EXHIBIT K

CASCADE CREEK

Sandy, OR

TRAFFIC IMPACT ANALYSIS (TIA)

May 22, 2023

HEATH & ASSOCIATES

Transportation Planning & Engineering

CASCADE CREEK
TRAFFIC IMPACT ANALYSIS

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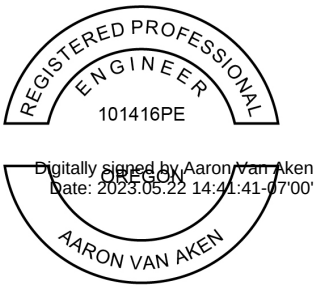

CASCADE CREEK
TRAFFIC IMPACT ANALYSIS

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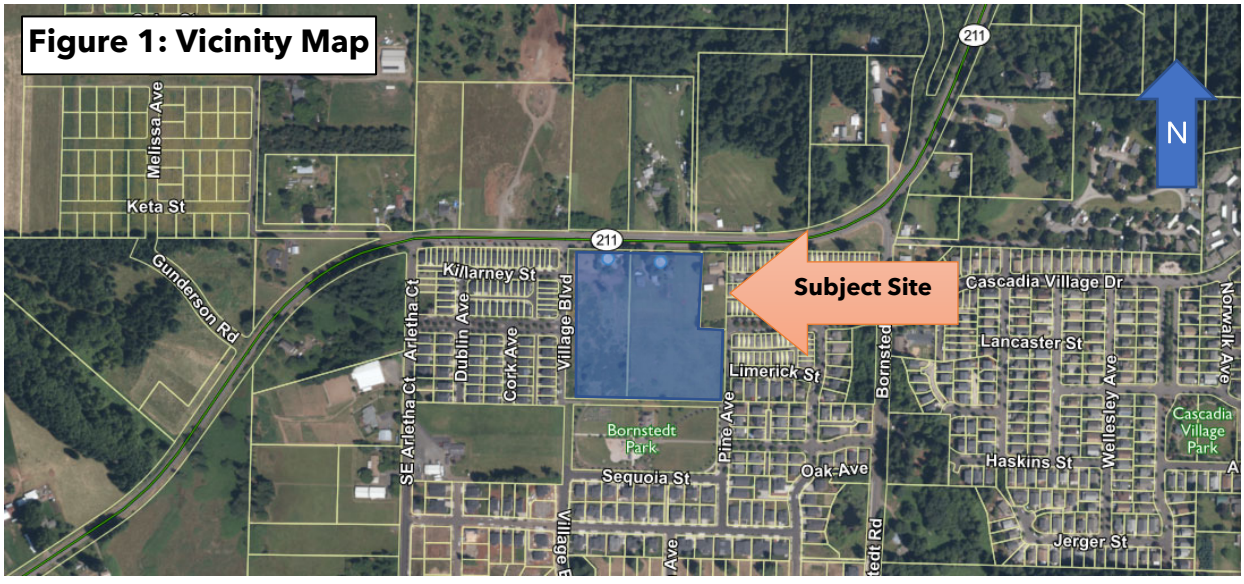
CASCADE CREEK
TRAFFIC IMPACT ANALYSIS

