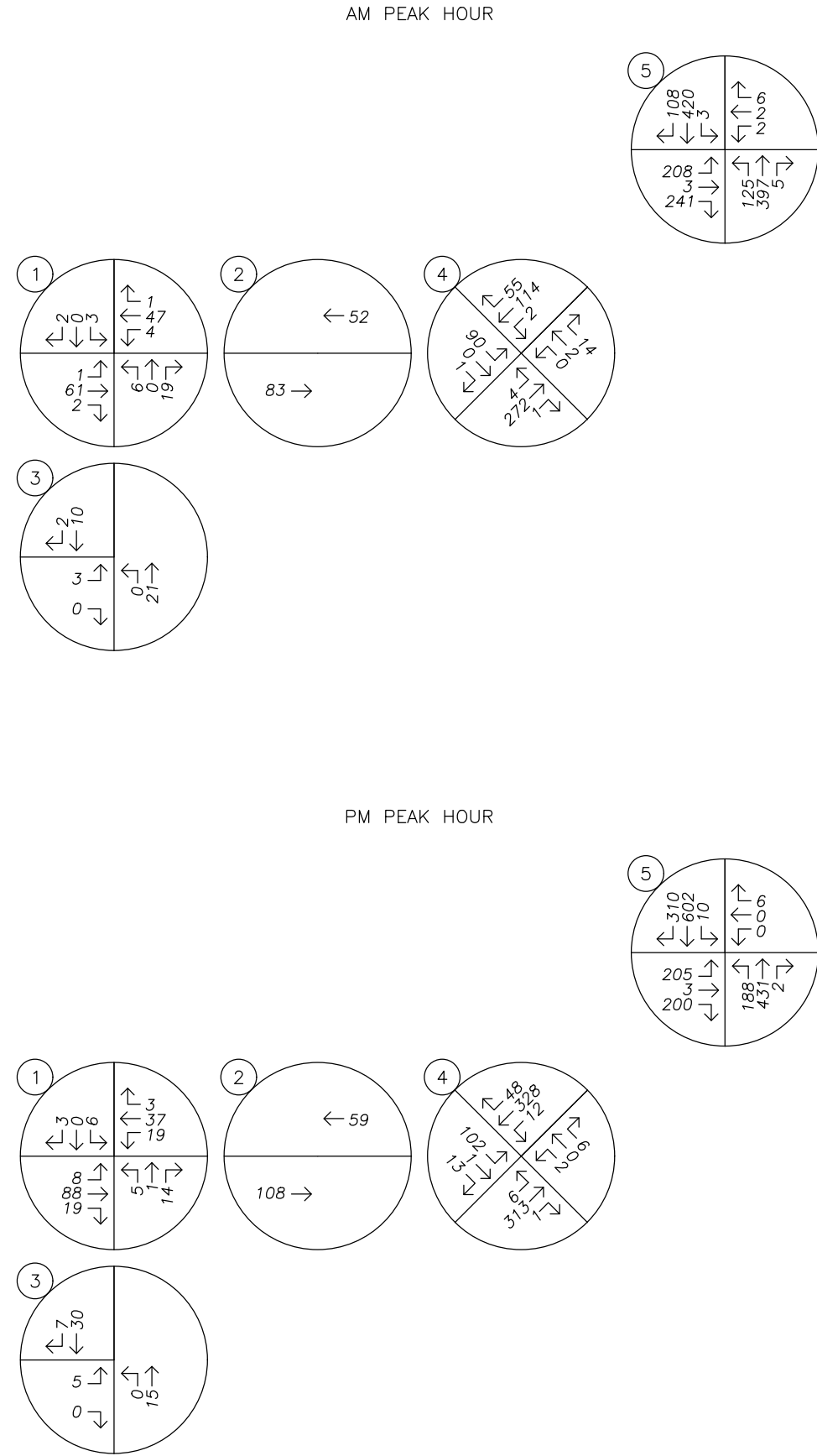
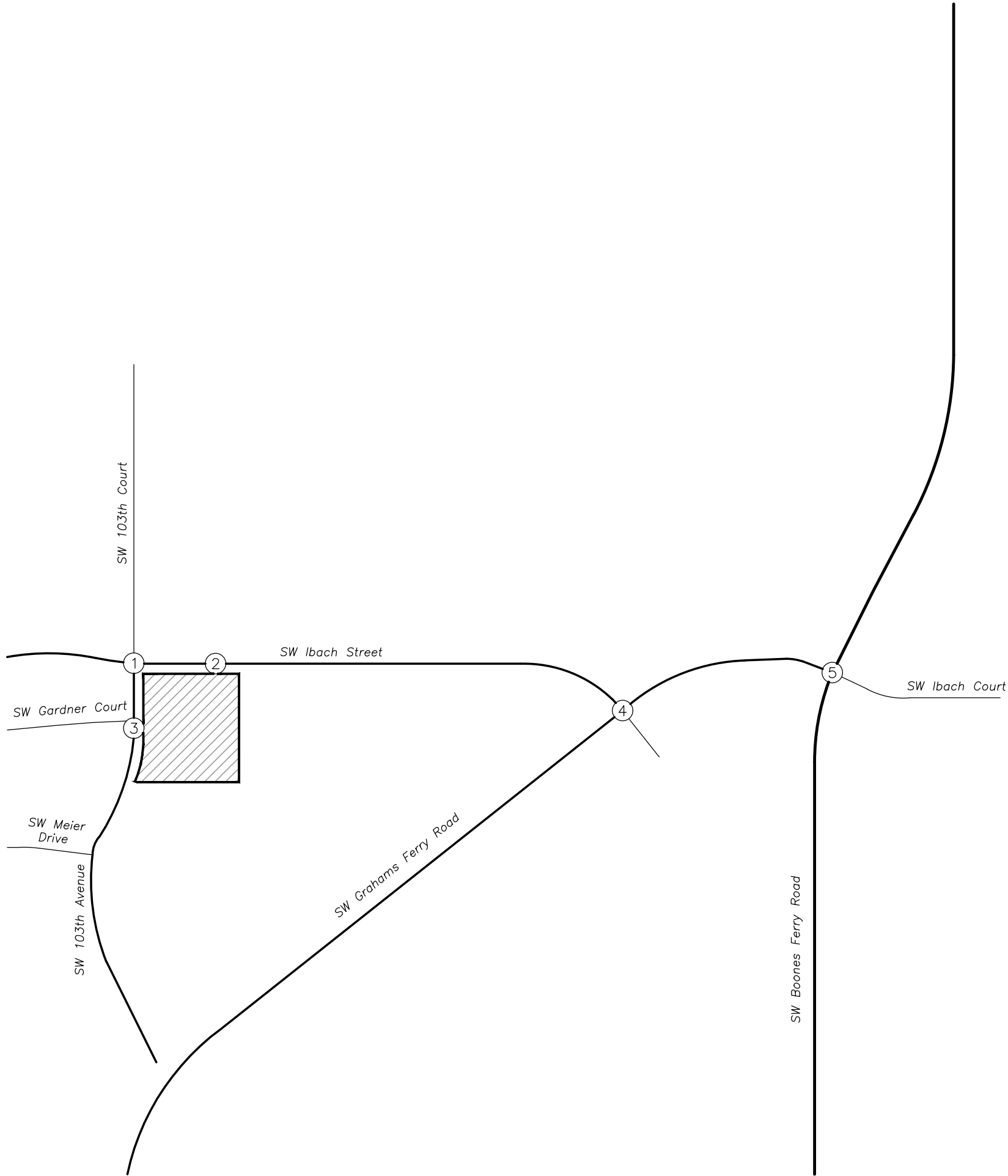
According to agency staff, no in-process development projects of significant size are expected to impact the study intersections prior to the development of the proposed SW Ibach St Town House Subdivision project. Therefore, no traffic generated by in-process developments were included in the traffic forecasts.

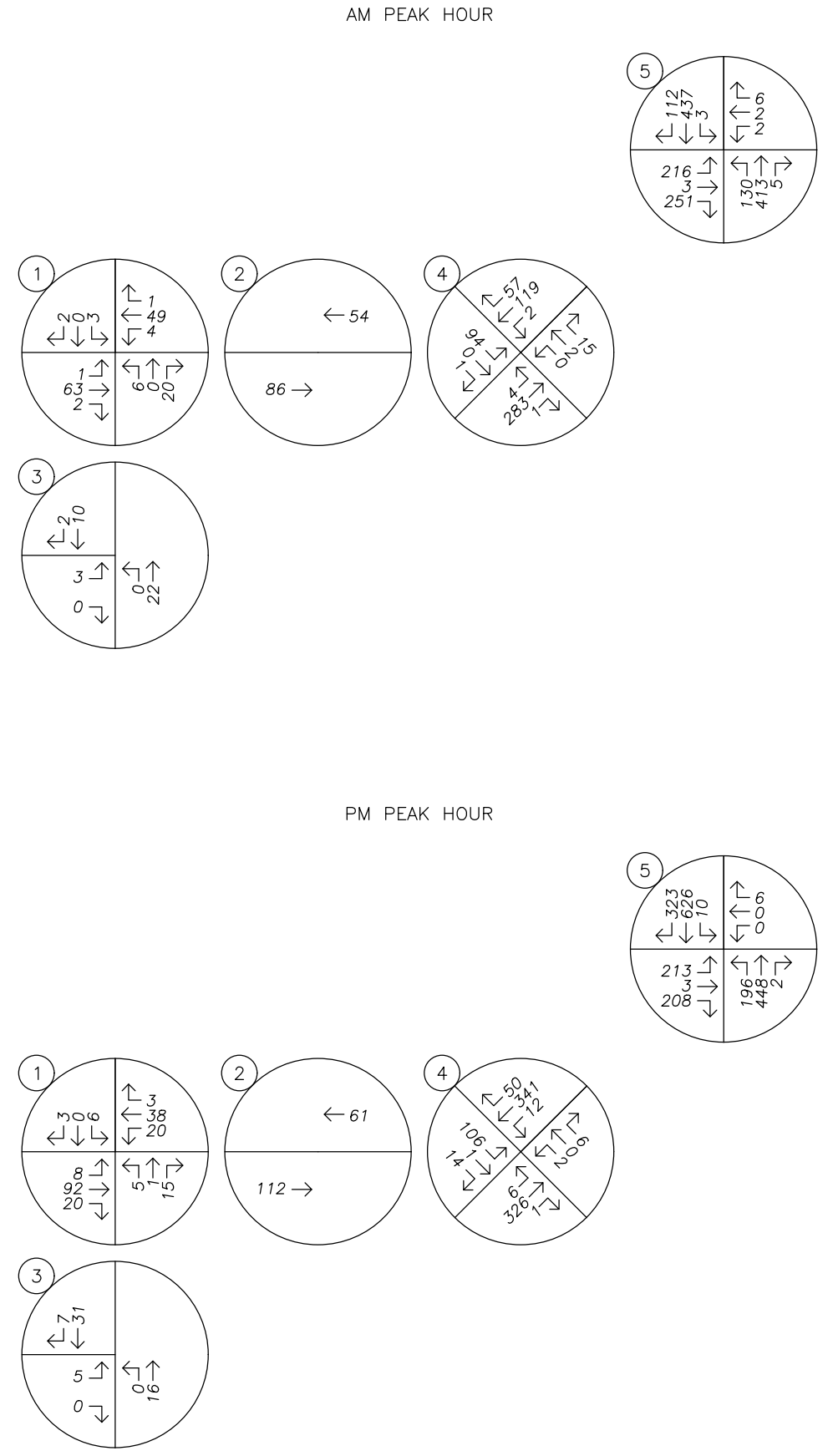
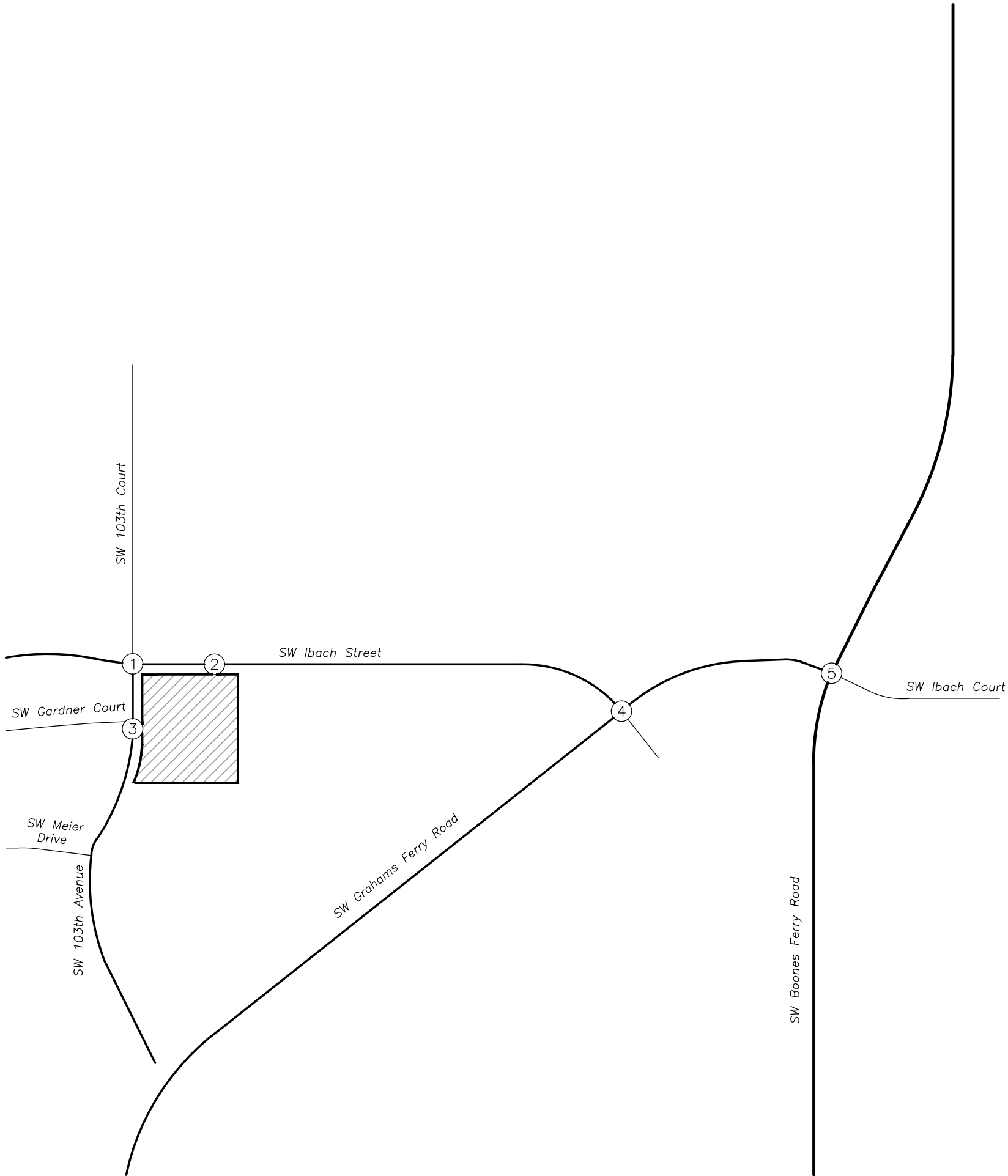
Figure 5 presents the morning and evening peak hours volumes under the year 2027 background condition.

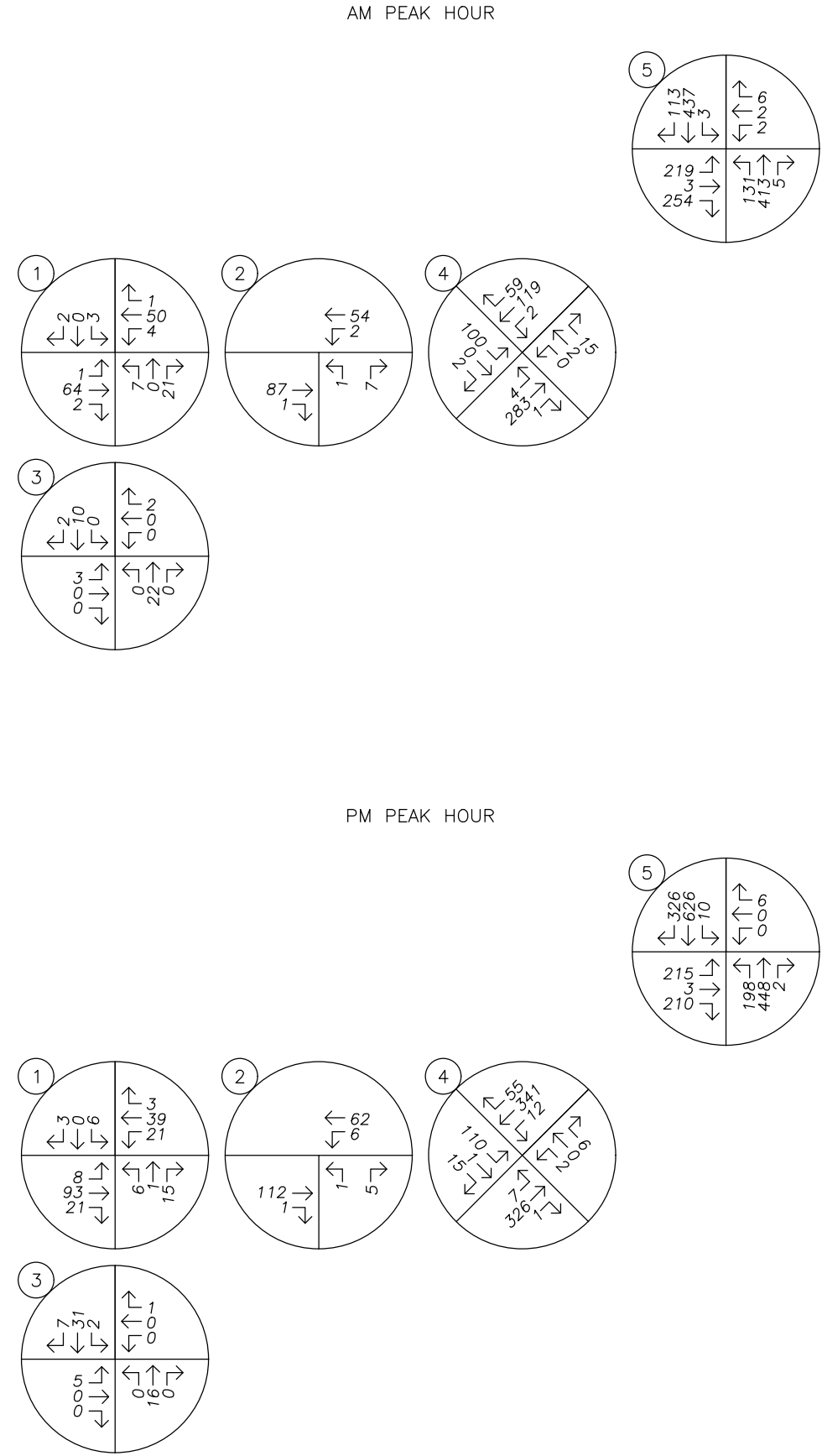
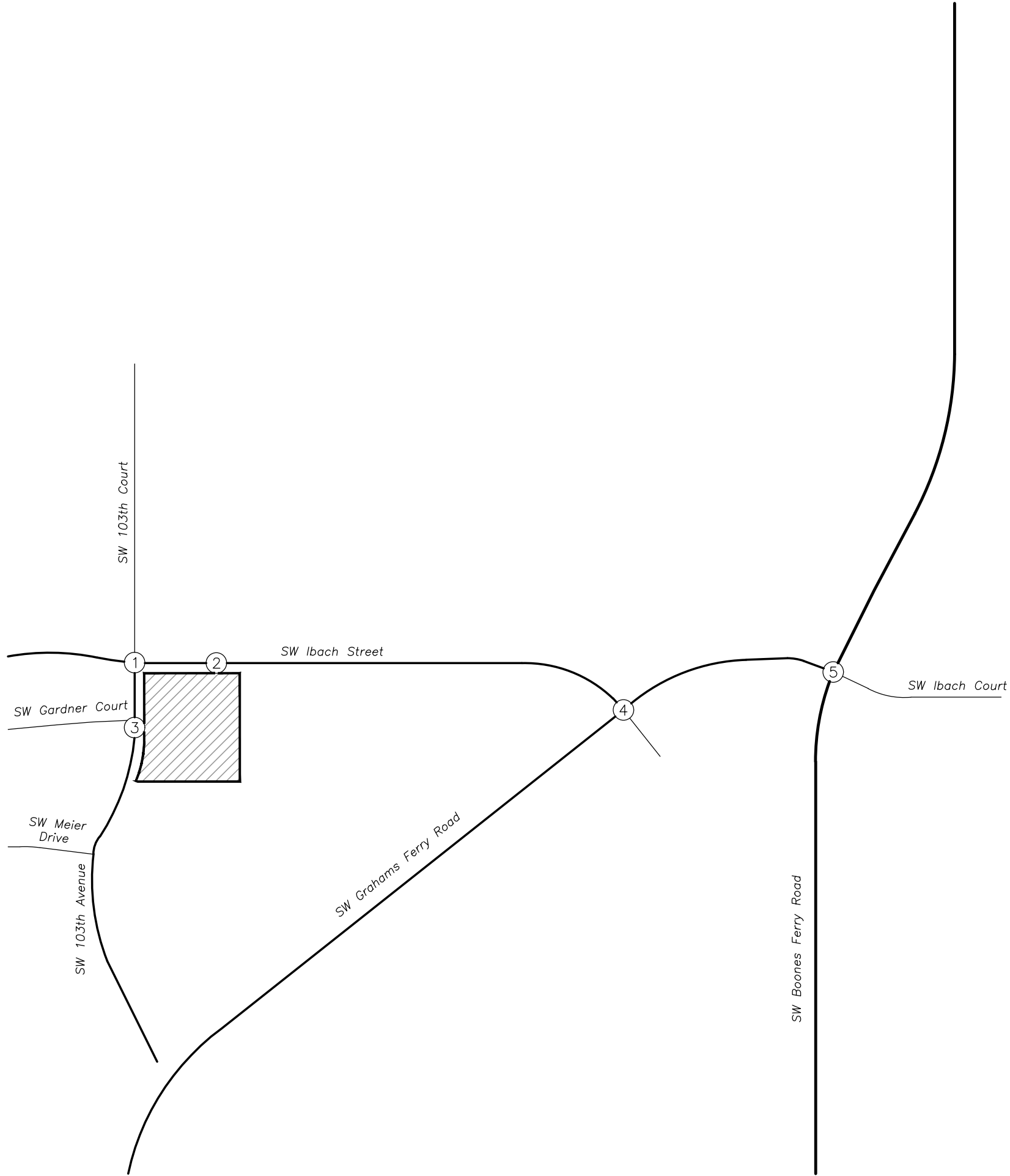
Buildout Conditions

The net new peak hour trips calculated to be generated by the proposed development, as described earlier in the *Site Trips* section, were added to the projected year 2027 background traffic volumes to obtain the expected 2027 site buildout volumes.