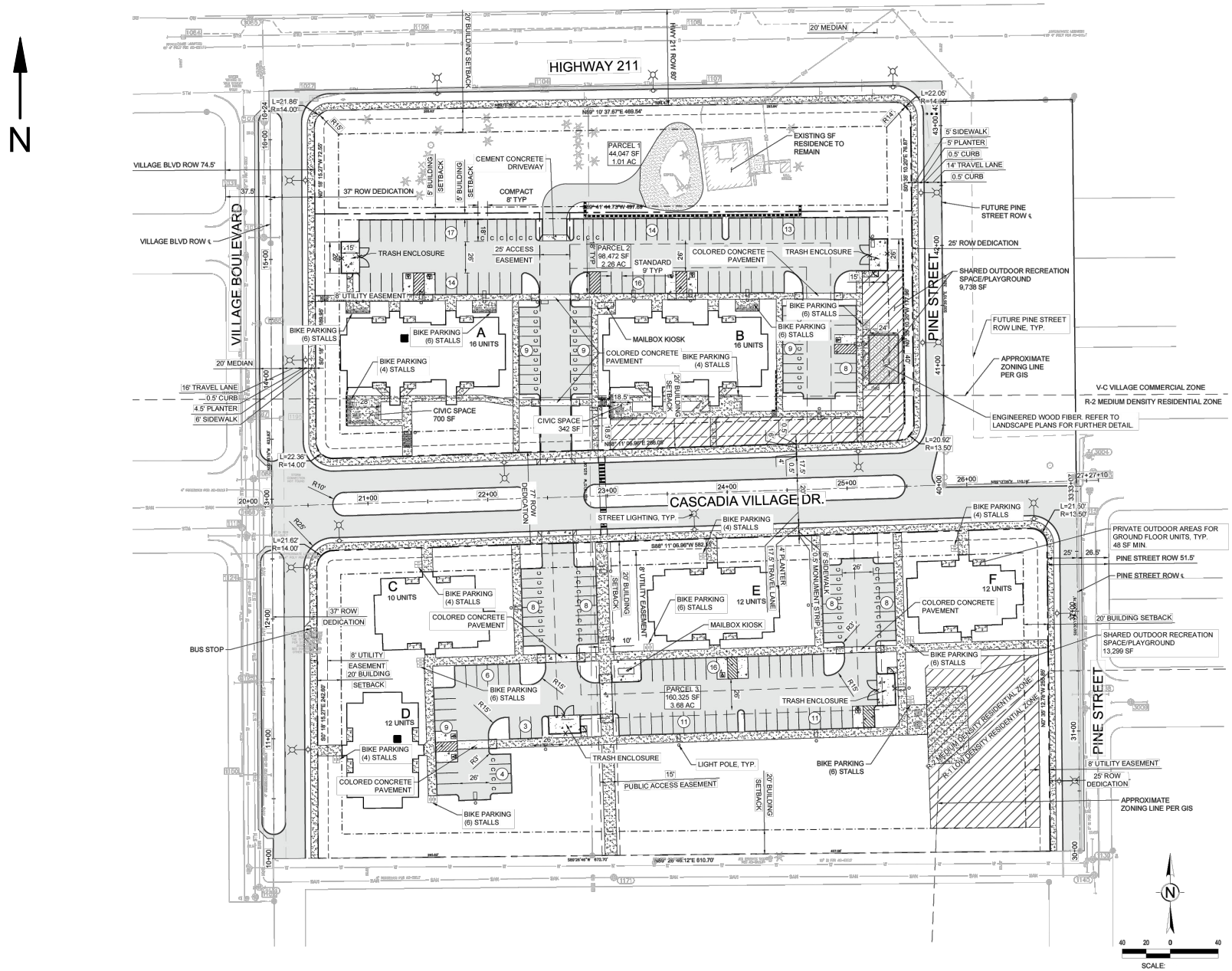
1. INTRODUCTION

Heath & Associates has been retained to prepare a Traffic Impact Analysis (TIA) for the proposed Cascade Creek Development in Sandy, Oregon. It was determined, after review of our 8/10/2022 Traffic Analysis Letter that further evaluation was required. The scope herein reflects requirements provided by the City and City's Transportation Engineer reviewer.

2. PROJECT DESCRIPTION

Cascade Creek proposes for the construction of a residential development consisting of 78 multi-family, low-income dwelling units and 11,142 square feet of commercial/office space in the city of Sandy. The subject site, with an address of 38272/38330 Highway 211, is situated on a cumulative 8.84-acres within tax parcel #'s: 00677-173 & -164. The subject site is bordered to the west by SE Village Boulevard and to the north by Highway 211. Two existing single-family structures exist in the northern portion of the subject site. Only the western unit will be demolished while the other is to remain. All existing on-site structures located within the development footprint are to be demolished prior to new construction. Primary access to the site is to be provided via SE Village Boulevard at Cascadia Village Drive and via Pine Street (a newly constructed roadway connection). Figure 1 below provides an aerial depiction of the surrounding roadway system. A conceptual site plan is presented in Figure 2.





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SITE PLAN
FIGURE 2

3. EXISTING CONDITIONS

3.1 Existing Street System

Highway 211 (Eagle Creek-Sandy Hwy 172): is a two-lane, east-west minor arterial located north of the subject property. Left-turn lanes are provided at major intersections—including SE Village Boulevard. The posted speed limit is 40-mph south of Highway 26 and increases to 45-mph south of Dubarko Road. No pedestrian infrastructure is available.

SE Village Boulevard: is a two-lane, north-south local roadway bordering the subject site to the west. The roadway is partially built out spanning approximately 680-feet south of Highway 211. Curb, gutter, planter strip and sidewalk are available along the western side of the roadway. As part of site development, Cascade Creek would improve the eastern side of the roadway up to city standards.

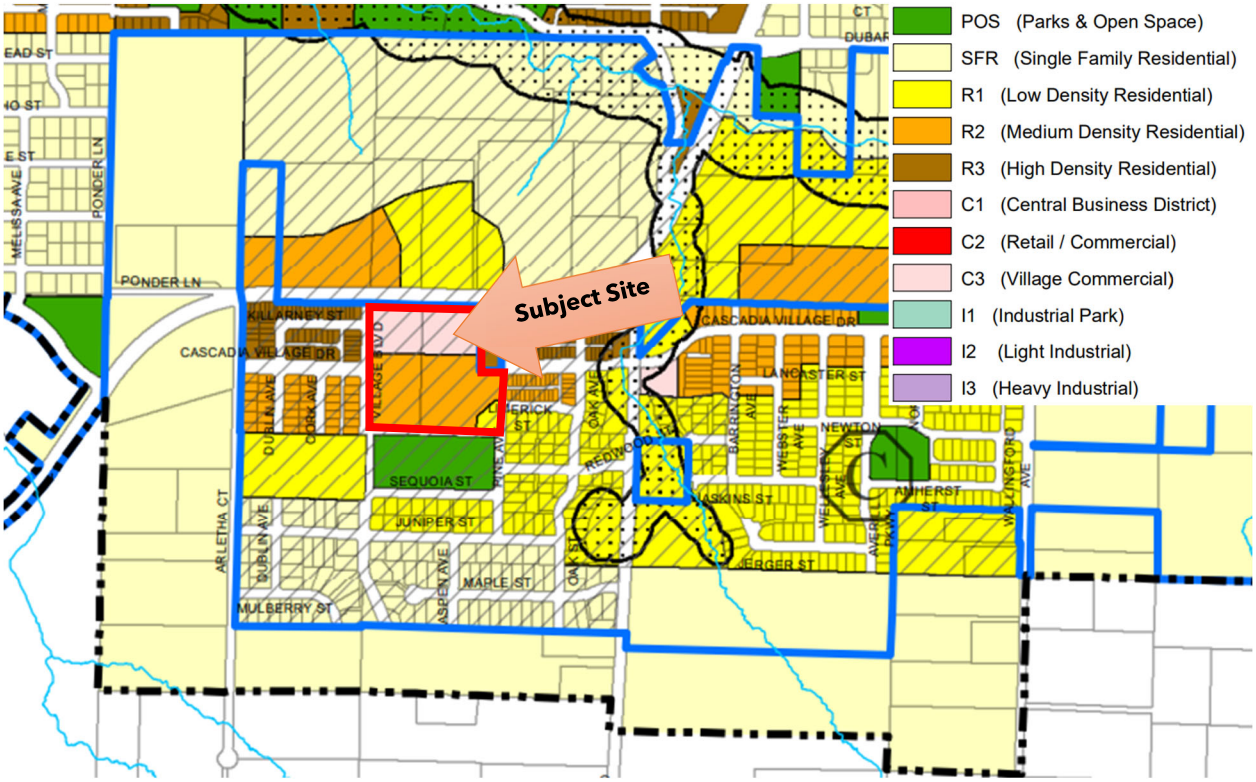
3.2 Transit Service

A review of the city of Sandy transit service indicates transit is provided in the vicinity of the proposed project. Route Sandy Estacada is provided at the nearby intersection of Highway 211 & SE Village Boulevard just northwest of the subject property. Service is provided from the Estacada City Hall to the Sandy Transit Center between 7:00 AM to 7:27 PM with approximately two-hour headways on weekdays and Saturdays. No Sunday service is provided.