Figure 6 shows the morning and evening peak hour volumes under the year 2027 buildout condition.







Safety Analysis

Crash History Review

Using data obtained from ODOT's Crash Analysis & Reporting Unit and ODOT's online TransGIS website, a review was performed of the most recent five years of available crash data at the study intersections (January 2019 through December 2023). The crash data was evaluated based on the number of crashes, the type of collisions, the severity of the collisions, and the resulting crash rate for each intersection.

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 under the common assumption that traffic counted during the evening peak hour represents approximately ten percent of annual average daily traffic (AADT) at each intersection. Crash rates in excess of 1.00 crashes per million entering vehicles (CMEV) may be indicative of design deficiencies and therefore require a need for further investigation and possible mitigation.

With regard to crash severity, ODOT classifies crashes in the following categories:

- Property Damage Only (*PDO*);
- Possible Injury – Complaint of Pain (*Injury C*);
- Non-Incapacitating Injury (*Injury B*);
- Incapacitating Injury – Bleeding, Broken Bones (*Injury A*); and
- 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 hour represents approximately 10 percent of the AADT at the intersection.

Table 5 provides a summary of crash types while Table 6 summarizes crash severities and rates for each of the study intersections. Detailed crash data reports are provided in Appendix D.

Table 5: Crash Type Summary

Number	Intersection	Crash Type						Total
		Rear End	Turn/ Angle	Fixed Object	Side swipe	Ped/ Bike	Other	
1	SW Ibach Street & SW 103 rd Avenue	0	0	0	0	0	0	0
3	Site Access/SW Gardner Court & SW 103 rd Avenue	0	0	0	0	0	0	0
4	SW Ibach Street & SW Grahams Ferry Road	0	0	0	0	0	0	0
5	SW Ibach Street & SW Boones Ferry Road	4	1	0	0	0	0	5

Table 6: Crash Severity and Rate Summary

Number	Intersection	Crash Severity						Total Crashes	AADT	Crash Rate
		PDO	C	B	A	Fatal	Unknown			
1	SW Ibach Street & SW 103 rd Avenue	0	0	0	0	0	0	0	2,030	0.000
3	Site Access/SW Gardner Court & SW 103 rd Avenue	0	0	0	0	0	0	0	570	0.000
4	SW Ibach Street & SW Grahams Ferry Road	0	0	0	0	0	0	0	8,320	0.000
5	SW Ibach Street & SW Boones Ferry Road	1	3	1	0	0	0	5	19,570	0.140

Table Notes: **BOLDED** text indicates a crash rate in excess of 1.00 CMEV or ODOT's 90th percentile rate.

Based on the most recent five years of available crash data, no significant trends or crash patterns were identified at any of the study intersections that were indicative of safety concerns. Accordingly, no safety mitigation is recommended.

Access Spacing

SW Ibach Street and SW 103rd Avenue are classified as Minor Collectors with an access spacing of 100 feet². The site access along SW Ibach Street is proposed to be located approximately 140 feet east of SW 103rd Avenue. The site access along SW 103rd Avenue is proposed to be located approximately 190 feet south of

² Tualatin Development Code, Chapter 75 – Access Management, December 2024.

SW Ibach Street. Based on the information, the proposed site accesses meet the Tualatin access spacing standards.

Offset Site Access Intersection

The proposed site access located along the east side of SW 103rd Avenue is offset by approximately 62 feet to the south of SW Gardner Court (measured centerline to centerline). Based on the location of the proposed access relative to SW Gardner Court, no roadway binding between simultaneous left-turning vehicles along SW 103rd Avenue will occur. In addition, since the intersection is expected to serve low volumes of traffic (approximately 650 average daily volumes, assuming the evening peak hour traffic entering the intersection is representative of approximately 10 percent of the daily volume), no significant issues related to intersection safety are expected to occur.

Sight Distance Evaluation

A sight distance analysis was conducted at the site access driveways along SW 103rd Avenue and SW Ibach Street. Both intersection sight distance (ISD) and stopping sight distance (SSD) were assessed. The ISD is an operational measure, intended to provide sufficient line of sight along the major street so that a driver could turn from the minor street without impeding traffic flow. The SSD is the minimum requirement to ensure safe operation of the roadway. Stopping sight distance allows an oncoming driver to see a hazard in the roadway, react, and come to a complete stop if necessary to avoid a collision. As long as the available intersection sight distance is at least equal to the minimum required stopping sight distance for the design speed of the roadway, adequate sight distance is available for safe operation of the intersection.

Intersection Sight Distance

For ISD, the driver's eye is assumed to be 14.5 feet from the near edge of the nearest travel lane of the intersecting street and at a height of 3.5 feet above the minor-street approach pavement. The oncoming vehicle driver's eye height along the major-street approach is assumed to be 3.5 feet above the cross-street pavement.

Stopping Sight Distance

For SSD, the measurement from the driveway is the same but the SSD is also measured from the driver's eye height (3.5 feet) looking towards an object in the roadway at 2.0 feet. SSD is the same for both passenger vehicles and trucks.

Available Sight Distance

At the proposed site access on SW Ibach Street, the posted speed limit is 35 mph. Per Washington County code, the minimum sight distance is 350 feet and the required stopping sight distance is 250 feet. At the proposed site access on SW 103rd Avenue, the stationary speed limit is 25 mph. Per Washington County code, the minimum sight distance is 250 feet and the required stopping sight distance is 155 feet. The following observations were made at the two site accesses:

- **Site Access at SW Ibach Street:** Sight distance was measured to exceed 400 feet east and 400 feet west of the site access which exceeds the minimum ISD recommendation.

- **Site Access at SW 103rd Avenue:** Sight distance was measured to exceed 300 feet south and beyond the intersection at SW Ibach Street to the north of the site access which exceeds the minimum ISD recommendation.

Conclusion

Based on the analysis, the proposed site accesses have available sight distances which exceed the ISD recommendations and SSD requirements in both directions. No sight distance-related mitigation is necessary or recommended at the site access intersections.

Warrant Analysis

Left-turn and preliminary traffic signal warrants were examined for the study intersections where such treatments would be applicable. Detailed information on the warrants analyses is included in Appendix D.

Left-Turn Lane Warrants

A left-turn refuge is primarily a safety consideration for the major-street approach, removing left-turning vehicles from the through traffic stream. Warrants were based on the methodology outlined in the National Cooperative Highway Research Program (NCHRP) Report Number 457³. This methodology evaluates the need for a left-turn lane based on the number of left-turning vehicles, the number of travel lanes, the number of advancing and opposing vehicles, and the roadway travel speed.

Left-turn warrants are not met at any of the proposed site accesses for the SW Ibach Subdivision development. No left-turn lanes are planned or proposed at the site accesses.

Preliminary Traffic Signal Warrants

Preliminary traffic signal warrants were examined for the unsignalized study intersections to determine whether the installation of a new traffic signal will be warranted at the intersections by the 2027 future year. Based on the preliminary analysis following a review of Warrant 1 in the *Manual on Uniform Traffic Control Devices*, or MUTCD, traffic signal warrants are not projected to be met at any of the unsignalized study intersections under year 2027 conditions, regardless of whether or not the proposed development is constructed. Therefore, no new traffic signals are necessary or recommended as part of the proposed development application.

Pedestrian Crossing Analysis

An analysis of pedestrian crossing was conducted for the study intersections. Table 7 provides a summary of pedestrian volume, crossing type, and traffic control for each of the study intersections. Pedestrian volume data reports are provided in the appendix.

³ Bonneson, James A. and Michael D. Fontaine, NCHRP Report 457: An Engineering Study Guide for Evaluating Intersection Improvements, Transportation Research Board, 2001.

Table 7: Pedestrian Summary

Crossing Location	Pedestrian Volumes (Ped/hour)		Crossing Type	Traffic Control
	AM	PM		
1. SW Ibach Street & SW 103 rd Avenue				
West	11	3	Crosswalk	Stop Control
East	7	0	Crosswalk Closed	Stop Control
South	0	0	Crosswalk Closed	Stop Control
North	16	2	Ramps	Stop Control
Overall	34	5	Crosswalk & Ramps	All-way Stop Control
3. Site Access/SW Gardner Court & SW 103rd Avenue				
West	12	3	Ramps	Stop Control
North	0	0	None	Free
South	0	0	None	Free
Overall	12	3	Ramps	WB Stop Control
4. SW Ibach Street & SW Grahams Ferry Road*				
Northwest	21	11	Crosswalk	Stop Control
Southeast	1	0	Ramps	Stop Control
Southwest	0	0	None	Free
Northeast	1	0	None	Free
Overall	23	11	Crosswalk & Ramps	SEB/NWB Stop Control
5. SW Ibach Street & SW Boones Ferry Road				
West	6	6	Signalized Crosswalk	Signalized
East	23	12	Signalized Crosswalk	Signalized
South	19	4	Signalized Crosswalk	Signalized
North	20	11	Signalized Crosswalk	Signalized
Overall	68	33	Signalized Crosswalk	Signalized

* To reflect the pedestrian volumes while school is in session, the partial of the pedestrian volumes at the intersection of SW Ibach Street & SW Boones Ferry Road were added along the northwest leg at the intersection of SW Ibach Street & SW Grahams Ferry Road.

As shown in Table 7, the highest pedestrian volumes were collected at the intersection of SW Ibach Street & SW Boones Ferry Road during the morning and evening peak hours. Since the intersection is located adjacent to Edward Byrom Elementary School and Tualatin High School, the majority of the pedestrian volumes during the peak hours are anticipated to be related to commuting to and from the schools. The intersection is signalized and crosswalks with streetlights are available along all directions. In addition, sidewalks are available

along area roadways for pedestrians walking to and from the school grounds, and a multiuse path is available for pedestrian and bicycle access to the elementary school.

The pedestrian volumes at the intersection of SW Ibach Street and SW Grahams Ferry Road are anticipated to be related to the school commuting as well. A crosswalk along the northwest leg with two streetlights at the west and north corners are available. The highest pedestrian volumes were captured along the northwest crosswalk. Sidewalks are available along both SW Ibach Street and SW Grahams Ferry Road.

Relatively high pedestrian volumes during the morning peak hour were captured along the west leg at the intersection of SW Ibach Street & SW 103rd Avenue. The majority of the pedestrian volumes at this intersection are anticipated to be related to Ibach Park. A crosswalk along the west leg with two streetlights along SW Ibach Street are available. The highest pedestrian volumes were captured along the west crosswalk. Sidewalks or multiuse paths are available along SW Ibach Street and along parts of SW 103rd Avenue.

No pedestrian/bike related crashes were reported for the most recent five years at any of the study intersections as described in Crash History Review section. The proposed development will construct frontage improvements, including sidewalks along SW Ibach Street and SW 103rd Avenue, which are anticipated to increase the safety of the pedestrian system.

Based on the results of the pedestrian crossing analysis, all study intersections are currently operating safely and are projected to continue operating safely with the proposed development in the future. Accordingly, no pedestrian crossing mitigation is necessary or recommended at the study intersections.

Operational Analysis

A capacity and delay analysis were conducted for each of the study intersections per the signalized and unsignalized intersection analysis methodologies in the *Highway Capacity Manual* (HCM)⁴, as well as the signalized intersection analysis methodology detailed in ODOT's APM Section 13. 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. The volume-to-capacity (v/c) ratio is a measure that compares the traffic volumes (demand) against the available capacity of an intersection.

Performance Standards

The City of Tualatin requires intersections to operate at a minimum LOS D and LOS E for signalized and unsignalized intersections, respectively.

Delay & Capacity Analysis

The TrafficWare Synchro software utilized for analysis does not report the overall v/c ratio of signalized intersections in the HCM 7th Edition capacity reports. Therefore, the signalized intersection v/c ratio was calculated utilizing the HCM 2000 capacity reports.

The LOS, delay, and v/c results of the capacity analysis are shown in Table 8 for the morning and evening peak hours. Detailed calculations as well as tables showing the relationship between delay and LOS are included in E.

Table 8: Capacity Analysis Summary

			AM Peak Hour			PM Peak Hour		
			LOS	Delay (s)	v/c	LOS	Delay (s)	v/c
1. SW Ibach Street & SW 103rd Avenue								
	2025 Existing Conditions		A	7	0.09	A	8	0.14
	2027 Background Conditions		A	7	0.09	A	8	0.14
	2027 Buildout Conditions		A	7	0.10	A	8	0.15
2. SW Ibach Street & Site Access								
	2027 Buildout Conditions		A	9	0.01	A	9	<0.01
3. Site Access/SW Gardner Court & SW 103rd Avenue								
	2025 Existing Conditions		A	9	<0.01	A	9	<0.01
	2027 Background Conditions		A	9	<0.01	A	9	<0.01
	2027 Buildout Conditions		A	9	<0.01	A	9	<0.01

⁴ Transportation Research Board, Highway Capacity Manual 7th Edition, 2022.

Table 8: Capacity Analysis Summary (Continued)

			AM Peak Hour				PM Peak Hour		
			LOS	Delay (s)	v/c		LOS	Delay (s)	v/c
4. SW Ibach Street & SW Grahams Ferry Road									
	2025 Existing Conditions		B	14	0.23		C	17	0.30
	2027 Background Conditions		B	15	0.25		C	18	0.32
	2027 Buildout Conditions		B	15	0.26		C	18	0.33
5. SW Ibach Street & SW Boones Ferry Road									
	2025 Existing Conditions		C	33	0.70		C	22	0.69
	2027 Background Conditions		D	37	0.72		C	23	0.72
	2027 Buildout Conditions		D	38	0.73		C	23	0.72

Table Notes: **BOLDED** text indicates intersection operation above jurisdictional standards.

Based on the results of the operational analysis, all study intersections are currently operating acceptably per agency standards and are projected to continue operating acceptably through the 2027 buildout year of the site. Accordingly, no operational mitigation is necessary or recommended at the study intersections.

Influence of School Traffic

As mentioned previously, traffic counts at the intersection of SW Ibach Street and SW Boones Ferry Road were collected while school was in session. The City provided this traffic count data specifically so that this intersection could be analyzed for conditions while school was in session, since this is the most congested intersection in the project study area.

Traffic counts at the intersections near the site were collected while school was not in session, but they have significantly less influence from school traffic than the intersection of SW Ibach Street at SW Boones Ferry Road. In addition, delays at these intersections are low with a favorable level of service. As a sensitivity analysis, the traffic volumes at these intersections were doubled and the capacity analysis shows that they would continue to operate at level of service A. The influence of school traffic at these intersections is not sufficient to change the findings of this report.

With regard to safety, it is noted that there are no reported crashes at the intersections near the site in the five-year crash history, and the frontage improvements that the development will construct will provide sidewalks that are not currently in place and improve sight lines where vegetation has historically been overgrown up to the curb. These changes will improve safety for pedestrians and vehicles near the site.

Queuing Analysis

An analysis of projected queuing was conducted for the study intersections. The 95th percentile queue lengths were estimated based on the same Synchro/SimTraffic simulations used for the delay calculations. The 95th percentile queue is a statistical measurement which indicates there is a 5 percent chance that the queue may

exceed this length during the analysis period; however, given this is a probability, the 95th percentile queue length may theoretically never be met or observed in the field.

All queues more than 5 feet longer than a multiple of 25 were rounded up. Those that were 5 feet or less were rounded down since 5 feet is equivalent to the space between queued vehicles. The 95th percentile queue lengths reported in the simulation are presented in Table 9 for the morning and evening peak hours. Detailed queuing analysis reports are included in Appendix E.

Table 9: Queuing Analysis Summary

Intersection Movement	Available Storage (ft)	2027 Background		2027 Buildout	
		AM	PM	AM	PM
1. SW Ibach Street & SW 103 rd Avenue					
EB	780	50	50	50	50
WB	150	50	50	50	50
NB	100	50	50	50	50
SB	100	25	50	25	50
2. SW Ibach Street & Site Access					
EB	150	0	0	0	0
WB	380	0	0	0	0
NB	200	0	0	25	25
3. Site Access/SW Gardner Court & SW 103rd Avenue					
EB	450	25	25	25	25
WB	150	0	0	25	0
NB	170	0	0	0	0
SB	100	0	0	0	0
4. SW Ibach Street & SW Grahams Ferry Road					
EBLT	470	50	75	75	75
EBR	180	25	50	25	50
WB	100	50	25	50	25
NBL	100	0	25	25	25
NBTR	>1,000	25	0	25	0
SBL	100	25	25	25	25
SBTR	100	25	0	25	25

Table 9: Queuing Analysis Summary (Continued)

Intersection Movement	Available Storage (ft)	2027 Background		2027 Buildout	
		AM	PM	AM	PM
1. SW Ibach Street & SW Boones Ferry Road					
EBL	250	225	200	200	225
EBTR	430	250	225	250	250
WB	600	50	25	50	25
NBL	200	150	150	175	175
NBTR	>1,000	325	200	300	250
SBL	200	25	75	50	75
SBT	900	500	750	600	650
SBR	200	175	225	175	225

In general, changes in 95th percentile queuing between the year background and buildout conditions are anticipated to be small. The 95th percentile queues are expected to exceed available storage at the intersection of SW Ibach Street & SW Boones Ferry Road. The queues on the southbound right-turn lane of the intersection are estimated at 175 - 250 feet, approximately seven to ten vehicles, which would extend northward into the adjacent through lane during the evening peak hour of 2027 background and buildout conditions. This queue would not affect any nearby roadways or driveways.

Although the 95th percentile queues at the intersection of SW Ibach Street & SW Boones Ferry Road are estimated to extend beyond available storage, most of the queues would be present under both background and buildout conditions. The proposed SW Ibach St Subdivision will not measurably change any of these queues.