Route SAM Shopper is also located under one mile from the proposed development located at the Cascadia Village Park approximately 2,000 feet east of the development. Route SAM Shopper provides service from Fred Myers to the Sandy Market Place. The transit route provides two shuttle buses (Shuttle A and B) which provide service Monday-Friday. Weekday service for Shuttle A is provided from 12:00 PM to 6:44 PM with approximately one-hour headways (except for 5:25 PM shuttle). Weekday service for Shuttle B is provided from 12:25 PM to 7:18 PM with approximately one-hour headways (except for the 5:50 PM shuttle). Refer to the Sandy Transit website for more detailed information. It is important to note that given the low-income restriction of the project, transit use could be expected.

3.3 Zoning

The subject property is located within the City's C3 (Village Commercial), R2 (Medium Density Residential) and R1 (Low Density) zoning as portrayed in the exhibit below.



Moreover, the site location is situated within the "Village" designation per the City's Comprehensive Plan Map.

3.4 Existing Peak Hour Volumes

Field data for this study was collected in May of 2023 at four study intersections directed by the City. See list below for reference.

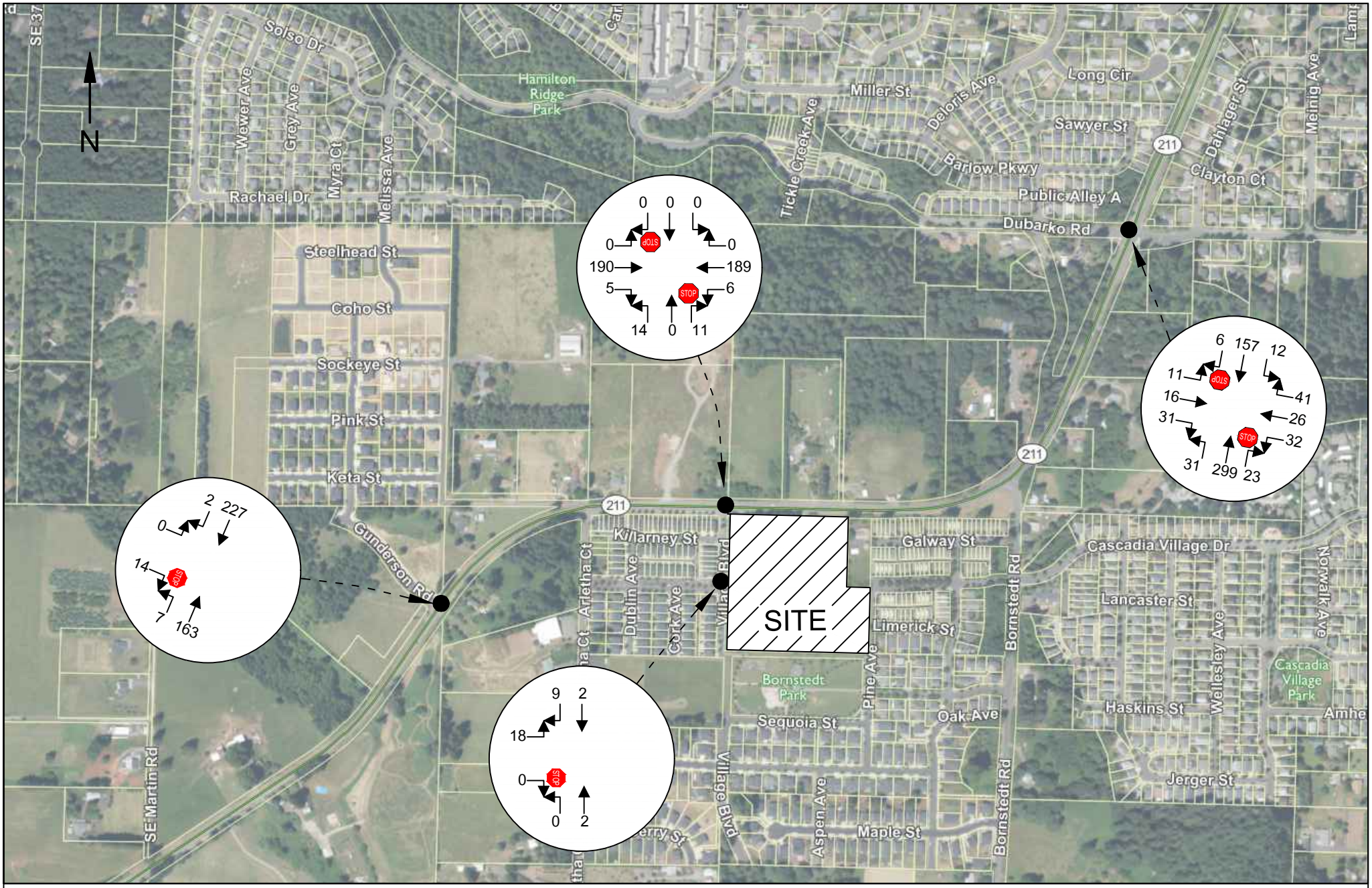
- Highway 211 & Gunderson Road
  - AM Peak Hour: 7:10-8:10
  - PM Peak Hour: 4:40-5:40