Conclusions

The following key findings relate to transportation:

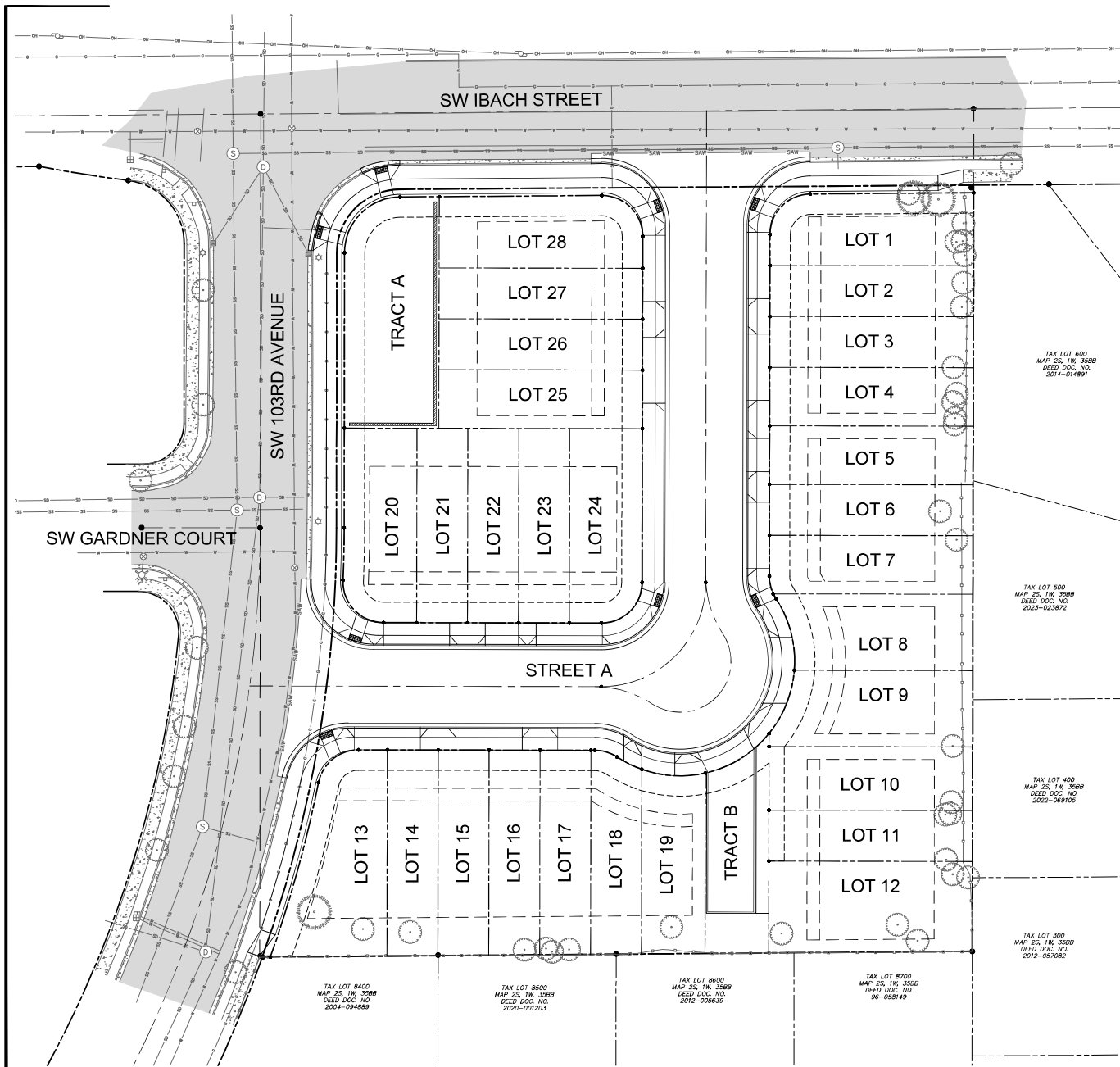
- Based on the most recent five years of available crash data, no significant trends or crash patterns were identified at any of the study intersections that were indicative of safety concerns. Accordingly, no safety mitigation is recommended.
- The proposed site accesses along SW Ibach Street and SW 103rd Avenue have available sight distance which exceeds the ISD recommendations and SSD requirements in both directions. No mitigation is necessary or recommended with regard to sight distance at the site access intersections.
- Left-turn warrants are not met at any of the proposed site accesses for the SW Ibach Subdivision development. No left-turn lanes are planned or proposed at the site accesses.
- Traffic signal warrants are not projected to be met at any of the unsignalized study intersections under year 2027 conditions, regardless of whether or not the proposed development is constructed. Therefore, no new traffic signals are necessary or recommended as part of the proposed development application.
- Based on the results of the pedestrian crossing analysis, all study intersections are currently operating safely and are projected to continue operating safely with the proposed development in the future. Accordingly, no pedestrian crossing mitigation is necessary or recommended at the study intersections.
- All study intersections are currently operating acceptably per the agency standards and are projected to continue operating acceptably through the 2027 buildout year of the site. Accordingly, no operational mitigation is necessary or recommended at the study intersections.
- In general, changes in 95th percentile queuing between the year 2027 background and buildout conditions are anticipated to be small. Although the 95th percentile queues at the intersection of SW Ibach Street & SW Boones Ferry Road are estimated to extend beyond available storage, the majority of the queues would be present under both background and buildout conditions. The proposed SW Ibach St Subdivision will not measurably change any of these queues.
- The intersection of SW Ibach Street & SW Boones Ferry Road will operate acceptably with the proposed subdivision in place, including during the school year. Traffic counts near the project site while school was in session were not available, but a sensitivity analysis shows that even with double the volume of traffic, the intersections will still operate favorably and well within applicable performance standards.
- Construction of street frontage improvements with this project will improve safety for all travel modes by providing missing sidewalks and removing vegetation to open up sight lines near the street.



Appendix A

Site Plan





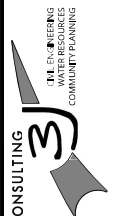
LEGEND

	PROPOSED LOT LINE
	PROPOSED RIGHT OF WAY
	PROPOSED CENTERLINE
	PROPOSED SETBACK LINE
	PROPOSED CURB AND GUTTER
	PROPOSED CONCRETE



PUBLISH DATE
06/12/2025
ISSUED FOR
LAND USE DOCUMENTS
REVISIONS

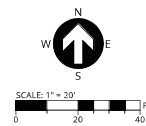
SITE PLAN
SW IBACH ST
SUBDIVISION
DEZ DEVELOPMENT LLC
TUALATIN, OR



1500 CAMBRIDGE AVE SUITE 100, BRAINTON, ONTARIO

PROJECT INFORMATION
3J PROJECT # | 25008
TAX LOT(S) | 2S135BB02100
LAND USE # | TBD
DESIGNED BY | SRC, SKS
CHECKED BY | JJS

SHEET NUMBER
C200



SECTION 35, T.2S., R.1W. W.M.,
WASHINGTON COUNTY, OREGON



Know what's below.
Call before you dig.

Appendix B

Trip Generation Calculations





TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition

Land Use: Single-Family Detached Housing
Land Use Code: 210
Land Use Subcategory: All Sites
Setting/Location: General Urban/Suburban
Variable: Dwelling Units
Trip Type: Vehicle
Formula Type: Rate
Variable Quantity: 1

WARNING: Variable Quantity is less than Minimum Survey Size for Peak Hours

AM PEAK HOUR

Trip Rate: 0.7

	Enter	Exit	Total
Directional Split	25%	75%	
Trip Ends	0	1	1

PM PEAK HOUR

Trip Rate: 0.94

	Enter	Exit	Total
Directional Split	63%	37%	
Trip Ends	1	0	1

WEEKDAY

Trip Rate: 9.43

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	5	5	10

SATURDAY

Trip Rate: 9.48

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	5	5	10

Source: Trip Generation Manual, 11th Edition



TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition

Land Use: Single-Family Attached Housing
Land Use Code: 215
Land Use Subcategory: All Sites
Setting/Location: General Urban/Suburban
Variable: Dwelling Units
Trip Type: Vehicle
Formula Type: Rate
Variable Quantity: 28

AM PEAK HOUR

Trip Rate: 0.48

	Enter	Exit	Total
Directional Split	25%	75%	
Trip Ends	3	10	13

PM PEAK HOUR

Trip Rate: 0.57

	Enter	Exit	Total
Directional Split	59%	41%	
Trip Ends	9	7	16

WEEKDAY

Trip Rate: 7.2

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	101	101	202

SATURDAY

Trip Rate: 8.76

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	123	123	246

Source: Trip Generation Manual, 11th Edition

Appendix C

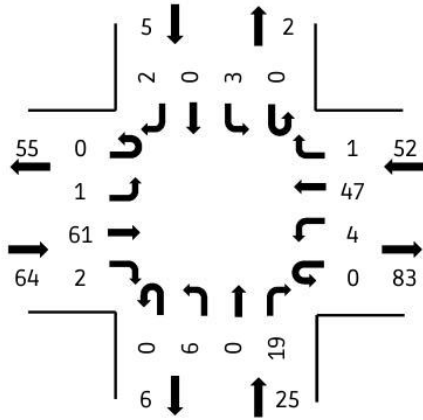
Traffic Counts



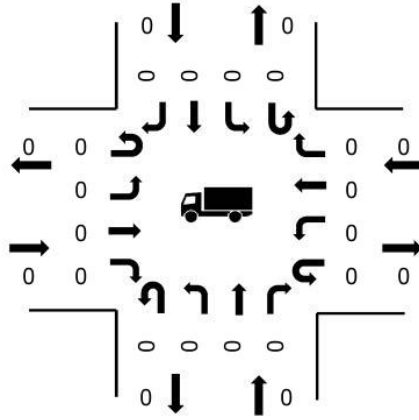


Location: SW 103rd Ave & SW Ibach St
Date: 2025-07-24
Peak Hour Start: 07:15 AM
Peak 15 Minute Start: 07:40 AM
Peak Hour Factor: 0.79

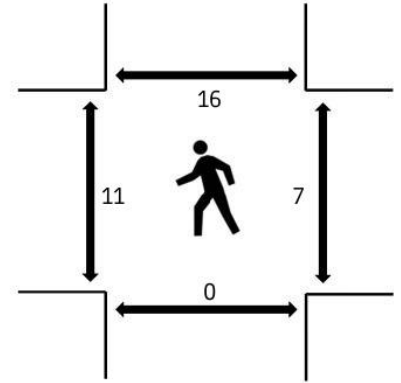
Motorized Vehicles



Heavy Vehicles



Pedestrians



(peak hour)

All Vehicle Volumes

Time	NB (Sw 103rd Ave)					SB (Sw 103rd Ave)					EB (Sw Ibach St)					WB (Sw Ibach St)					Totals	
	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
07:00:00 AM	0	0	1	0	0	0	0	0	0	0	0	9	0	0	0	0	1	0	0	0		
07:05:00 AM	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	3	0	0	0		
07:10:00 AM	0	0	1	0	0	1	0	0	0	0	0	5	0	0	0	0	3	0	0	0	27	
07:15:00 AM	0	0	3	0	0	0	0	0	0	0	0	5	0	0	0	0	2	0	0	0	26	
07:20:00 AM	0	0	1	0	0	1	0	0	0	0	0	2	0	0	0	1	2	0	0	0	27	
07:25:00 AM	0	0	2	0	0	1	0	0	0	0	0	1	2	0	0	0	4	0	0	0	27	
07:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	2	1	0	0	28	
07:35:00 AM	0	0	2	0	0	1	0	0	0	0	0	4	0	0	0	0	3	0	0	0	31	
07:40:00 AM	0	0	3	0	0	0	0	0	0	0	0	6	0	0	0	1	3	0	0	0	34	
07:45:00 AM	0	0	3	0	0	0	0	0	0	0	0	8	0	0	0	0	8	0	0	0	42	
07:50:00 AM	3	0	2	0	0	0	0	0	0	0	0	3	0	0	0	0	6	0	0	0	46	
07:55:00 AM	1	0	0	0	0	0	0	1	0	0	0	5	0	0	0	0	5	0	0	0	45	133
08:00:00 AM	1	0	0	0	0	0	0	1	0	0	1	4	0	0	0	2	4	0	0	0	39	135
08:05:00 AM	1	0	1	0	0	0	0	0	0	0	0	8	0	0	0	0	6	0	0	0	41	145
08:10:00 AM	0	0	2	0	0	0	0	0	0	0	0	7	0	0	0	0	2	0	0	0	40	146
08:15:00 AM	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	31	140
08:20:00 AM	0	0	1	0	0	1	0	0	0	0	0	3	0	0	0	1	4	0	0	0	25	143
08:25:00 AM	0	0	1	0	0	1	0	1	0	0	0	3	0	0	0	0	4	0	0	0	24	143
08:30:00 AM	0	0	0	0	0	1	0	0	0	0	0	4	0	0	0	2	5	0	0	0	32	144
08:35:00 AM	1	0	3	0	0	0	0	0	0	0	0	3	0	0	0	1	4	0	0	0	34	146
08:40:00 AM	0	0	1	0	0	1	0	0	0	0	0	6	0	0	0	1	1	0	0	0	34	143
08:45:00 AM	1	0	4	0	0	0	0	0	0	0	0	4	1	0	0	1	3	0	0	0	36	138
08:50:00 AM	0	0	0	0	0	1	0	0	0	0	0	11	1	0	0	0	5	0	0	0	42	142
08:55:00 AM	0	0	4	0	0	0	0	0	0	0	0	6	0	0	0	2	4	0	0	0	48	146

Car Volumes

Time	NB (SW 103rd Ave)					SB (SW 103rd Ave)					EB (SW Ibach St)					WB (SW Ibach St)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
07:00:00 AM	0	0	1	0	0	0	0	0	0	0	0	8	0	0	0	0	1	0	0	0		
07:05:00 AM	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	3	0	0	0		
07:10:00 AM	0	0	1	0	0	1	0	0	0	0	0	5	0	0	0	0	3	0	0	0	26	
07:15:00 AM	0	0	3	0	0	0	0	0	0	0	0	5	0	0	0	0	2	0	0	0	26	
07:20:00 AM	0	0	1	0	0	1	0	0	0	0	0	2	0	0	0	1	2	0	0	0	27	
07:25:00 AM	0	0	2	0	0	1	0	0	0	0	0	1	2	0	0	0	4	0	0	0	27	
07:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	2	1	0	0	28	
07:35:00 AM	0	0	2	0	0	1	0	0	0	0	0	4	0	0	0	0	3	0	0	0	31	
07:40:00 AM	0	0	3	0	0	0	0	0	0	0	0	6	0	0	0	1	3	0	0	0	34	
07:45:00 AM	0	0	3	0	0	0	0	0	0	0	0	8	0	0	0	0	8	0	0	0	42	
07:50:00 AM	3	0	2	0	0	0	0	0	0	0	0	3	0	0	0	0	6	0	0	0	46	
07:55:00 AM	1	0	0	0	0	0	0	1	0	0	0	5	0	0	0	0	5	0	0	0	45	132
08:00:00 AM	1	0	0	0	0	0	0	1	0	0	1	4	0	0	0	2	4	0	0	0	39	135
08:05:00 AM	1	0	1	0	0	0	0	0	0	0	0	8	0	0	0	0	6	0	0	0	41	145
08:10:00 AM	0	0	2	0	0	0	0	0	0	0	0	7	0	0	0	0	2	0	0	0	40	146
08:15:00 AM	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	31	140
08:20:00 AM	0	0	1	0	0	1	0	0	0	0	0	3	0	0	0	1	3	0	0	0	24	142
08:25:00 AM	0	0	1	0	0	1	0	1	0	0	0	3	0	0	0	0	4	0	0	0	23	142
08:30:00 AM	0	0	0	0	0	1	0	0	0	0	0	4	0	0	0	2	4	0	0	0	30	142
08:35:00 AM	1	0	3	0	0	0	0	0	0	0	0	3	0	0	0	1	4	0	0	0	33	144
08:40:00 AM	0	0	1	0	0	1	0	0	0	0	0	6	0	0	0	1	1	0	0	0	33	141
08:45:00 AM	1	0	4	0	0	0	0	0	0	0	0	4	1	0	0	1	3	0	0	0	36	136
08:50:00 AM	0	0	0	0	0	1	0	0	0	0	0	11	1	0	0	0	5	0	0	0	42	140
08:55:00 AM	0	0	4	0	0	0	0	0	0	0	0	6	0	0	0	2	4	0	0	0	48	144

Truck Volumes

[illegible]

Bike Volumes

Time	NB (SW 103rd Ave)					SB (SW 103rd Ave)					EB (SW Ibach St)					WB (SW Ibach St)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
07:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
07:05:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
07:10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:15:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
07:20:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
07:25:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
07:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:35:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:40:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:50:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:55:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:05:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
08:20:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
08:25:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
08:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:35:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:40:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:50:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
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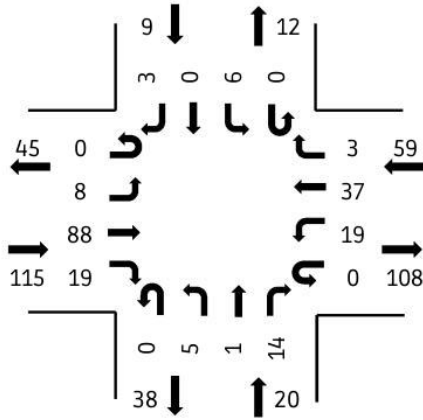
Pedestrian Volumes

Time	Pedestrians				Totals	
Time	North	South	East	West	15min	1hr
07:00:00 AM	5	0	0	1		
07:05:00 AM	2	0	0	0		
07:10:00 AM	1	1	1	1	12	
07:15:00 AM	3	0	0	1	10	
07:20:00 AM	2	0	1	2	13	
07:25:00 AM	1	0	0	0	10	
07:30:00 AM	2	0	0	2	10	
07:35:00 AM	0	0	1	2	8	
07:40:00 AM	0	0	2	0	9	
07:45:00 AM	1	0	0	1	7	
07:50:00 AM	3	0	2	0	9	
07:55:00 AM	0	0	0	0	7	38
08:00:00 AM	0	0	0	1	6	33
08:05:00 AM	2	0	0	0	3	33
08:10:00 AM	2	0	1	2	8	34
08:15:00 AM	0	0	0	0	7	30
08:20:00 AM	0	0	0	4	9	29
08:25:00 AM	0	0	0	0	4	28
08:30:00 AM	1	0	0	1	6	26
08:35:00 AM	0	0	0	1	3	24
08:40:00 AM	1	2	0	0	6	25
08:45:00 AM	1	0	0	2	7	26
08:50:00 AM	0	0	1	1	8	23
08:55:00 AM	2	0	1	1	9	27

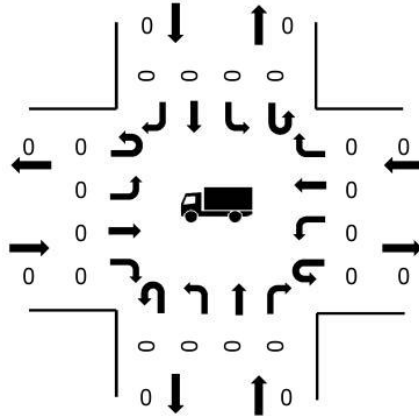


Location: SW 103rd Ave & SW Ibach St
 Date: 2025-07-24
 Peak Hour Start: 04:55 PM
 Peak 15 Minute Start: 05:00 PM
 Peak Hour Factor: 0.91

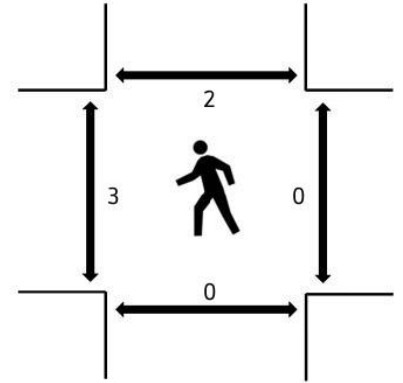
Motorized Vehicles



Heavy Vehicles



Pedestrians



(peak hour)

All Vehicle Volumes

Time	NB (Sw 103rd Ave)					SB (Sw 103rd Ave)					EB (Sw Ibach St)					WB (Sw Ibach St)					Totals	
	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	1	0	0	0	0	0	0	0	0	9	1	0	0	0	4	1	0	0		
04:05:00 PM	0	0	1	0	0	0	0	0	0	0	0	13	1	0	0	1	0	0	0	0		
04:10:00 PM	2	0	0	0	0	1	0	0	0	0	0	9	4	0	0	0	2	0	0	0	50	
04:15:00 PM	0	0	1	0	0	0	0	0	0	0	0	6	1	0	0	3	3	0	0	0	48	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	1	7	0	0	0	47	
04:25:00 PM	1	1	0	0	0	1	1	1	0	0	0	4	1	0	0	2	4	2	0	0	47	
04:30:00 PM	1	0	0	0	0	3	0	0	0	0	0	8	0	0	0	0	4	1	0	0	50	
04:35:00 PM	0	0	1	0	0	1	0	0	0	0	0	8	2	0	0	0	1	0	0	0	48	
04:40:00 PM	2	0	1	0	0	0	0	0	0	0	0	9	0	0	0	0	4	0	0	0	46	
04:45:00 PM	0	0	0	0	0	1	0	0	0	0	0	5	1	0	0	0	3	0	0	0	39	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	1	0	0	0	0	36	
04:55:00 PM	2	0	0	0	0	0	0	0	0	0	0	6	2	0	0	1	1	1	0	0	33	176
05:00:00 PM	0	0	1	0	0	1	0	0	0	0	0	6	2	0	0	1	7	0	0	0	41	178
05:05:00 PM	1	0	2	0	0	0	0	1	0	0	0	11	0	0	0	1	2	1	0	0	50	181
05:10:00 PM	0	0	3	0	0	0	0	0	0	0	0	8	2	0	0	3	3	0	0	0	56	182
05:15:00 PM	0	0	1	0	0	1	0	0	0	0	0	8	0	0	0	1	2	0	0	0	51	181
05:20:00 PM	0	0	0	0	0	1	0	0	0	0	2	5	0	0	0	1	3	1	0	0	45	179
05:25:00 PM	0	0	1	0	0	0	0	0	0	0	1	5	3	0	0	0	3	0	0	0	39	174
05:30:00 PM	1	0	4	0	0	0	0	0	0	0	3	11	2	0	0	1	1	0	0	0	49	180
05:35:00 PM	0	0	1	0	0	2	0	0	0	0	0	11	1	0	0	0	1	0	0	0	52	183
05:40:00 PM	0	1	1	0	0	0	0	0	0	0	1	4	3	0	0	4	1	0	0	0	54	182
05:45:00 PM	1	0	0	0	0	1	0	2	0	0	1	8	1	0	0	2	5	0	0	0	52	193
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	5	3	0	0	4	8	0	0	0	56	203
05:55:00 PM	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	6	1	0	0	51	200

Car Volumes

Time	NB (SW 103rd Ave)					SB (SW 103rd Ave)					EB (SW Ibach St)					WB (SW Ibach St)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	1	0	0	0	0	0	0	0	0	9	1	0	0	0	4	1	0	0	50	
04:05:00 PM	0	0	1	0	0	0	0	0	0	0	0	13	1	0	0	1	0	0	0	0		
04:10:00 PM	2	0	0	0	0	1	0	0	0	0	0	9	4	0	0	0	2	0	0	0		
04:15:00 PM	0	0	1	0	0	0	0	0	0	0	0	6	1	0	0	3	3	0	0	0		
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	1	6	0	0	0		
04:25:00 PM	1	1	0	0	0	1	1	1	0	0	0	4	1	0	0	2	4	2	0	0		
04:30:00 PM	1	0	0	0	0	3	0	0	0	0	0	8	0	0	0	0	4	1	0	0		
04:35:00 PM	0	0	1	0	0	1	0	0	0	0	0	7	2	0	0	0	1	0	0	0		
04:40:00 PM	2	0	1	0	0	0	0	0	0	0	0	9	0	0	0	0	4	0	0	0		
04:45:00 PM	0	0	0	0	0	1	0	0	0	0	0	5	1	0	0	0	3	0	0	0		
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	1	0	0	0	0		
04:55:00 PM	2	0	0	0	0	0	0	0	0	0	0	6	2	0	0	1	1	1	0	0		
05:00:00 PM	0	0	1	0	0	1	0	0	0	0	0	6	2	0	0	1	7	0	0	0		
05:05:00 PM	1	0	2	0	0	0	0	1	0	0	0	11	0	0	0	1	2	1	0	0		
05:10:00 PM	0	0	3	0	0	0	0	0	0	0	0	8	2	0	0	3	3	0	0	0		
05:15:00 PM	0	0	1	0	0	1	0	0	0	0	0	8	0	0	0	1	2	0	0	0		
05:20:00 PM	0	0	0	0	0	1	0	0	0	0	2	5	0	0	0	1	3	1	0	0		
05:25:00 PM	0	0	1	0	0	0	0	0	0	0	1	5	3	0	0	0	3	0	0	0		
05:30:00 PM	1	0	4	0	0	0	0	0	0	0	3	11	2	0	0	1	1	0	0	0		
05:35:00 PM	0	0	1	0	0	2	0	0	0	0	0	11	1	0	0	0	1	0	0	0		
05:40:00 PM	0	1	1	0	0	0	0	0	0	0	1	4	3	0	0	4	1	0	0	0		
05:45:00 PM	1	0	0	0	0	1	0	2	0	0	1	8	1	0	0	2	5	0	0	0		
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	5	3	0	0	4	8	0	0	0		
05:55:00 PM	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	6	1	0	0		

Truck Volumes

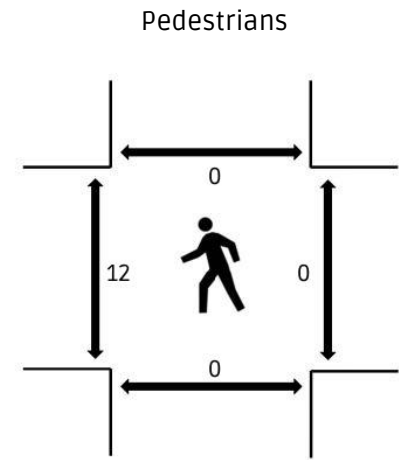
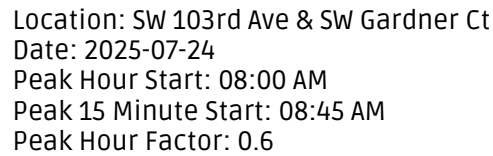
[illegible]

Bike Volumes

Time	NB (SW 103rd Ave)					SB (SW 103rd Ave)					EB (SW Ibach St)					WB (SW Ibach St)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian Volumes

Time	Pedestrians				Totals	
Time	North	South	East	West	15min	1hr
04:00:00 PM	0	0	0	1		
04:05:00 PM	1	0	0	0		
04:10:00 PM	0	0	0	0	2	
04:15:00 PM	1	1	0	0	3	
04:20:00 PM	0	0	0	0	2	
04:25:00 PM	0	0	0	0	2	
04:30:00 PM	0	0	0	0	0	
04:35:00 PM	0	0	0	2	2	
04:40:00 PM	0	0	0	0	2	
04:45:00 PM	2	0	0	0	4	
04:50:00 PM	0	1	0	0	3	
04:55:00 PM	0	0	0	1	4	10
05:00:00 PM	0	0	0	0	2	9
05:05:00 PM	0	0	0	0	1	8
05:10:00 PM	0	0	0	0	0	8
05:15:00 PM	1	0	0	0	1	7
05:20:00 PM	0	0	0	0	1	7
05:25:00 PM	0	0	0	0	1	7
05:30:00 PM	0	0	0	1	1	8
05:35:00 PM	0	0	0	0	1	6
05:40:00 PM	1	0	0	0	2	7
05:45:00 PM	0	0	0	0	1	5
05:50:00 PM	0	0	0	1	2	5
05:55:00 PM	0	0	0	0	1	4

[illegible]

Car Volumes

[illegible]

Truck Volumes

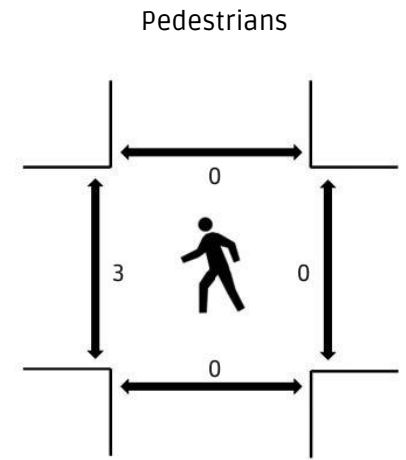
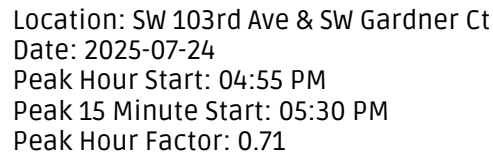
[illegible]

Bike Volumes

Time	NB (SW 103rd Ave)					SB (SW 103rd Ave)					EB (SW Gardner Ct)					WB (SW Gardner Ct)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
07:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
07:05:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
07:10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:20:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:25:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:35:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:40:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:50:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:55:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:05:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:20:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:25:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:35:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:40:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:50:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:55:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian Volumes

Time	Pedestrians				Totals	
Time	North	South	East	West	15min	1hr
07:00:00 AM	0	0	0	2		
07:05:00 AM	0	0	0	1		
07:10:00 AM	0	0	0	0	3	
07:15:00 AM	0	0	0	0	1	
07:20:00 AM	0	0	0	2	2	
07:25:00 AM	0	0	0	0	2	
07:30:00 AM	0	0	0	2	4	
07:35:00 AM	0	0	0	2	4	
07:40:00 AM	0	0	0	1	5	
07:45:00 AM	0	0	0	1	4	
07:50:00 AM	0	0	0	4	6	
07:55:00 AM	0	0	0	0	5	15
08:00:00 AM	0	0	0	1	5	14
08:05:00 AM	0	0	0	0	1	13
08:10:00 AM	0	0	0	2	3	15
08:15:00 AM	0	0	0	2	4	17
08:20:00 AM	0	0	0	2	6	17
08:25:00 AM	0	0	0	0	4	17
08:30:00 AM	0	0	0	0	2	15
08:35:00 AM	0	0	0	1	1	14
08:40:00 AM	0	0	0	0	1	13
08:45:00 AM	0	0	0	2	3	14
08:50:00 AM	0	0	0	1	3	11
08:55:00 AM	0	0	0	1	4	12

[illegible]

Car Volumes

[illegible]

Truck Volumes

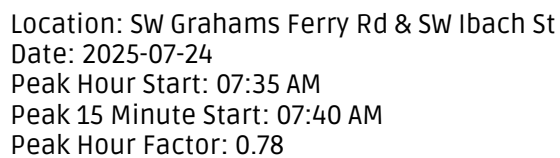
[illegible]

Bike Volumes

Time	NB (SW 103rd Ave)					SB (SW 103rd Ave)					EB (SW Gardner Ct)					WB (SW Gardner Ct)					Totals	
Time	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	Left	Thru	Right	U-turn	RTOR	15min	1hr
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

Pedestrian Volumes

Time	Pedestrians				Totals	
Time	North	South	East	West	15min	1hr
04:00:00 PM	0	0	0	1		
04:05:00 PM	0	0	0	0		
04:10:00 PM	0	0	0	0	1	
04:15:00 PM	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	
04:30:00 PM	0	0	0	1	1	
04:35:00 PM	0	0	0	0	1	
04:40:00 PM	0	0	0	0	1	
04:45:00 PM	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	2
05:00:00 PM	0	0	0	1	1	2
05:05:00 PM	0	0	0	0	1	2
05:10:00 PM	0	0	0	0	1	2
05:15:00 PM	0	0	0	0	0	2
05:20:00 PM	0	0	0	0	0	2
05:25:00 PM	0	0	0	0	0	2
05:30:00 PM	0	0	0	1	1	2
05:35:00 PM	0	0	0	0	1	2
05:40:00 PM	0	0	0	0	1	2
05:45:00 PM	0	0	0	0	0	2
05:50:00 PM	0	0	0	1	1	3
05:55:00 PM	0	0	0	0	1	3

[illegible]

Car Volumes

[illegible]

Truck Volumes

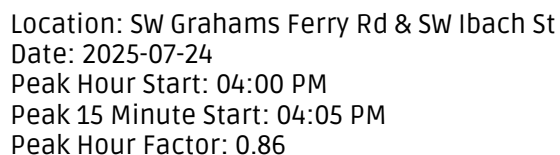
[illegible]

Bike Volumes

[illegible]

Pedestrian Volumes

Time	Pedestrians				Totals	
Time	North	South	East	West	15min	1hr
07:00:00 AM	0	0	0	0		
07:05:00 AM	0	0	0	0		
07:10:00 AM	0	0	1	0	1	
07:15:00 AM	0	1	0	0	2	
07:20:00 AM	0	0	0	0	2	
07:25:00 AM	2	0	0	1	4	
07:30:00 AM	0	0	0	0	3	
07:35:00 AM	0	0	0	2	5	
07:40:00 AM	0	0	0	1	3	
07:45:00 AM	0	0	0	0	3	
07:50:00 AM	0	0	0	0	1	
07:55:00 AM	1	0	0	0	1	9
08:00:00 AM	0	0	0	0	1	9
08:05:00 AM	0	0	0	0	1	9
08:10:00 AM	0	0	1	0	1	9
08:15:00 AM	0	0	0	0	1	8
08:20:00 AM	0	0	0	1	2	9
08:25:00 AM	0	0	0	0	1	6
08:30:00 AM	0	0	0	0	1	6
08:35:00 AM	0	0	0	0	0	4
08:40:00 AM	0	0	0	0	0	3
08:45:00 AM	0	0	0	0	0	3
08:50:00 AM	0	3	0	0	3	6
08:55:00 AM	0	1	1	1	6	8

[illegible]

Truck Volumes

[illegible]

Bike Volumes

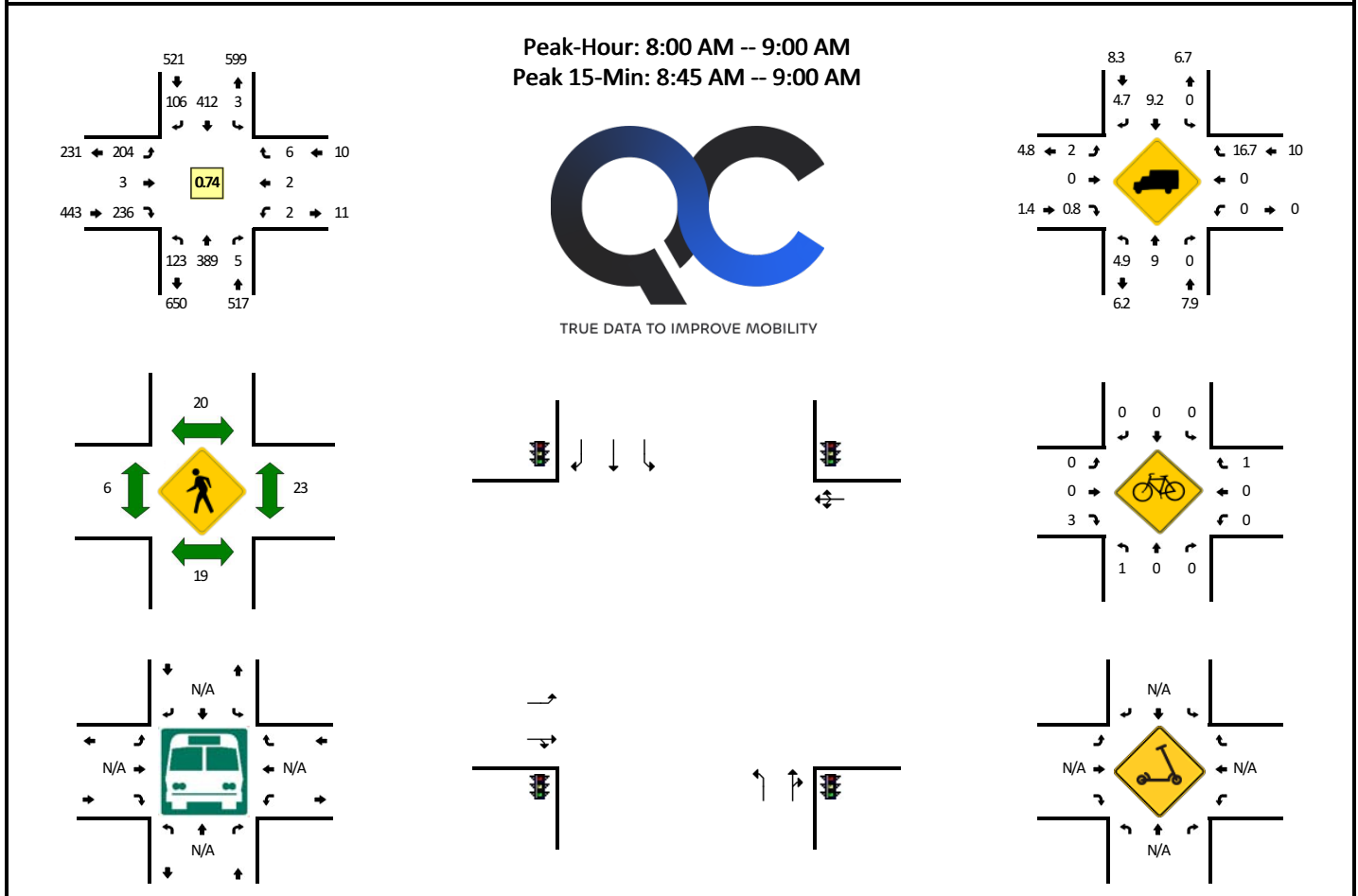
[illegible]

Pedestrian Volumes

Time	Pedestrians				Totals	
Time	North	South	East	West	15min	1hr
04:00:00 PM	0	0	0	0		
04:05:00 PM	0	0	0	0		
04:10:00 PM	0	0	0	1	1	
04:15:00 PM	0	0	0	2	3	
04:20:00 PM	0	0	0	0	3	
04:25:00 PM	0	0	0	0	2	
04:30:00 PM	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	3
05:00:00 PM	0	0	0	0	0	3
05:05:00 PM	0	0	0	0	0	3
05:10:00 PM	0	0	0	0	0	2
05:15:00 PM	0	0	0	0	0	0
05:20:00 PM	0	0	0	0	0	0
05:25:00 PM	0	0	0	0	0	0
05:30:00 PM	0	0	0	0	0	0
05:35:00 PM	0	0	0	1	1	1
05:40:00 PM	0	0	0	0	1	1
05:45:00 PM	0	0	0	0	1	1
05:50:00 PM	0	0	0	0	0	1
05:55:00 PM	0	0	0	0	0	1