- Highway 211 & SE Village Boulevard
  - AM Peak Hour: 7:40-8:40
  - PM Peak Hour: 4:40-5:40

- SE Village Boulevard & Cascadia Village Drive
  - AM Peak Hour: 7:55-8:55
  - PM Peak Hour: 4:35-4:45

- Highway 211 & Dubarko Road
  - AM Peak Hour: 7:55-8:55
  - PM Peak Hour: 4:40-5:40

The traffic counts were administered by Quality Counts, a data collection firm, between 7:00-9:00 AM and 4:00-6:00 PM. The one hour exhibiting highest overall vehicular activity (peak hour displayed above) for each time period is then used for capacity and delay analysis. Respective AM and PM peak hour volumes are illustrated in Figures 3 and 4. Full-count sheets are provided in the appendix.



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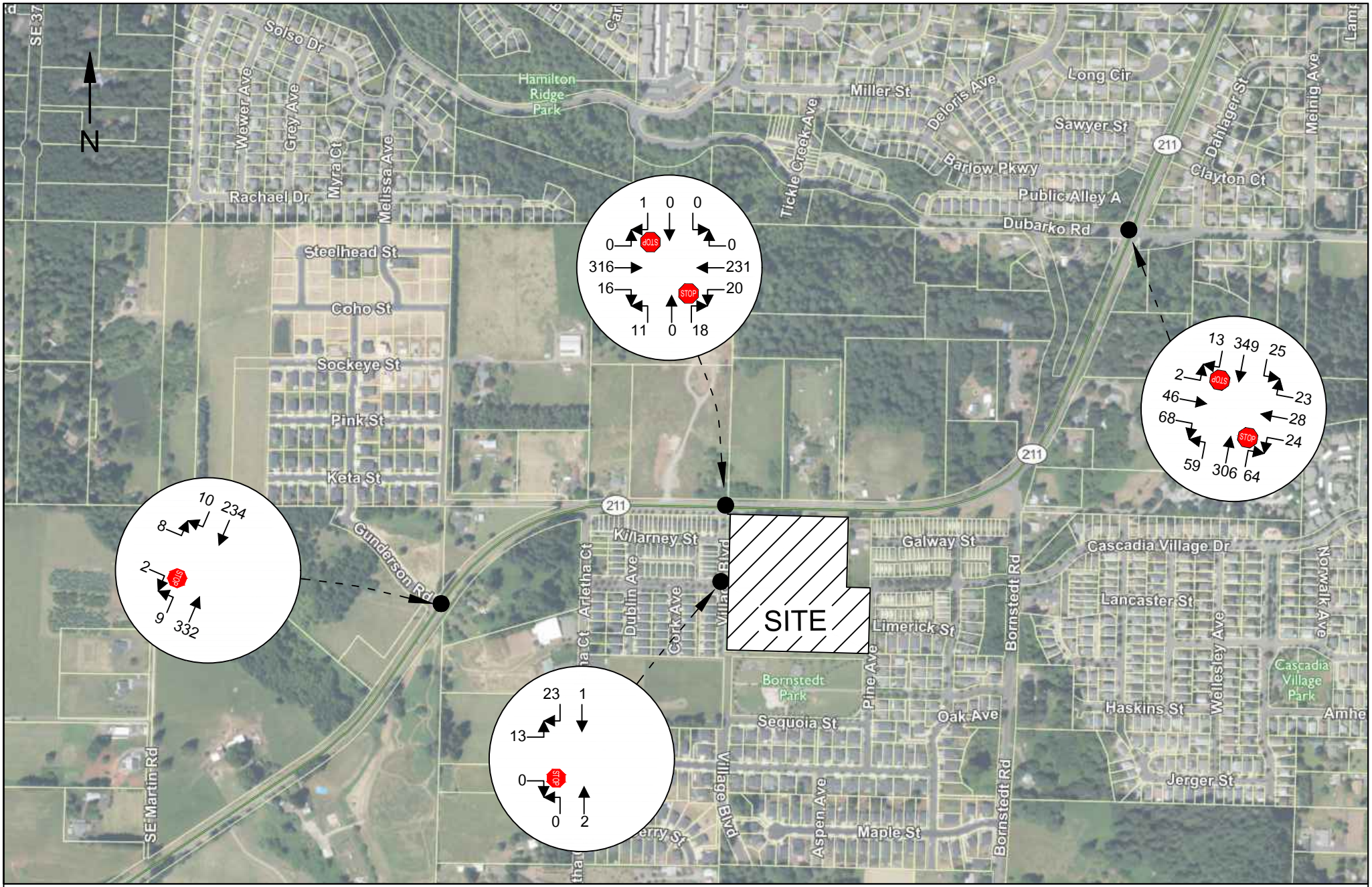
EXISTING AM PEAK HOUR VOLUMES
FIGURE 3



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EXISTING PM PEAK HOUR VOLUMES
FIGURE 4

3.5 Existing Level of Service

Existing AM and PM peak hour delays were determined through the use of the *Highway Capacity Manual* 6th Edition. Capacity analysis is used to determine Level of Service (LOS) which is an established measure of congestion for transportation facilities. The range[1] for intersection level of service is LOS A to LOS F with the former indicating the best