LOCATION: SW Boones Ferry Rd -- SW Ibach St
CITY/STATE: Tualatin, OR

QC JOB #: 16635005
DATE: Thu, May 30 2024

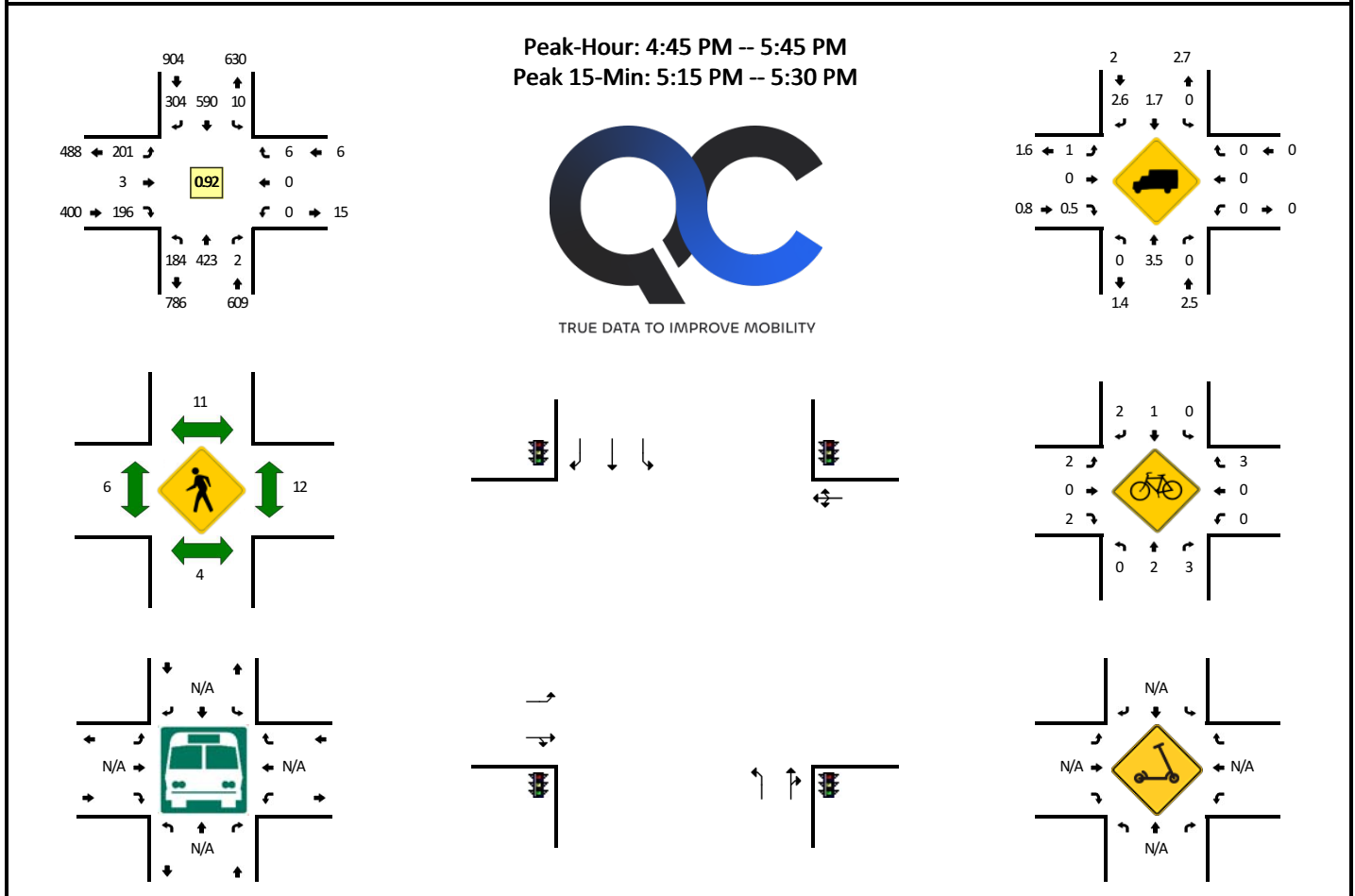


5-Min Count Period Beginning At	SW Boones Ferry Rd (Northbound)				SW Boones Ferry Rd (Southbound)				SW Ibach St (Eastbound)				SW Ibach St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	4	22	0	0	0	6	4	0	7	0	6	0	0	0	0	0	49	
7:05 AM	0	21	0	0	0	18	4	0	11	0	3	0	1	0	0	0	58	
7:10 AM	4	27	0	0	0	15	7	0	19	0	3	0	0	0	0	0	75	
7:15 AM	7	24	0	0	1	14	7	0	17	0	6	0	0	0	1	0	77	
7:20 AM	3	29	0	0	0	12	5	0	27	0	4	0	0	0	0	0	80	
7:25 AM	6	24	0	0	0	19	4	0	20	0	8	0	0	0	0	0	81	
7:30 AM	5	30	0	0	0	10	8	0	35	0	5	0	0	0	0	0	93	
7:35 AM	8	16	0	0	0	16	3	0	21	0	12	0	0	0	1	0	77	
7:40 AM	11	30	0	0	0	25	10	0	28	0	9	0	0	0	0	0	113	
7:45 AM	9	39	1	0	0	24	10	0	25	0	13	0	0	0	0	0	121	
7:50 AM	12	30	0	0	0	22	9	0	28	0	20	0	0	0	0	0	121	
7:55 AM	13	41	0	0	1	21	12	0	31	0	21	0	0	0	1	0	141	1086
8:00 AM	14	36	0	0	0	34	8	0	22	0	16	0	0	1	0	0	131	1168
8:05 AM	7	26	0	0	0	19	9	0	23	1	16	0	1	1	1	0	104	1214
8:10 AM	9	30	0	0	0	29	12	0	16	0	13	0	0	0	2	0	111	1250
8:15 AM	9	25	0	0	1	27	8	0	23	0	5	0	0	0	1	0	99	1272
8:20 AM	9	40	1	0	0	23	12	0	12	0	15	0	0	0	1	0	113	1305
8:25 AM	8	19	0	0	0	17	6	0	19	0	12	0	0	0	0	0	81	1305
8:30 AM	5	31	1	0	0	34	9	0	14	1	10	0	0	0	0	0	105	1317
8:35 AM	6	33	0	0	1	25	4	0	20	0	19	0	1	0	0	0	109	1349
8:40 AM	11	27	1	0	0	51	9	0	12	1	22	0	0	0	0	0	134	1370
8:45 AM	14	34	1	0	0	54	7	0	11	0	27	0	0	0	0	0	148	1397
8:50 AM	14	47	0	0	1	46	10	0	16	0	45	0	0	0	0	0	179	1455
8:55 AM	17	41	1	0	0	53	12	0	16	0	36	0	0	0	1	0	177	1491
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	180	488	8	0	4	612	116	0	172	0	432	0	0	0	4	0	2016	
Heavy Trucks	8	44	0	0	0	44	8	0	12	0	0	0	0	0	0	0	116	
Buses																		
Pedestrians		28				52				4				52			136	
Bicycles	0	0	0		0	0	0		0	0	8		0	0	0		8	
Scooters																		

Comments:

LOCATION: SW Boones Ferry Rd -- SW Ibach St
CITY/STATE: Tualatin, OR

QC JOB #: 16635006
DATE: Thu, May 30 2024



5-Min Count Period Beginning At	SW Boones Ferry Rd (Northbound)				SW Boones Ferry Rd (Southbound)				SW Ibach St (Eastbound)				SW Ibach St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:30 PM	11	36	0	0	0	50	16	0	12	0	11	0	0	0	0	0	136	
3:35 PM	8	24	0	0	0	60	14	0	8	0	20	0	0	0	0	0	134	
3:40 PM	12	32	0	0	3	54	22	0	18	2	20	0	1	0	0	0	164	
3:45 PM	18	49	1	0	2	57	10	0	16	2	15	0	0	0	1	0	171	
3:50 PM	30	48	0	0	1	40	15	0	10	6	14	0	0	5	8	0	177	
3:55 PM	21	59	0	0	1	45	12	0	16	2	13	0	0	2	2	0	173	
4:00 PM	30	51	1	0	2	48	15	0	8	0	23	0	0	2	1	0	181	
4:05 PM	17	31	1	0	2	51	20	0	14	0	25	0	1	0	0	0	162	
4:10 PM	11	30	0	0	0	31	7	0	6	0	20	0	0	2	1	0	108	
4:15 PM	21	25	0	0	1	52	14	0	17	0	20	0	0	0	1	0	151	
4:20 PM	14	24	1	0	0	60	17	0	15	0	16	0	0	0	0	0	147	
4:25 PM	9	26	1	0	0	59	27	0	13	0	23	0	1	0	0	0	159	1863
4:30 PM	2	17	0	0	0	31	25	0	9	0	6	0	0	0	0	0	90	1817
4:35 PM	13	33	0	0	0	47	15	0	22	0	27	0	0	0	0	0	157	1840
4:40 PM	11	30	0	0	1	47	19	0	23	0	17	0	0	0	0	0	148	1824
4:45 PM	13	30	0	0	1	60	22	0	18	0	19	0	0	0	1	0	164	1817
4:50 PM	11	27	0	0	1	53	24	0	19	0	21	0	0	0	0	0	156	1796
4:55 PM	5	24	0	0	0	63	34	0	19	0	12	0	0	0	0	0	157	1780
5:00 PM	11	36	0	0	1	52	26	0	16	0	14	0	0	0	0	0	156	1755
5:05 PM	18	30	1	0	0	32	24	0	17	0	22	0	0	0	2	0	146	1739
5:10 PM	13	31	0	0	0	48	23	0	11	0	19	0	0	0	0	0	145	1776
5:15 PM	15	40	0	0	0	42	23	0	24	1	28	0	0	0	0	0	173	1798
5:20 PM	26	50	0	0	0	52	26	0	18	0	19	0	0	0	1	0	192	1843
5:25 PM	20	41	0	0	2	45	19	0	13	0	14	0	0	0	0	0	154	1838
5:30 PM	18	35	0	0	1	42	28	0	23	1	10	0	0	0	1	0	159	1907
5:35 PM	19	45	0	0	1	56	28	0	4	1	9	0	0	0	1	0	164	1914
5:40 PM	15	34	1	0	3	45	27	0	19	0	9	0	0	0	0	0	153	1919
5:45 PM	5	26	1	0	1	47	22	0	9	0	5	0	1	0	2	0	119	1874
5:50 PM	8	32	1	0	0	60	11	0	15	0	13	0	0	0	0	0	140	1858
5:55 PM	10	31	0	0	2	52	20	0	18	0	17	0	0	0	1	0	151	1852
6:00 PM	15	28	1	0	1	53	18	0	5	0	15	0	0	0	1	0	137	1833
6:05 PM	13	36	0	0	0	54	16	0	8	0	12	0	0	0	2	0	141	1828
6:10 PM	12	23	0	0	0	37	25	0	8	0	8	0	0	0	0	0	113	1796
6:15 PM	19	21	1	0	1	36	20	0	10	0	5	0	0	0	0	0	113	1736
6:20 PM	9	24	0	0	1	40	10	0	8	0	7	0	0	0	0	0	99	1643
6:25 PM	10	18	0	0	0	36	14	0	12	0	10	0	0	1	0	0	101	1590

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	244	524	0	0	8	556	272	0	220	4	244	0	0	0	4	0	2076
Heavy Trucks	0	8	0		0	12	4		0	0	0		0	0	0		24
Buses																	
Pedestrians		8				24				20				12			64
Bicycles	0	4			0	0	0		0	0	0		0	0	4		16
Scooters																	
<i>Comments:</i>																	

Appendix D

Crash History Data

Preliminary Traffic Signal Warrants

Left-Turn Lane Warrants



CITY OF TUALATIN, WASHINGTON COUNTY

103RD AVE and MEIER DR, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

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

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

Traffic Signal Warrant Analysis



Project: SW Ibach St Townhouse Subdivision
 Date: 8/25/2025
 Scenario: 2027 Buildout Conditions

Major Street:	SW Ibach Street	Minor Street:	SW 103rd Avenue
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	185	PM Peak Hour Volumes:	18

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)	
		100%	70%	100%	70%
<u>Major St.</u>	<u>Minor St.</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>
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			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	1,850	8,850	
Minor Street*	180	2,650	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	1,850	13,300	
Minor Street*	180	1,350	No
<i>Combination Warrant</i>			
Major Street	1,850	10,640	
Minor Street*	180	2,120	No

Note: Minor street right-turning traffic volumes reduced by 25%.

Traffic Signal Warrant Analysis



Project: SW Ibach St Townhouse Subdivision
 Date: 8/25/2025
 Scenario: 2027 Buildout Conditions

Major Street:	SW Ibach Street	Minor Street:	Access
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	180	PM Peak Hour Volumes:	5

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)	
		100%	70%	100%	70%
<u>Major St.</u>	<u>Minor St.</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>
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			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	1,800	8,850	
Minor Street*	50	2,650	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	1,800	13,300	
Minor Street*	50	1,350	No
<i>Combination Warrant</i>			
Major Street	1,800	10,640	
Minor Street*	50	2,120	No

Note: Minor street right-turning traffic volumes reduced by 25%.

Traffic Signal Warrant Analysis



Project: SW Ibach St Townhouse Subdivision
 Date: 8/25/2025
 Scenario: 2027 Buildout Conditions

Major Street:	SW 103rd Avenue	Minor Street:	Access
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	56	PM Peak Hour Volumes:	5

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)	
		100%	70%	100%	70%
<u>Major St.</u>	<u>Minor St.</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>
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			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	560	8,850	
Minor Street*	50	2,650	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	560	13,300	
Minor Street*	50	1,350	No
<i>Combination Warrant</i>			
Major Street	560	10,640	
Minor Street*	50	2,120	No

Note: Minor street right-turning traffic volumes reduced by 25%.

Traffic Signal Warrant Analysis



Project: SW Ibach St Townhouse Subdivision
 Date: 8/25/2025
 Scenario: 2027 Buildout Conditions

Major Street:	SW Grahams Ferry Road	Minor Street:	SW Ibach Street
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	742	PM Peak Hour Volumes:	122

Warrant Used:

☒ 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)	
Major St.	Minor St.	100% Warrants	70% Warrants	100% Warrants	70% 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	7,420	8,850	
Minor Street*	1,220	2,650	No
Condition B: Interruption of Continuous Traffic			
Major Street	7,420	13,300	
Minor Street*	1,220	1,350	No
Combination Warrant			
Major Street	7,420	10,640	
Minor Street*	1,220	2,120	No

Note: Minor street right-turning traffic volumes reduced by 25%.

Left-Turn Lane Warrant Analysis



Project: 25052 - SW Ibach St Townhouse Subdivision
Intersection: Site Access at SW Ibach Street
Date: 8/25/2025
Scenario: 2027 Buildout Conditions - AM Peak Hour (WB)

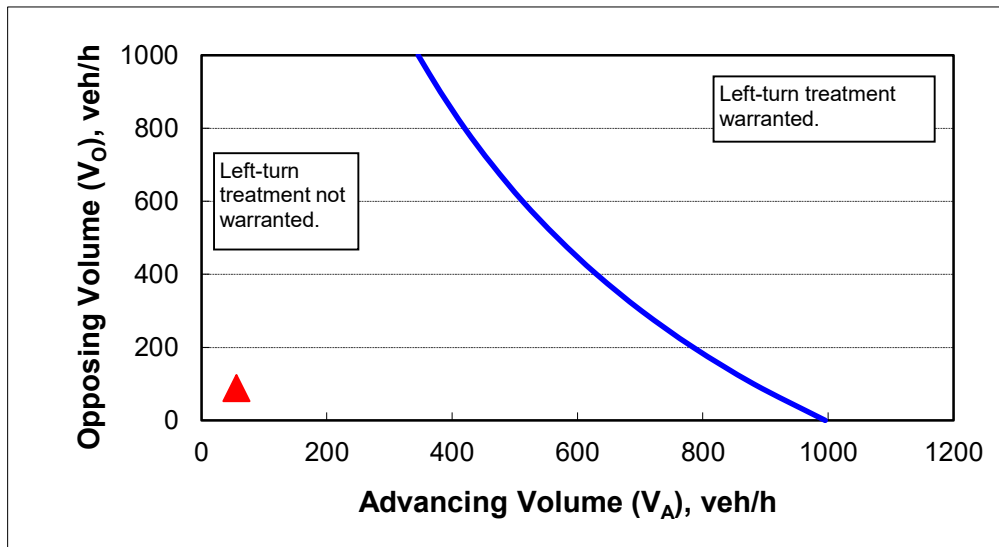
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	4%
Advancing volume (V_A), veh/h:	56
Opposing volume (V_O), veh/h:	88

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	894
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: 25052 - SW Ibach St Townhouse Subdivision
Intersection: Site Access at SW Ibach Street
Date: 8/25/2025
Scenario: 2027 Buildout Conditions - PM Peak Hour (WB)

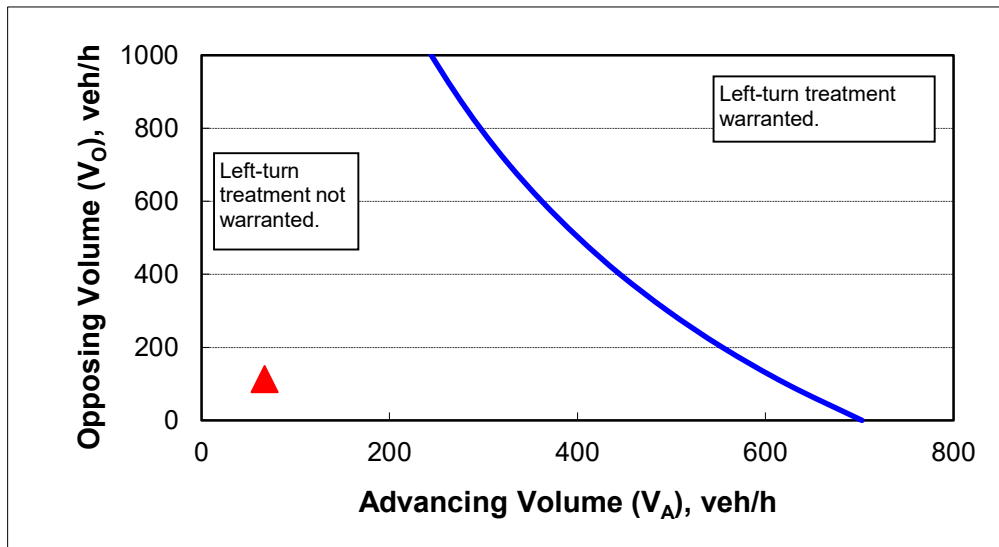
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	7%
Advancing volume (V_A), veh/h:	67
Opposing volume (V_O), veh/h:	113

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	613
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: 25052 - SW Ibach St Townhouse Subdivision
Intersection: Site Access at SW 103rd Avenue
Date: 8/25/2025
Scenario: 2027 Buildout Conditions - AM Peak Hour (SB)

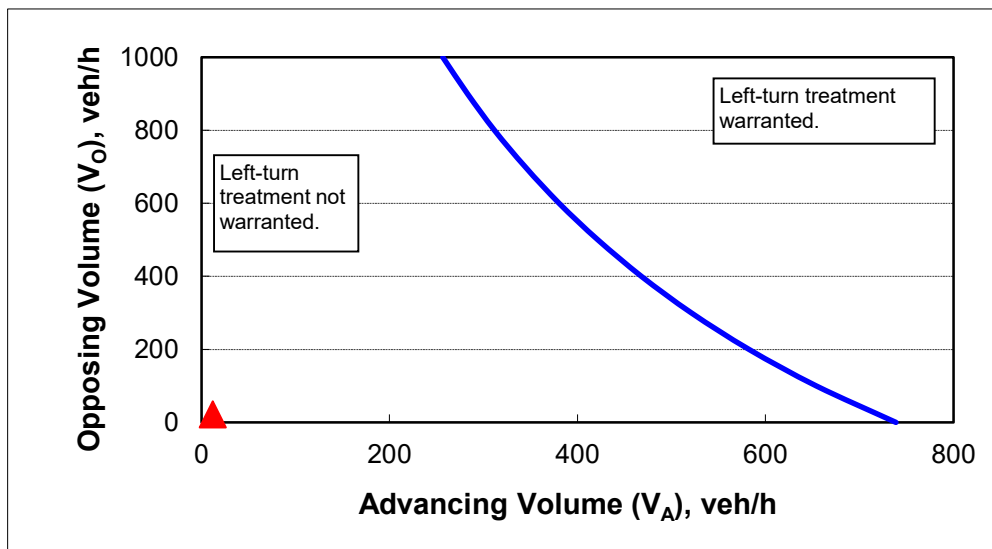
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	8%
Advancing volume (V_A), veh/h:	12
Opposing volume (V_O), veh/h:	22

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	719
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: 25052 - SW Ibach St Townhouse Subdivision
Intersection: Site Access at SW 103rd Avenue
Date: 8/25/2025
Scenario: 2027 Buildout Conditions - PM Peak Hour (SB)

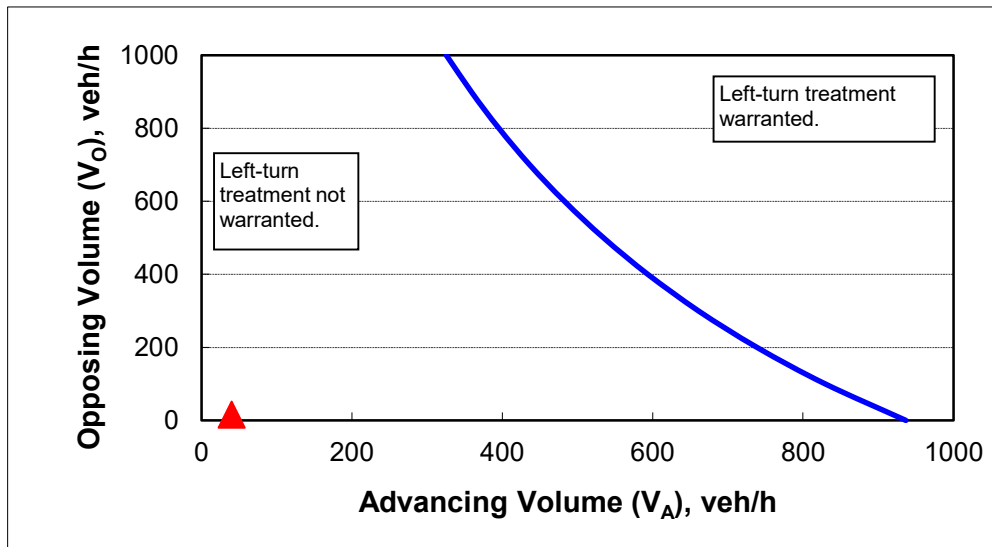
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	25
Percent of left-turns in advancing volume (V_A), %:	5%
Advancing volume (V_A), veh/h:	40
Opposing volume (V_O), veh/h:	16

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	918
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 E

Definitions

Synchro Reports

Queuing Reports





LEVEL OF SERVICE

Level of service is used to describe the quality of traffic flow. Levels of service A to C are considered good, and rural roads are usually designed for level of service C. Urban streets and signalized intersections are typically designed for level of service D. Level of service E is considered to be the limit of acceptable delay. For unsignalized intersections, level of service E is generally considered acceptable. Here is a more complete description of levels of service:

Level of service A: Very low delay at intersections, with all traffic signal cycles clearing and no vehicles waiting through more than one signal cycle. On highways, low volume and high speeds, with speeds not restricted by other vehicles.