operating conditions with low control delays and the latter indicating the worst conditions with heavy control delays. Level of service calculations were made through the use of the *Synchro 11* analysis program. For side-street stop-controlled intersections, LOS is determined by the movement with the highest delay. Table 1 below summarizes LOS delay for the four study intersections.

Table 1: Existing 2023 Peak Hour Level of Service

Delays Given in Seconds per Vehicle

Intersection	Control	Peak Hour	Crit. Mvmt.	LOS	Delay	v/c
Hwy 211 & Gunderson Road	Stop	AM	SEB*	A	9.8	0.02
		PM		B	12.7	0.02
Hwy 211 & SE Village Blvd	Stop	AM	NB	B	11.0	0.04
		PM		B	12.2	0.06
Cascadia Village Dr & SE Village Blvd	Stop	AM	EB	A	8.7	0.03
		PM		A	8.8	0.02
Hwy 211 & Dubarko Road	Stop	AM	WB-TL*	C	17.2	0.18
		PM		D	31.2	0.29

*SEB – Southeast Bound; WB-TL – Westbound Through-Left

City of Sandy Level of Service Standards: Sandy has adopted an LOS standard of D or better for all city intersections[2].

Existing AM and PM peak hour delays are shown to operate with LOS D conditions or better for all study intersections. All study intersections are shown to have sufficient capacity given the reported volume to capacity (v/c) ratios. No level of service deficiencies are identified with existing conditions.