Level of service B: Operating speeds beginning to be affected by other traffic; short traffic delays at intersections. Higher average intersection delay than for level of service A resulting from more vehicles stopping.

Level of service C: Operating speeds and maneuverability closely controlled by other traffic; higher delays at intersections than for level of service B due to a significant number of vehicles stopping. Not all signal cycles clear the waiting vehicles. This is the recommended design standard for rural highways.

Level of service D: Tolerable operating speeds; long traffic delays occur at intersections. The influence of congestion is noticeable. At traffic signals many vehicles stop, and the proportion of vehicles not stopping declines. The number of signal cycle failures, for which vehicles must wait through more than one signal cycle, are noticeable. This is typically the design level for urban signalized intersections.

Level of service E: Restricted speeds, very long traffic delays at traffic signals, and traffic volumes near capacity. Flow is unstable so that any interruption, no matter how minor, will cause queues to form and service to deteriorate to level of service F. Traffic signal cycle failures are frequent occurrences. For unsignalized intersections, level of service E or better is generally considered acceptable.

Level of service F: Extreme delays, resulting in long queues which may interfere with other traffic movements. There may be stoppages of long duration, and speeds may drop to zero. There may be frequent signal cycle failures. Level of service F will typically result when vehicle arrival rates are greater than capacity. It is considered unacceptable by most drivers.



*LEVEL OF SERVICE CRITERIA
FOR SIGNALIZED INTERSECTIONS*

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (Seconds)
A	<10
B	10-20
C	20-35
D	35-55
E	55-80
F	>80

*LEVEL OF SERVICE CRITERIA
FOR UNSIGNALIZED INTERSECTIONS*

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (Seconds)
A	<10
B	10-15
C	15-25
D	25-35
E	35-50
F	>50

Intersection

Intersection Delay, s/veh 7.3

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	61	2	4	47	1	6	0	19	3	0	2
Future Vol, veh/h	1	61	2	4	47	1	6	0	19	3	0	2
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	77	3	5	59	1	8	0	24	4	0	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.4	7.4	6.9	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	2%	8%	60%
Vol Thru, %	0%	95%	90%	0%
Vol Right, %	76%	3%	2%	40%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	25	64	52	5
LT Vol	6	1	4	3
Through Vol	0	61	47	0
RT Vol	19	2	1	2
Lane Flow Rate	32	81	66	6
Geometry Grp	1	1	1	1
Degree of Util (X)	0.033	0.09	0.074	0.007
Departure Headway (Hd)	3.75	4.001	4.031	4.059
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	944	896	888	873
Service Time	1.814	2.025	2.059	2.126
HCM Lane V/C Ratio	0.034	0.09	0.074	0.007
HCM Control Delay, s/veh	6.9	7.4	7.4	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.2	0

HCM 7th TWSC
3: SW 103rd Avenue & SW Gardner Court

08/07/2025

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	0	0	21	10	2
Future Vol, veh/h	3	0	0	21	10	2
Conflicting Peds, #/hr	0	0	12	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	0	0	35	17	3

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	65	30	32	0	-	0
Stage 1	30	-	-	-	-	-
Stage 2	35	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	945	1050	1593	-	-	-
Stage 1	997	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	924	1038	1575	-	-	-
Mov Cap-2 Maneuver	924	-	-	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	981	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.92	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1575	-	924	-	-
HCM Lane V/C Ratio	-	-	0.005	-	-
HCM Control Delay (s/veh)	0	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰		↰	↱		↰	↱	
Traffic Vol, veh/h	90	0	1	0	2	14	4	272	1	2	114	55
Future Vol, veh/h	90	0	1	0	2	14	4	272	1	2	114	55
Conflicting Peds, #/hr	1	0	0	0	0	1	21	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	0	0	0	5	5	5	5	5	5
Mvmt Flow	115	0	1	0	3	18	5	349	1	3	146	71

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	569	569	202	512	603	351	238	0	0	351	0	0
Stage 1	208	208	-	361	361	-	-	-	-	-	-	-
Stage 2	361	361	-	151	243	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	436	435	843	476	415	697	1312	-	-	1191	-	-
Stage 1	799	734	-	662	630	-	-	-	-	-	-	-
Stage 2	661	629	-	856	709	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	411	423	827	472	404	695	1286	-	-	1190	-	-
Mov Cap-2 Maneuver	503	495	-	544	483	-	-	-	-	-	-	-
Stage 1	781	718	-	659	627	-	-	-	-	-	-	-
Stage 2	638	626	-	853	693	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v14.22		10.64	0.11	0.09
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1286	-	-	503	827	659	1190	-	-
HCM Lane V/C Ratio	0.004	-	-	0.229	0.002	0.031	0.002	-	-
HCM Control Delay (s/veh)	7.8	-	-	14.3	9.4	10.6	8	-	-
HCM Lane LOS	A	-	-	B	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0	0.1	0	-	-

HCM Signalized Intersection Capacity Analysis

5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

08/07/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	3	241	2	2	6	125	397	5	3	420	108
Future Volume (vph)	208	3	241	2	2	6	125	397	5	3	420	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.94			0.96		1.00	0.99		1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00			1.00		0.99	1.00		0.99	1.00	1.00
Frt	1.00	0.85			0.92		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	1510			1526		1671	1754		1659	1759	1408
Flt Permitted	0.95	1.00			0.98		0.17	1.00		0.37	1.00	1.00
Satd. Flow (perm)	1787	1510			1526		306	1754		657	1759	1408
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	281	4	326	3	3	8	169	536	7	4	568	146
RTOR Reduction (vph)	0	259	0	0	7	0	0	1	0	0	0	88
Lane Group Flow (vph)	281	71	0	0	7	0	169	542	0	4	568	58
Confl. Peds. (#/hr)	20		19	19		20	6		23	23		23
Confl. Bikes (#/hr)			3			1			1			
Heavy Vehicles (%)	1%	1%	1%	10%	10%	10%	8%	8%	8%	8%	8%	8%
Turn Type	Split	NA		Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases							2			6		6
Actuated Green, G (s)	15.1	15.1			4.7		44.0	37.9		31.6	30.5	30.5
Effective Green, g (s)	16.1	16.1			5.7		45.0	38.9		33.6	31.5	31.5
Actuated g/C Ratio	0.20	0.20			0.07		0.57	0.49		0.43	0.40	0.40
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	365	308			110		339	865		306	703	562
v/s Ratio Prot	c0.16	0.05			c0.00		c0.06	0.31		0.00	c0.32	
v/s Ratio Perm							0.22			0.01		0.04
v/c Ratio	0.76	0.22			0.05		0.49	0.62		0.01	0.80	0.10
Uniform Delay, d1	29.6	26.1			34.0		11.8	14.6		13.2	20.9	14.8
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	9.4	0.3			0.2		1.1	1.4		0.0	6.7	0.0
Delay (s)	39.0	26.5			34.2		13.0	16.0		13.2	27.7	14.8
Level of Service	D	C			C		B	B		B	C	B
Approach Delay (s/veh)		32.2			34.2			15.3			25.0	
Approach LOS		C			C			B			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			23.9				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			78.8				Sum of lost time (s)			17.0		
Intersection Capacity Utilization			57.3%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

08/07/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	3	241	2	2	6	125	397	5	3	420	108
Future Volume (veh/h)	208	3	241	2	2	6	125	397	5	3	420	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.89	1.00		0.95	0.99		0.97
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	1885	1885	1885	1752	1752	1752	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	281	4	326	3	3	8	169	536	7	4	568	146
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	1	1	1	10	10	10	8	8	8	8	8	8
Cap, veh/h	383	4	312	18	18	48	374	840	11	345	674	554
Arrive On Green	0.21	0.21	0.20	0.04	0.06	0.04	0.12	0.48	0.47	0.02	0.38	0.38
Sat Flow, veh/h	1795	18	1464	314	314	837	1697	1753	23	1697	1781	1464
Grp Volume(v), veh/h	281	0	330	14	0	0	169	0	543	4	568	146
Grp Sat Flow(s),veh/h/ln	1795	0	1482	1465	0	0	1697	0	1776	1697	1781	1464
Q Serve(g_s), s	10.3	0.0	15.0	0.6	0.0	0.0	3.7	0.0	16.1	0.1	20.5	4.8
Cycle Q Clear(g_c), s	10.3	0.0	15.0	0.6	0.0	0.0	3.7	0.0	16.1	0.1	20.5	4.8
Prop In Lane	1.00		0.99	0.21		0.57	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	383	0	316	84	0	0	374	0	851	345	674	554
V/C Ratio(X)	0.73	0.00	1.04	0.17	0.00	0.00	0.45	0.00	0.64	0.01	0.84	0.26
Avail Cap(c_a), veh/h	383	0	316	187	0	0	381	0	851	523	785	645
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	1.00	1.00
Uniform Delay (d), s/veh	25.8	0.0	28.1	31.9	0.0	0.0	13.3	0.0	13.7	13.2	20.0	15.1
Incr Delay (d2), s/veh	7.1	0.0	62.4	0.9	0.0	0.0	0.9	0.0	1.6	0.0	7.4	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	10.5	0.2	0.0	0.0	1.2	0.0	5.9	0.0	8.9	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.9	0.0	90.5	32.9	0.0	0.0	14.2	0.0	15.3	13.2	27.3	15.3
LnGrp LOS	C		F	C			B		B	B	C	B
Approach Vol, veh/h	611		14			712			718			
Approach Delay, s/veh	64.0		32.9			15.1			24.8			
Approach LOS	E		C			B			C			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	37.7		19.0	12.7	30.6		8.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	8.0	30.0		14.0	8.0	30.0		8.0				
Max Q Clear Time (g_c+I1), s	2.1	18.1		17.0	5.7	22.5		2.6				
Green Ext Time (p_c), s	0.0	3.6		0.0	0.1	3.1		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	33.1											
HCM 7th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												

Intersection

Intersection Delay, s/veh 7.5

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	88	19	19	37	3	5	1	14	6	0	3
Future Vol, veh/h	8	88	19	19	37	3	5	1	14	6	0	3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	9	97	21	21	41	3	5	1	15	7	0	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.6	7.4	7	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	7%	32%	67%
Vol Thru, %	5%	77%	63%	0%
Vol Right, %	70%	17%	5%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	115	59	9
LT Vol	5	8	19	6
Through Vol	1	88	37	0
RT Vol	14	19	3	3
Lane Flow Rate	22	126	65	10
Geometry Grp	1	1	1	1
Degree of Util (X)	0.024	0.138	0.074	0.011
Departure Headway (Hd)	3.866	3.92	4.085	4.18
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	912	914	875	844
Service Time	1.947	1.946	2.119	2.264
HCM Lane V/C Ratio	0.024	0.138	0.074	0.012
HCM Control Delay, s/veh	7	7.6	7.4	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.5	0.2	0

HCM 7th TWSC
3: SW 103rd Avenue & SW Gardner Court

08/07/2025

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	5	0	0	15	30	7
Future Vol, veh/h	5	0	0	15	30	7
Conflicting Peds, #/hr	0	0	3	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	7	0	0	21	42	10

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	71	50	55	0	-	0
Stage 1	50	-	-	-	-	-
Stage 2	21	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	938	1024	1563	-	-	-
Stage 1	977	-	-	-	-	-
Stage 2	1007	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	933	1021	1558	-	-	-
Mov Cap-2 Maneuver	933	-	-	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	1004	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.89	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1558	-	933	-	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Control Delay (s/veh)	0	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰		↰	↱		↰	↱	
Traffic Vol, veh/h	102	1	13	2	0	6	6	313	1	12	328	48
Future Vol, veh/h	102	1	13	2	0	6	6	313	1	12	328	48
Conflicting Peds, #/hr	0	0	0	0	0	0	11	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	1	1	1	0	0	0	2	2	2	4	4	4
Mvmt Flow	119	1	15	2	0	7	7	364	1	14	381	56

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	826	827	420	788	855	365	448	0	0	365	0	0
Stage 1	448	448	-	378	378	-	-	-	-	-	-	-
Stage 2	378	379	-	410	476	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.1	6.5	6.2	4.12	-	-	4.14	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.5	4	3.3	2.218	-	-	2.236	-	-
Pot Cap-1 Maneuver	292	308	635	311	298	685	1112	-	-	1182	-	-
Stage 1	592	574	-	647	618	-	-	-	-	-	-	-
Stage 2	646	616	-	623	560	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	281	299	629	297	289	685	1100	-	-	1182	-	-
Mov Cap-2 Maneuver	401	401	-	417	394	-	-	-	-	-	-	-
Stage 1	579	562	-	643	614	-	-	-	-	-	-	-
Stage 2	635	612	-	599	548	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v16.97		11.2	0.16	0.25
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1100	-	-	401	629	590	1182	-	-
HCM Lane V/C Ratio	0.006	-	-	0.298	0.024	0.016	0.012	-	-
HCM Control Delay (s/veh)	8.3	-	-	17.7	10.9	11.2	8.1	-	-
HCM Lane LOS	A	-	-	C	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.2	0.1	0	0	-	-

HCM Signalized Intersection Capacity Analysis

5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

08/07/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	3	200	0	0	6	188	431	2	10	602	310
Future Volume (vph)	205	3	200	0	0	6	188	431	2	10	602	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.96			0.94		1.00	0.99		1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.85			0.86		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	1548			1549		1752	1843		1759	1863	1516
Flt Permitted	0.95	1.00			1.00		0.14	1.00		0.47	1.00	1.00
Satd. Flow (perm)	1787	1548			1549		260	1843		874	1863	1516
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	3	217	0	0	7	204	468	2	11	654	337
RTOR Reduction (vph)	0	177	0	0	7	0	0	0	0	0	0	156
Lane Group Flow (vph)	223	43	0	0	0	0	204	470	0	11	654	181
Confl. Peds. (#/hr)	11		4	4		11	6		12	12		12
Confl. Bikes (#/hr)			4			3			5			3
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	3%	3%	3%	2%	2%	2%
Turn Type	Split	NA			NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	13.2	13.2			3.2		46.4	40.3		34.0	32.9	32.9
Effective Green, g (s)	14.2	14.2			4.2		47.4	41.3		36.0	33.9	33.9
Actuated g/C Ratio	0.18	0.18			0.05		0.61	0.53		0.46	0.44	0.44
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	326	282			83		340	978		428	811	660
v/s Ratio Prot	c0.12	0.03			c0.00		c0.07	0.26		0.00	c0.35	
v/s Ratio Perm							0.29			0.01		0.12
v/c Ratio	0.68	0.15			0.00		0.60	0.48		0.02	0.80	0.27
Uniform Delay, d1	29.7	26.7			34.8		12.2	11.4		11.3	19.0	14.0
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.8	0.2			0.0		2.9	0.3		0.0	5.8	0.2
Delay (s)	35.5	26.9			34.8		15.1	11.8		11.3	24.9	14.2
Level of Service	D	C			C		B	B		B	C	B
Approach Delay (s/veh)		31.2			34.8			12.8			21.2	
Approach LOS		C			C			B			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			20.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			77.8				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			70.2%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

08/07/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	3	200	0	0	6	188	431	2	10	602	310
Future Volume (veh/h)	205	3	200	0	0	6	188	431	2	10	602	310
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.92	1.00		0.96	0.99		0.96
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	1885	1885	1885	1900	1900	1900	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	223	3	217	0	0	7	204	468	2	11	654	337
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	0	0	0	3	3	3	2	2	2
Cap, veh/h	331	4	274	0	0	58	388	939	4	483	782	638
Arrive On Green	0.18	0.18	0.17	0.00	0.00	0.02	0.13	0.51	0.49	0.04	0.42	0.42
Sat Flow, veh/h	1795	21	1485	0	0	1488	1767	1846	8	1781	1870	1527
Grp Volume(v), veh/h	223	0	220	0	0	7	204	0	470	11	654	337
Grp Sat Flow(s),veh/h/ln	1795	0	1506	0	0	1488	1767	0	1854	1781	1870	1527
Q Serve(g_s), s	8.0	0.0	9.7	0.0	0.0	0.3	3.9	0.0	11.6	0.2	21.7	11.4
Cycle Q Clear(g_c), s	8.0	0.0	9.7	0.0	0.0	0.3	3.9	0.0	11.6	0.2	21.7	11.4
Prop In Lane	1.00		0.99	0.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	331	0	278	0	0	58	388	0	943	483	782	638
V/C Ratio(X)	0.67	0.00	0.79	0.00	0.00	0.12	0.53	0.00	0.50	0.02	0.84	0.53
Avail Cap(c_a), veh/h	337	0	282	0	0	193	392	0	943	649	890	727
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	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	0.0	27.5	0.0	0.0	32.6	13.0	0.0	11.2	10.6	18.1	15.1
Incr Delay (d2), s/veh	5.1	0.0	14.0	0.0	0.0	0.9	1.3	0.0	0.4	0.0	6.4	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	3.7	0.0	4.4	0.0	0.0	0.1	1.3	0.0	4.1	0.1	9.5	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	31.4	0.0	41.5	0.0	0.0	33.5	14.2	0.0	11.6	10.6	24.4	15.8
LnGrp LOS	C		D			C	B		B	B	C	B
Approach Vol, veh/h	443		7				674				1002	
Approach Delay, s/veh	36.4		33.5				12.4				21.4	
Approach LOS	D		C				B				C	
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	6.5	39.3	16.8		12.8	33.0	6.7					
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s	8.0	32.0	12.0		8.0	32.0	8.0					
Max Q Clear Time (g_c+I1), s	2.2	13.6	11.7		5.9	23.7	2.3					
Green Ext Time (p_c), s	0.0	3.8	0.1		0.1	4.3	0.0					
Intersection Summary												
HCM 7th Control Delay, s/veh	21.7											
HCM 7th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												

Intersection												
Intersection Delay, s/veh	7.3											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	63	2	4	49	1	6	0	20	3	0	2
Future Vol, veh/h	1	63	2	4	49	1	6	0	20	3	0	2
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	80	3	5	62	1	8	0	25	4	0	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.4	7.4	7	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	2%	7%	60%
Vol Thru, %	0%	95%	91%	0%
Vol Right, %	77%	3%	2%	40%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	26	66	54	5
LT Vol	6	1	4	3
Through Vol	0	63	49	0
RT Vol	20	2	1	2
Lane Flow Rate	33	84	68	6
Geometry Grp	1	1	1	1
Degree of Util (X)	0.034	0.093	0.077	0.007
Departure Headway (Hd)	3.75	4.005	4.035	4.067
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	943	894	887	870
Service Time	1.818	2.031	2.063	2.139
HCM Lane V/C Ratio	0.035	0.094	0.077	0.007
HCM Control Delay, s/veh	7	7.4	7.4	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.2	0

HCM 7th TWSC
3: SW 103rd Avenue & SW Gardner Court

08/07/2025

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	0	0	22	10	2
Future Vol, veh/h	3	0	0	22	10	2
Conflicting Peds, #/hr	0	0	12	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	0	0	37	17	3

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	67	30	32	0	-	0
Stage 1	30	-	-	-	-	-
Stage 2	37	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	943	1050	1593	-	-	-
Stage 1	997	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	922	1038	1575	-	-	-
Mov Cap-2 Maneuver	922	-	-	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	980	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.93	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1575	-	922	-	-
HCM Lane V/C Ratio	-	-	0.005	-	-
HCM Control Delay (s/veh)	0	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰	↱	↰	↱		↰	↱	
Traffic Vol, veh/h	94	0	1	0	2	15	4	283	1	2	119	57
Future Vol, veh/h	94	0	1	0	2	15	4	283	1	2	119	57
Conflicting Peds, #/hr	1	0	0	0	0	1	21	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	0	0	0	5	5	5	5	5	5
Mvmt Flow	121	0	1	0	3	19	5	363	1	3	153	73

Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	591	591	210	532	626	365	247	0	0	365	0	0
Stage 1	215	215	-	375	375	-	-	-	-	-	-	-
Stage 2	375	375	-	158	252	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	422	423	835	461	403	684	1302	-	-	1177	-	-
Stage 1	792	728	-	650	621	-	-	-	-	-	-	-
Stage 2	650	620	-	849	702	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	397	411	818	457	392	683	1276	-	-	1176	-	-
Mov Cap-2 Maneuver	491	486	-	533	474	-	-	-	-	-	-	-
Stage 1	774	712	-	647	618	-	-	-	-	-	-	-
Stage 2	626	617	-	846	687	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v14.64		10.74	0.11	0.09
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1276	-	-	491	818	649	1176	-	-
HCM Lane V/C Ratio	0.004	-	-	0.245	0.002	0.034	0.002	-	-
HCM Control Delay (s/veh)	7.8	-	-	14.7	9.4	10.7	8.1	-	-
HCM Lane LOS	A	-	-	B	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1	0	0.1	0	-	-

HCM Signalized Intersection Capacity Analysis

5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

08/07/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	3	251	2	2	6	130	413	5	3	437	112
Future Volume (vph)	216	3	251	2	2	6	130	413	5	3	437	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.94			0.96		1.00	0.99		1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.85			0.92		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	1509			1525		1671	1754		1661	1759	1407
Flt Permitted	0.95	1.00			0.98		0.16	1.00		0.35	1.00	1.00
Satd. Flow (perm)	1787	1509			1525		285	1754		620	1759	1407
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	292	4	339	3	3	8	176	558	7	4	591	151
RTOR Reduction (vph)	0	270	0	0	7	0	0	1	0	0	0	89
Lane Group Flow (vph)	292	73	0	0	7	0	176	564	0	4	591	62
Confl. Peds. (#/hr)	20		19	19		20	6		23	23		23
Confl. Bikes (#/hr)			3			1			1			
Heavy Vehicles (%)	1%	1%	1%	10%	10%	10%	8%	8%	8%	8%	8%	8%
Turn Type	Split	NA		Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases							2			6		6
Actuated Green, G (s)	15.2	15.2			4.8		45.0	38.9		32.7	31.6	31.6
Effective Green, g (s)	16.2	16.2			5.8		46.0	39.9		34.7	32.6	32.6
Actuated g/C Ratio	0.20	0.20			0.07		0.57	0.50		0.43	0.41	0.41
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	361	305			110		326	874		296	716	573
v/s Ratio Prot	c0.16	0.05			c0.00		c0.06	0.32		0.00	c0.34	
v/s Ratio Perm							0.25			0.01		0.04
v/c Ratio	0.80	0.23			0.05		0.53	0.64		0.01	0.82	0.10
Uniform Delay, d1	30.4	26.7			34.5		12.4	14.8		13.1	21.1	14.6
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	12.5	0.4			0.2		1.7	1.6		0.0	7.7	0.0
Delay (s)	42.9	27.1			34.7		14.1	16.4		13.1	28.8	14.7
Level of Service	D	C			C		B	B		B	C	B
Approach Delay (s/veh)		34.4			34.7			15.9			25.9	
Approach LOS		C			C			B			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			25.0				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			80.0				Sum of lost time (s)			17.0		
Intersection Capacity Utilization			58.8%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

08/07/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	3	251	2	2	6	130	413	5	3	437	112
Future Volume (veh/h)	216	3	251	2	2	6	130	413	5	3	437	112
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.89	1.00		0.96	0.99		0.97
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	1885	1885	1885	1752	1752	1752	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	292	4	339	3	3	8	176	558	7	4	591	151
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	1	1	1	10	10	10	8	8	8	8	8	8
Cap, veh/h	377	4	308	18	18	47	365	853	11	337	688	566
Arrive On Green	0.21	0.21	0.20	0.04	0.06	0.04	0.12	0.49	0.47	0.02	0.39	0.39
Sat Flow, veh/h	1795	17	1464	314	314	836	1697	1754	22	1697	1781	1465
Grp Volume(v), veh/h	292	0	343	14	0	0	176	0	565	4	591	151
Grp Sat Flow(s),veh/h/ln	1795	0	1481	1463	0	0	1697	0	1776	1697	1781	1465
Q Serve(g_s), s	11.0	0.0	15.0	0.7	0.0	0.0	3.8	0.0	17.1	0.1	21.7	5.0
Cycle Q Clear(g_c), s	11.0	0.0	15.0	0.7	0.0	0.0	3.8	0.0	17.1	0.1	21.7	5.0
Prop In Lane	1.00		0.99	0.21		0.57	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	377	0	311	83	0	0	365	0	864	337	688	566
V/C Ratio(X)	0.77	0.00	1.10	0.17	0.00	0.00	0.48	0.00	0.65	0.01	0.86	0.27
Avail Cap(c_a), veh/h	377	0	311	184	0	0	371	0	864	512	774	636
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	1.00	1.00
Uniform Delay (d), s/veh	26.6	0.0	28.7	32.4	0.0	0.0	13.7	0.0	13.8	13.2	20.1	15.0
Incr Delay (d2), s/veh	9.6	0.0	81.3	0.9	0.0	0.0	1.0	0.0	1.8	0.0	8.8	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	12.1	0.3	0.0	0.0	1.3	0.0	6.3	0.0	9.7	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	36.2	0.0	110.0	33.4	0.0	0.0	14.7	0.0	15.6	13.2	28.9	15.2
LnGrp LOS	D		F	C			B		B	B	C	B
Approach Vol, veh/h	635					14	741		746			
Approach Delay, s/veh	76.1					33.4	15.4		26.1			
Approach LOS	E					C	B		C			
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.6	38.7	19.0		12.8	31.6	8.0					
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s	8.0	30.0	14.0		8.0	30.0	8.0					
Max Q Clear Time (g_c+I1), s	2.1	19.1	17.0		5.8	23.7	2.7					
Green Ext Time (p_c), s	0.0	3.6	0.0		0.1	2.8	0.0					
Intersection Summary												
HCM 7th Control Delay, s/veh	37.3											
HCM 7th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												

Intersection												
Intersection Delay, s/veh	7.5											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	92	20	20	38	3	5	1	15	6	0	3
Future Vol, veh/h	8	92	20	20	38	3	5	1	15	6	0	3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	9	101	22	22	42	3	5	1	16	7	0	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.6	7.5	7.1	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	7%	33%	67%
Vol Thru, %	5%	77%	62%	0%
Vol Right, %	71%	17%	5%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	21	120	61	9
LT Vol	5	8	20	6
Through Vol	1	92	38	0
RT Vol	15	20	3	3
Lane Flow Rate	23	132	67	10
Geometry Grp	1	1	1	1
Degree of Util (X)	0.025	0.144	0.076	0.012
Departure Headway (Hd)	3.868	3.923	4.094	4.194
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	911	914	873	841
Service Time	1.952	1.95	2.131	2.28
HCM Lane V/C Ratio	0.025	0.144	0.077	0.012
HCM Control Delay, s/veh	7.1	7.6	7.5	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.5	0.2	0

HCM 7th TWSC
3: SW 103rd Avenue & SW Gardner Court

08/07/2025

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	0	0	16	31	7
Future Vol, veh/h	5	0	0	16	31	7
Conflicting Peds, #/hr	0	0	3	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	7	0	0	23	44	10

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	74	52	57	0	-	0
Stage 1	52	-	-	-	-	-
Stage 2	23	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	934	1022	1561	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	1005	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	929	1019	1557	-	-	-
Mov Cap-2 Maneuver	929	-	-	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	1002	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1557	-	929	-	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Control Delay (s/veh)	0	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰	↱	↰	↱		↰	↱	
Traffic Vol, veh/h	106	1	14	2	0	6	6	326	1	12	341	50
Future Vol, veh/h	106	1	14	2	0	6	6	326	1	12	341	50
Conflicting Peds, #/hr	0	0	0	0	0	0	11	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	1	1	1	0	0	0	2	2	2	4	4	4
Mvmt Flow	123	1	16	2	0	7	7	379	1	14	397	58

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	858	859	437	819	887	380	466	0	0	380	0	0
Stage 1	464	464	-	394	394	-	-	-	-	-	-	-
Stage 2	393	394	-	425	494	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.1	6.5	6.2	4.12	-	-	4.14	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.5	4	3.3	2.218	-	-	2.236	-	-
Pot Cap-1 Maneuver	278	295	622	297	285	672	1096	-	-	1167	-	-
Stage 1	580	565	-	635	609	-	-	-	-	-	-	-
Stage 2	634	607	-	611	550	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	268	287	615	283	277	672	1084	-	-	1167	-	-
Mov Cap-2 Maneuver	390	391	-	404	383	-	-	-	-	-	-	-
Stage 1	567	552	-	631	605	-	-	-	-	-	-	-
Stage 2	623	603	-	587	538	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v17.63		11.35	0.15	0.24
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1084	-	-	390	615	577	1167	-	-
HCM Lane V/C Ratio	0.006	-	-	0.319	0.026	0.016	0.012	-	-
HCM Control Delay (s/veh)	8.3	-	-	18.5	11	11.3	8.1	-	-
HCM Lane LOS	A	-	-	C	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.4	0.1	0	0	-	-

HCM Signalized Intersection Capacity Analysis

5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

08/07/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	3	208	0	0	6	196	448	2	10	626	323
Future Volume (vph)	213	3	208	0	0	6	196	448	2	10	626	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.96			0.94		1.00	0.99		1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.85			0.86		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	1547			1548		1752	1843		1760	1863	1516
Flt Permitted	0.95	1.00			1.00		0.12	1.00		0.45	1.00	1.00
Satd. Flow (perm)	1787	1547			1548		234	1843		840	1863	1516
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	232	3	226	0	0	7	213	487	2	11	680	351
RTOR Reduction (vph)	0	185	0	0	7	0	0	0	0	0	0	155
Lane Group Flow (vph)	232	44	0	0	0	0	213	489	0	11	680	196
Confl. Peds. (#/hr)	11		4	4		11	6		12	12		12
Confl. Bikes (#/hr)			4			3			5			3
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	3%	3%	3%	2%	2%	2%
Turn Type	Split	NA			NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	13.3	13.3			3.2		47.3	41.2		34.9	33.8	33.8
Effective Green, g (s)	14.3	14.3			4.2		48.3	42.2		36.9	34.8	34.8
Actuated g/C Ratio	0.18	0.18			0.05		0.61	0.54		0.47	0.44	0.44
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	324	280			82		326	986		417	822	669
v/s Ratio Prot	c0.13	0.03			c0.00		c0.08	0.27		0.00	c0.37	
v/s Ratio Perm							0.32			0.01		0.13
v/c Ratio	0.71	0.15			0.00		0.65	0.49		0.02	0.82	0.29
Uniform Delay, d1	30.3	27.1			35.3		13.0	11.5		11.2	19.3	14.1
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.3	0.2			0.0		4.6	0.3		0.0	6.8	0.2
Delay (s)	37.6	27.4			35.3		17.6	11.9		11.2	26.2	14.3
Level of Service	D	C			D		B	B		B	C	B
Approach Delay (s/veh)		32.5			35.3			13.7			22.0	
Approach LOS		C			D			B			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			21.6				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			78.8				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			72.3%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

08/07/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	213	3	208	0	0	6	196	448	2	10	626	323
Future Volume (veh/h)	213	3	208	0	0	6	196	448	2	10	626	323
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.92	1.00		0.96	1.00		0.96
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	1885	1885	1885	1900	1900	1900	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	232	3	226	0	0	7	213	487	2	11	680	351
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	0	0	0	3	3	3	2	2	2
Cap, veh/h	330	4	273	0	0	58	376	950	4	474	795	649
Arrive On Green	0.18	0.18	0.17	0.00	0.00	0.02	0.13	0.51	0.50	0.04	0.42	0.42
Sat Flow, veh/h	1795	20	1486	0	0	1486	1767	1846	8	1781	1870	1527
Grp Volume(v), veh/h	232	0	229	0	0	7	213	0	489	11	680	351
Grp Sat Flow(s),veh/h/ln	1795	0	1505	0	0	1486	1767	0	1854	1781	1870	1527
Q Serve(g_s), s	8.6	0.0	10.4	0.0	0.0	0.3	4.1	0.0	12.3	0.2	23.2	12.1
Cycle Q Clear(g_c), s	8.6	0.0	10.4	0.0	0.0	0.3	4.1	0.0	12.3	0.2	23.2	12.1
Prop In Lane	1.00		0.99	0.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	330	0	277	0	0	58	376	0	954	474	795	649
V/C Ratio(X)	0.70	0.00	0.83	0.00	0.00	0.12	0.57	0.00	0.51	0.02	0.86	0.54
Avail Cap(c_a), veh/h	330	0	277	0	0	189	379	0	954	636	874	713
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	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	0.0	28.2	0.0	0.0	33.3	13.5	0.0	11.3	10.6	18.4	15.2
Incr Delay (d2), s/veh	6.5	0.0	18.3	0.0	0.0	0.9	1.9	0.0	0.5	0.0	7.8	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	4.0	0.0	5.0	0.0	0.0	0.1	1.4	0.0	4.4	0.1	10.5	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.5	0.0	46.5	0.0	0.0	34.2	15.5	0.0	11.8	10.6	26.2	15.9
LnGrp LOS	C		D			C	B		B	B	C	B
Approach Vol, veh/h	461		7				702			1042		
Approach Delay, s/veh	40.0		34.2				12.9			22.5		
Approach LOS	D		C				B			C		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	6.6	40.3	17.0		12.9	34.0	6.8					
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s	8.0	32.0	12.0		8.0	32.0	8.0					
Max Q Clear Time (g_c+I1), s	2.2	14.3	12.4		6.1	25.2	2.3					
Green Ext Time (p_c), s	0.0	3.9	0.0		0.1	3.8	0.0					
Intersection Summary												
HCM 7th Control Delay, s/veh	23.2											
HCM 7th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												

Intersection												
Intersection Delay, s/veh	7.4											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	1	64	2	4	50	1	7	0	21	3	0	2
Future Vol, veh/h	1	64	2	4	50	1	7	0	21	3	0	2
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	81	3	5	63	1	9	0	27	4	0	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.5	7.4	7	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	1%	7%	60%
Vol Thru, %	0%	96%	91%	0%
Vol Right, %	75%	3%	2%	40%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	67	55	5
LT Vol	7	1	4	3
Through Vol	0	64	50	0
RT Vol	21	2	1	2
Lane Flow Rate	35	85	70	6
Geometry Grp	1	1	1	1
Degree of Util (X)	0.037	0.095	0.078	0.007
Departure Headway (Hd)	3.77	4.012	4.042	4.074
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	938	893	886	868
Service Time	1.839	2.038	2.071	2.147
HCM Lane V/C Ratio	0.037	0.095	0.079	0.007
HCM Control Delay, s/veh	7	7.5	7.4	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.3	0

HCM 7th TWSC

2: Site Access & SW Ibach Street

08/07/2025

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	87	1	2	54	1	7
Future Vol, veh/h	87	1	2	54	1	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	110	1	3	68	1	9

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	111	0	184
Stage 1	-	-	-	-	111
Stage 2	-	-	-	-	73
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1491	-	810
Stage 1	-	-	-	-	919
Stage 2	-	-	-	-	955
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1491	-	808
Mov Cap-2 Maneuver	-	-	-	-	808
Stage 1	-	-	-	-	919
Stage 2	-	-	-	-	953

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.26	8.92
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	928	-	-	64	-
HCM Lane V/C Ratio	0.011	-	-	0.002	-
HCM Control Delay (s/veh)	8.9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	3	0	0	0	0	2	0	22	0	0	10	2
Future Vol, veh/h	3	0	0	0	0	2	0	22	0	0	10	2
Conflicting Peds, #/hr	0	0	0	0	0	0	12	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	60	60	60	60	60	60	60	60	60	60	60
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	5	0	0	0	0	3	0	37	0	0	17	3

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	67	67	30	53	69	37	32	0	0	37	0	0
Stage 1	30	30	-	37	37	-	-	-	-	-	-	-
Stage 2	37	37	-	17	32	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	931	828	1050	950	826	1041	1593	-	-	1587	-	-
Stage 1	992	874	-	984	868	-	-	-	-	-	-	-
Stage 2	984	868	-	1008	872	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	917	818	1038	950	816	1041	1575	-	-	1587	-	-
Mov Cap-2 Maneuver	917	818	-	950	816	-	-	-	-	-	-	-
Stage 1	980	864	-	984	868	-	-	-	-	-	-	-
Stage 2	981	868	-	1008	862	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	8.95		8.47		0		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1575	-	-	917 1041	1587	-	-
HCM Lane V/C Ratio	-	-	-	0.005 0.003	-	-	-
HCM Control Delay (s/veh)	0	-	-	8.9 8.5	0	-	-
HCM Lane LOS	A	-	-	A A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0 0	0	-	-

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↖		↗	↖	
Traffic Vol, veh/h	100	0	2	0	2	15	4	283	1	2	119	59
Future Vol, veh/h	100	0	2	0	2	15	4	283	1	2	119	59
Conflicting Peds, #/hr	1	0	0	0	0	1	21	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	0	0	0	5	5	5	5	5	5
Mvmt Flow	128	0	3	0	3	19	5	363	1	3	153	76
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	592	592	211	532	629	365	249	0	0	365	0	0
Stage 1	217	217	-	375	375	-	-	-	-	-	-	-
Stage 2	375	375	-	158	254	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	421	422	834	461	402	684	1299	-	-	1177	-	-
Stage 1	790	727	-	650	621	-	-	-	-	-	-	-
Stage 2	650	620	-	849	701	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	396	410	817	456	391	683	1273	-	-	1176	-	-
Mov Cap-2 Maneuver	491	486	-	533	473	-	-	-	-	-	-	-
Stage 1	773	711	-	647	618	-	-	-	-	-	-	-
Stage 2	626	617	-	845	685	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s/v	14.8		10.74		0.11		0.09					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	1273	-	-	491	817	649	1176	-	-			
HCM Lane V/C Ratio	0.004	-	-	0.261	0.003	0.034	0.002	-	-			
HCM Control Delay (s/veh)	7.8	-	-	14.9	9.4	10.7	8.1	-	-			
HCM Lane LOS	A	-	-	B	A	B	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	1	0	0.1	0	-	-			

HCM Signalized Intersection Capacity Analysis

5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

08/07/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	3	254	2	2	6	131	413	5	3	437	113
Future Volume (vph)	219	3	254	2	2	6	131	413	5	3	437	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.94			0.96		1.00	0.99		1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.85			0.92		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	1509			1525		1671	1754		1661	1759	1407
Flt Permitted	0.95	1.00			0.98		0.16	1.00		0.35	1.00	1.00
Satd. Flow (perm)	1787	1509			1525		284	1754		619	1759	1407
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	296	4	343	3	3	8	177	558	7	4	591	153
RTOR Reduction (vph)	0	273	0	0	7	0	0	1	0	0	0	91
Lane Group Flow (vph)	296	74	0	0	7	0	177	564	0	4	591	62
Confl. Peds. (#/hr)	20		19	19		20	6		23	23		23
Confl. Bikes (#/hr)			3			1			1			
Heavy Vehicles (%)	1%	1%	1%	10%	10%	10%	8%	8%	8%	8%	8%	8%
Turn Type	Split	NA		Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases							2			6		6
Actuated Green, G (s)	15.3	15.3			4.8		45.0	38.9		32.7	31.6	31.6
Effective Green, g (s)	16.3	16.3			5.8		46.0	39.9		34.7	32.6	32.6
Actuated g/C Ratio	0.20	0.20			0.07		0.57	0.50		0.43	0.41	0.41
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	363	307			110		325	873		295	715	572
v/s Ratio Prot	c0.17	0.05			c0.00		c0.06	0.32		0.00	c0.34	
v/s Ratio Perm							0.25			0.01		0.04
v/c Ratio	0.81	0.24			0.05		0.54	0.64		0.01	0.82	0.10
Uniform Delay, d1	30.4	26.7			34.6		12.4	14.8		13.2	21.2	14.7
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	13.1	0.4			0.2		1.8	1.6		0.0	7.7	0.0
Delay (s)	43.6	27.1			34.8		14.3	16.5		13.2	28.9	14.8
Level of Service	D	C			C		B	B		B	C	B
Approach Delay (s/veh)		34.7			34.8			16.0			26.0	
Approach LOS		C			C			B			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			25.2				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			80.1				Sum of lost time (s)			17.0		
Intersection Capacity Utilization			59.1%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

08/07/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	219	3	254	2	2	6	131	413	5	3	437	113
Future Volume (veh/h)	219	3	254	2	2	6	131	413	5	3	437	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.89	1.00		0.96	0.99		0.97
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	1885	1885	1885	1752	1752	1752	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	296	4	343	3	3	8	177	558	7	4	591	153
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	1	1	1	10	10	10	8	8	8	8	8	8
Cap, veh/h	377	4	308	18	18	47	365	853	11	337	688	566
Arrive On Green	0.21	0.21	0.20	0.04	0.06	0.04	0.12	0.49	0.47	0.02	0.39	0.39
Sat Flow, veh/h	1795	17	1464	314	314	836	1697	1754	22	1697	1781	1465
Grp Volume(v), veh/h	296	0	347	14	0	0	177	0	565	4	591	153
Grp Sat Flow(s),veh/h/ln	1795	0	1481	1463	0	0	1697	0	1776	1697	1781	1465
Q Serve(g_s), s	11.1	0.0	15.0	0.7	0.0	0.0	3.8	0.0	17.1	0.1	21.7	5.1
Cycle Q Clear(g_c), s	11.1	0.0	15.0	0.7	0.0	0.0	3.8	0.0	17.1	0.1	21.7	5.1
Prop In Lane	1.00		0.99	0.21		0.57	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	377	0	311	83	0	0	365	0	864	337	688	566
V/C Ratio(X)	0.78	0.00	1.12	0.17	0.00	0.00	0.49	0.00	0.65	0.01	0.86	0.27
Avail Cap(c_a), veh/h	377	0	311	184	0	0	370	0	864	512	774	636
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	1.00	1.00
Uniform Delay (d), s/veh	26.7	0.0	28.7	32.4	0.0	0.0	13.8	0.0	13.8	13.2	20.1	15.0
Incr Delay (d2), s/veh	10.4	0.0	85.7	0.9	0.0	0.0	1.0	0.0	1.8	0.0	8.8	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	12.4	0.3	0.0	0.0	1.3	0.0	6.3	0.0	9.7	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.1	0.0	114.4	33.4	0.0	0.0	14.8	0.0	15.6	13.2	28.9	15.3
LnGrp LOS	D		F	C			B		B	B	C	B
Approach Vol, veh/h	643		14				742		748			
Approach Delay, s/veh	78.8		33.4				15.4		26.0			
Approach LOS	E		C				B		C			
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.6	38.7	19.0		12.8	31.6	8.0					
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s	8.0	30.0	14.0		8.0	30.0	8.0					
Max Q Clear Time (g_c+I1), s	2.1	19.1	17.0		5.8	23.7	2.7					
Green Ext Time (p_c), s	0.0	3.6	0.0		0.1	2.8	0.0					
Intersection Summary												
HCM 7th Control Delay, s/veh	38.2											
HCM 7th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	93	21	21	39	3	6	1	15	6	0	3
Future Vol, veh/h	8	93	21	21	39	3	6	1	15	6	0	3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	9	102	23	23	43	3	7	1	16	7	0	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.6	7.5	7.1	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	27%	7%	33%	67%
Vol Thru, %	5%	76%	62%	0%
Vol Right, %	68%	17%	5%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	22	122	63	9
LT Vol	6	8	21	6
Through Vol	1	93	39	0
RT Vol	15	21	3	3
Lane Flow Rate	24	134	69	10
Geometry Grp	1	1	1	1
Degree of Util (X)	0.026	0.146	0.079	0.012
Departure Headway (Hd)	3.902	3.921	4.097	4.202
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	903	913	872	839
Service Time	1.988	1.951	2.136	2.291
HCM Lane V/C Ratio	0.027	0.147	0.079	0.012
HCM Control Delay, s/veh	7.1	7.6	7.5	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.5	0.3	0

HCM 7th TWSC

2: Site Access & SW Ibach Street

08/07/2025

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	112	1	6	62	1	5
Future Vol, veh/h	112	1	6	62	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	123	1	7	68	1	5

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	124	0	205	124
Stage 1	-	-	-	-	124	-
Stage 2	-	-	-	-	81	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1475	-	788	933
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	947	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1475	-	784	933
Mov Cap-2 Maneuver	-	-	-	-	784	-
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	943	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.66	9.01
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	904	-	-	159	-
HCM Lane V/C Ratio	0.007	-	-	0.004	-
HCM Control Delay (s/veh)	9	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	0	0	0	0	1	0	16	0	2	31	7
Future Vol, veh/h	5	0	0	0	0	1	0	16	0	2	31	7
Conflicting Peds, #/hr	0	0	0	0	0	0	3	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	0	0	0	0	1	0	23	0	3	44	10

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	80	80	52	72	85	23	57	0	0	23	0	0
Stage 1	57	57	-	23	23	-	-	-	-	-	-	-
Stage 2	23	23	-	49	62	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	913	814	1022	924	809	1060	1561	-	-	1606	-	-
Stage 1	960	851	-	1001	880	-	-	-	-	-	-	-
Stage 2	1001	880	-	969	847	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	908	811	1019	923	806	1060	1557	-	-	1606	-	-
Mov Cap-2 Maneuver	908	811	-	923	806	-	-	-	-	-	-	-
Stage 1	955	847	-	1001	880	-	-	-	-	-	-	-
Stage 2	1000	880	-	967	843	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	9		8.4		0		0.36	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1557	-	-	908 1060	87	-	-
HCM Lane V/C Ratio	-	-	-	0.008 0.001 0.002	-	-	-
HCM Control Delay (s/veh)	0	-	-	9 8.4 7.2	0	-	-
HCM Lane LOS	A	-	-	A A A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0 0 0	-	-	-

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰		↰	↱		↰	↱	
Traffic Vol, veh/h	110	1	15	2	0	6	7	326	1	12	341	55
Future Vol, veh/h	110	1	15	2	0	6	7	326	1	12	341	55
Conflicting Peds, #/hr	0	0	0	0	0	0	11	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	1	1	1	0	0	0	2	2	2	4	4	4
Mvmt Flow	128	1	17	2	0	7	8	379	1	14	397	64

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	863	864	439	821	895	380	471	0	0	380	0	0
Stage 1	467	467	-	396	396	-	-	-	-	-	-	-
Stage 2	395	397	-	425	499	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.1	6.5	6.2	4.12	-	-	4.14	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.5	4	3.3	2.218	-	-	2.236	-	-
Pot Cap-1 Maneuver	276	293	620	296	282	672	1090	-	-	1167	-	-
Stage 1	578	563	-	634	608	-	-	-	-	-	-	-
Stage 2	632	605	-	611	547	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	265	284	613	281	274	672	1079	-	-	1167	-	-
Mov Cap-2 Maneuver	388	389	-	402	380	-	-	-	-	-	-	-
Stage 1	565	551	-	629	603	-	-	-	-	-	-	-
Stage 2	621	601	-	585	535	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v17.92		11.36	0.18	0.24
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1079	-	-	388	613	576	1167	-	-
HCM Lane V/C Ratio	0.008	-	-	0.333	0.028	0.016	0.012	-	-
HCM Control Delay (s/veh)	8.4	-	-	18.8	11	11.4	8.1	-	-
HCM Lane LOS	A	-	-	C	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.4	0.1	0	0	-	-

HCM Signalized Intersection Capacity Analysis

5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

08/07/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	3	210	0	0	6	198	448	2	10	626	326
Future Volume (vph)	215	3	210	0	0	6	198	448	2	10	626	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.96			0.94		1.00	0.99		1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.85			0.86		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	1547			1548		1752	1843		1760	1863	1516
Flt Permitted	0.95	1.00			1.00		0.12	1.00		0.45	1.00	1.00
Satd. Flow (perm)	1787	1547			1548		235	1843		837	1863	1516
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	234	3	228	0	0	7	215	487	2	11	680	354
RTOR Reduction (vph)	0	186	0	0	7	0	0	0	0	0	0	156
Lane Group Flow (vph)	234	45	0	0	0	0	215	489	0	11	680	198
Confl. Peds. (#/hr)	11		4	4		11	6		12	12		12
Confl. Bikes (#/hr)			4			3			5			3
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	3%	3%	3%	2%	2%	2%
Turn Type	Split	NA			NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	13.4	13.4			3.2		47.3	41.2		35.0	33.9	33.9
Effective Green, g (s)	14.4	14.4			4.2		48.3	42.2		37.0	34.9	34.9
Actuated g/C Ratio	0.18	0.18			0.05		0.61	0.53		0.47	0.44	0.44
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	326	282			82		324	985		417	824	670
v/s Ratio Prot	c0.13	0.03			c0.00		c0.08	0.27		0.00	c0.37	
v/s Ratio Perm							0.33			0.01		0.13
v/c Ratio	0.71	0.15			0.00		0.66	0.49		0.02	0.82	0.29
Uniform Delay, d1	30.3	27.1			35.3		13.1	11.6		11.2	19.3	14.1
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.3	0.2			0.0		5.0	0.3		0.0	6.7	0.2
Delay (s)	37.6	27.4			35.3		18.1	12.0		11.2	26.0	14.3
Level of Service	D	C			D		B	B		B	C	B
Approach Delay (s/veh)		32.5			35.3			13.8			21.9	
Approach LOS		C			D			B			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			21.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			78.9				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			72.5%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

08/07/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	3	210	0	0	6	198	448	2	10	626	326
Future Volume (veh/h)	215	3	210	0	0	6	198	448	2	10	626	326
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.92	1.00		0.96	1.00		0.96
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	1885	1885	1885	1900	1900	1900	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	234	3	228	0	0	7	215	487	2	11	680	354
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	0	0	0	3	3	3	2	2	2
Cap, veh/h	330	4	273	0	0	58	376	950	4	474	795	649
Arrive On Green	0.18	0.18	0.17	0.00	0.00	0.02	0.13	0.51	0.50	0.04	0.42	0.42
Sat Flow, veh/h	1795	20	1486	0	0	1486	1767	1846	8	1781	1870	1527
Grp Volume(v), veh/h	234	0	231	0	0	7	215	0	489	11	680	354
Grp Sat Flow(s),veh/h/ln	1795	0	1505	0	0	1486	1767	0	1854	1781	1870	1527
Q Serve(g_s), s	8.6	0.0	10.5	0.0	0.0	0.3	4.1	0.0	12.3	0.2	23.2	12.3
Cycle Q Clear(g_c), s	8.6	0.0	10.5	0.0	0.0	0.3	4.1	0.0	12.3	0.2	23.2	12.3
Prop In Lane	1.00		0.99	0.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	330	0	277	0	0	58	376	0	954	474	795	649
V/C Ratio(X)	0.71	0.00	0.83	0.00	0.00	0.12	0.57	0.00	0.51	0.02	0.86	0.55
Avail Cap(c_a), veh/h	330	0	277	0	0	189	379	0	954	636	873	713
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	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	0.0	28.3	0.0	0.0	33.3	13.6	0.0	11.3	10.6	18.4	15.2
Incr Delay (d2), s/veh	6.8	0.0	19.2	0.0	0.0	0.9	2.0	0.0	0.5	0.0	7.8	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	4.1	0.0	5.1	0.0	0.0	0.1	1.5	0.0	4.4	0.1	10.5	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.9	0.0	47.5	0.0	0.0	34.2	15.6	0.0	11.8	10.6	26.2	15.9
LnGrp LOS	C		D			C	B		B	B	C	B
Approach Vol, veh/h	465		7				704		1045			
Approach Delay, s/veh	40.7		34.2				12.9		22.5			
Approach LOS	D		C				B		C			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	40.4		17.0	12.9	34.0		6.8				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	8.0	32.0		12.0	8.0	32.0		8.0				
Max Q Clear Time (g_c+I1), s	2.2	14.3		12.5	6.1	25.2		2.3				
Green Ext Time (p_c), s	0.0	3.9		0.0	0.1	3.8		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh	23.3											
HCM 7th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												

Intersection: 1: SW 103rd Avenue/SW 103rd Court & SW Ibach Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	41	39	41	31
Average Queue (ft)	28	26	18	4
95th Queue (ft)	45	46	44	21
Link Distance (ft)	927	173	132	329
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: SW 103rd Avenue & SW Gardner Court

Movement	EB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	3
95th Queue (ft)	19
Link Distance (ft)	166
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: SW Grahams Ferry Road & SW Ibach Street

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	66	28	40	16	24	21	26
Average Queue (ft)	30	2	14	1	1	1	1
95th Queue (ft)	51	13	40	8	11	7	12
Link Distance (ft)		1141	235		353		578
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100			100		50	
Storage Blk Time (%)							0
Queuing Penalty (veh)							0

Intersection: 5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

Movement	EB	EB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	LTR	L	TR	L	T	R
Maximum Queue (ft)	202	174	44	146	231	54	328	175
Average Queue (ft)	95	62	6	56	105	1	133	40
95th Queue (ft)	167	131	27	108	198	10	243	126
Link Distance (ft)		578	632		1086		996	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	200			200		150		150
Storage Blk Time (%)	0	0			1		6	0
Queuing Penalty (veh)	1	0			1		7	0

Network Summary

Network wide Queuing Penalty: 10

Intersection: 1: SW 103rd Avenue/SW 103rd Court & SW Ibach Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	55	45	31	31
Average Queue (ft)	34	28	14	9
95th Queue (ft)	50	45	39	32
Link Distance (ft)	927	173	132	329
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: SW 103rd Avenue & SW Gardner Court

Movement	EB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	5
95th Queue (ft)	24
Link Distance (ft)	166
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: SW Grahams Ferry Road & SW Ibach Street

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	92	30	35	27	24	32	20
Average Queue (ft)	38	9	6	3	2	3	1
95th Queue (ft)	73	30	26	15	16	19	9
Link Distance (ft)		1141	235		353		578
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100			100		50	
Storage Blk Time (%)	0					0	0
Queuing Penalty (veh)	0					0	0

Intersection: 5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

Movement	EB	EB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	LTR	L	TR	L	T	R
Maximum Queue (ft)	197	135	29	200	259	55	379	175
Average Queue (ft)	103	62	3	86	105	6	185	86
95th Queue (ft)	170	113	16	163	194	35	332	196
Link Distance (ft)		578	632		1086		996	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	200			200		150		150
Storage Blk Time (%)	0			1	0		10	0
Queuing Penalty (veh)	1			5	1		31	1

Network Summary

Network wide Queuing Penalty: 38

Intersection: 1: SW 103rd Avenue/SW 103rd Court & SW Ibach Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	50	36	36	35
Average Queue (ft)	29	26	18	6
95th Queue (ft)	45	45	43	25
Link Distance (ft)	927	173	132	329
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: SW 103rd Avenue & SW Gardner Court

Movement	EB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	2
95th Queue (ft)	16
Link Distance (ft)	166
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: SW Grahams Ferry Road & SW Ibach Street

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	68	26	31	5	51	11	34
Average Queue (ft)	32	1	13	0	3	0	3
95th Queue (ft)	54	12	37	0	22	6	18
Link Distance (ft)		1141	235		353		578
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100			100		50	
Storage Blk Time (%)	0						0
Queuing Penalty (veh)	0						0

Intersection: 5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

Movement	EB	EB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	LTR	L	TR	L	T	R
Maximum Queue (ft)	224	336	50	217	418	50	603	175
Average Queue (ft)	113	95	10	70	149	2	199	54
95th Queue (ft)	208	244	36	150	307	28	487	163
Link Distance (ft)		578	632		1086		996	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	200			200		150		150
Storage Blk Time (%)	6	0		0	4		14	0
Queuing Penalty (veh)	18	1		3	6		19	0

Network Summary

Network wide Queuing Penalty: 47

Intersection: 1: SW 103rd Avenue/SW 103rd Court & SW Ibach Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	59	45	36	31
Average Queue (ft)	34	27	17	9
95th Queue (ft)	49	45	42	32
Link Distance (ft)	927	173	132	329
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: SW 103rd Avenue & SW Gardner Court

Movement	EB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	4
95th Queue (ft)	21
Link Distance (ft)	166
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: SW Grahams Ferry Road & SW Ibach Street

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	L	TR
Maximum Queue (ft)	77	34	35	26	28	8
Average Queue (ft)	39	11	7	2	4	0
95th Queue (ft)	65	33	29	16	19	4
Link Distance (ft)		1141	235			578
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	100			100	50	
Storage Blk Time (%)	0					
Queuing Penalty (veh)	0					

Intersection: 5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

Movement	EB	EB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	LTR	L	TR	L	T	R
Maximum Queue (ft)	222	322	29	185	267	148	872	175
Average Queue (ft)	115	78	4	87	102	13	341	125
95th Queue (ft)	192	208	20	147	198	75	732	229
Link Distance (ft)		578	632		1086		996	
Upstream Blk Time (%)							1	
Queuing Penalty (veh)							0	
Storage Bay Dist (ft)	200			200		150		150
Storage Blk Time (%)	4				1		21	0
Queuing Penalty (veh)	9				1		71	2

Network Summary

Network wide Queuing Penalty: 84

Intersection: 1: SW 103rd Avenue/SW 103rd Court & SW Ibach Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	54	40	41	31
Average Queue (ft)	28	26	18	6
95th Queue (ft)	49	45	44	26
Link Distance (ft)	927	168	137	329
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Site Access & SW Ibach Street

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	6	30
Average Queue (ft)	0	7
95th Queue (ft)	4	28
Link Distance (ft)	1147	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SW 103rd Avenue & SW Gardner Court/Site Access

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	31	24
Average Queue (ft)	3	1
95th Queue (ft)	18	12
Link Distance (ft)	167	172
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: SW Grahams Ferry Road & SW Ibach Street

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	66	28	38	17	5	6	22
Average Queue (ft)	34	3	13	1	0	0	1
95th Queue (ft)	58	16	38	11	5	6	9
Link Distance (ft)		1147	235		353		578
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100			100		50	
Storage Blk Time (%)	0						0
Queuing Penalty (veh)	0						0

Intersection: 5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

Movement	EB	EB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	LTR	L	TR	L	T	R
Maximum Queue (ft)	220	340	46	199	358	88	743	175
Average Queue (ft)	110	88	9	76	155	5	251	64
95th Queue (ft)	201	243	32	162	294	47	583	179
Link Distance (ft)		578	632		1086		996	
Upstream Blk Time (%)		0					0	
Queuing Penalty (veh)		0					0	
Storage Bay Dist (ft)	200			200		150		150
Storage Blk Time (%)	4	1		0	4		20	0
Queuing Penalty (veh)	13	3		0	6		26	0

Network Summary

Network wide Queuing Penalty: 50

Intersection: 1: SW 103rd Avenue/SW 103rd Court & SW Ibach Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	55	45	41	36
Average Queue (ft)	33	27	18	8
95th Queue (ft)	47	47	44	30
Link Distance (ft)	927	168	137	329
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Site Access & SW Ibach Street

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	6	31
Average Queue (ft)	0	7
95th Queue (ft)	0	28
Link Distance (ft)	1147	132
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SW 103rd Avenue & SW Gardner Court/Site Access

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	31	6
Average Queue (ft)	5	0
95th Queue (ft)	23	4
Link Distance (ft)	167	172
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: SW Grahams Ferry Road & SW Ibach Street

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	L	TR
Maximum Queue (ft)	100	30	31	16	22	14
Average Queue (ft)	39	12	7	2	3	0
95th Queue (ft)	73	34	28	15	17	10
Link Distance (ft)		1147	235			578
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	100			100	50	
Storage Blk Time (%)	0					0
Queuing Penalty (veh)	0					0

Intersection: 5: SW Boones Ferry Road & SW Ibach Street/SW Ibach Court

Movement	EB	EB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	LTR	L	TR	L	T	R
Maximum Queue (ft)	217	321	29	211	328	144	705	175
Average Queue (ft)	123	90	4	92	116	10	302	120
95th Queue (ft)	221	237	21	174	249	59	637	224
Link Distance (ft)		578	632		1086		996	
Upstream Blk Time (%)							0	
Queuing Penalty (veh)							0	
Storage Bay Dist (ft)	200			200		150		150
Storage Blk Time (%)	8	0		1	2		19	0
Queuing Penalty (veh)	17	0		3	3		65	2

Network Summary

Network wide Queuing Penalty: 92