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[1] *Signalized Intersections - Level of Service*

Level of Service	Control Delay per Vehicle (sec)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

Stop Controlled Intersections – Level of Service

Level of Service	Control Delay per Vehicle (sec)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

Highway Capacity Manual, 6th Edition

[2] 2011 City of Sandy Transportation System Plan

3.6 Roadway Improvement

A review of the City of Sandy's/Oregon State's Transportation Improvements were reviewed to determine if any projects are planned in the vicinity of the Cascade Creek development. Table 2 below highlights each improvement project in the vicinity of the subject site.

Table 2: Transportation Improvement Projects

Name	Location	Improvement	Cost (2009 $)
Bornstedt Road (ID: P4)	Cascadia Village Dr to UGB	Infill sidewalk gaps.	$1,420,000
Dubarko Road (ID: P5)	E/O Melissa Ave to E/O OR 211	Infill sidewalk gaps.	$3,240,000
Jacoby Road (ID: P8)	Dubarko Road to Cascadia Village Dr	Infill sidewalk gaps.	$40,000
OR 211 (ID: P23)	OR 211 Parkway Path	Construct new bike/ped accessway.	$325,000
OR 211 (ID: P24/B11)	South UGB to US 26	Construct sidewalks and widen shoulder to 6 feet.	$28,200,000
Bornstedt Road (ID: B3)	OR 211 to UGB	Re-stripe/widen road.	$32,000
Various Roads (ID: M21)	N/A	Gunderson Road, 370th Ave, Cascadia Village Dr., Cascadia Village Blvd, new collector.	$20,000,000
OR 211 at Dubarko Rd (ID: M9)	OR 211 & Dubarko Rd	Construction northbound right turn lane, southbound left turn lane, northbound left turn lane, and install a traffic signal.	$10,150,000

Multiple planned improvements in the vicinity of the project would further improve non-motorist mobility in the area along with the implementation of a signal at one study intersection along Highway 211 (at Dubarko Road).

3.7 Collision History

A list of the recorded collision history from the beginning of 2017 through 2021 (latest data available) for all study locations was obtained through the Oregon Department of Transportation's (ODOT) *TDS Crash Reports* system. A summary of the collisions per year at the study intersections are listed in Table 3.

Table 3: Collision History

Intersection/Corridor	2017	2018	2019	2020	2021	Avg/Yr
Hwy 211 & Dubarko	6	3	7	4	3	4.6

The only intersection with reported crash history was Highway 211 (Eagle Creek Sandy-Highway) & Dubarko Road with a total of 23 incidents yielding an average of 4.6 collisions per year. Out of the 23 reported collisions, no fatalities occurred; 6 were property damage only, and a total of 31 people were injured. A summary of the collision type listed from highest to lowest frequency is shown in the table below.

Table 4: Collision History

Intersection/Corridor	Angle	Turning Mvmt	Rear-End	Pedest-rian	Fixed Object
Hwy 211 & Dubarko	16	3	2	1	1

The predominate collision type was in the form of "angle" accounting for ~70 percent of total occurrences. One collision involved a pedestrian which was non-fatal and occurred in 2018.

The only other collision within the study area (Gunderson Road, SE Village Boulevard, Cascadia Village) occurred along Highway 211 at milepost 4.6 in 2018 which is around the intersection of Gunderson Road. However, Gunderson Road was not constructed until 2021. No other incidents were identified.

4. FORECAST TRAFFIC DEMAND & ANALYSIS

4.1 Project Trip Generation

Trip generation is defined as the number of vehicle movements that enter or exit the respective project site during a designated time period, such as a specific peak hour (AM or PM) or an entire day. The magnitude of the anticipated vehicle trip generation for the proposed project was derived from the Institute of Transportation Engineers (ITE) publication, *Trip Generation,* 11th Edition. The residential use on-site is classified under *LUC 220 – Multifamily Housing Low-Rise*. While the project is intended to be affordable housing, the City requested a more conservative assumption of market-rate units should future plans change. Dwelling units was used as the input variable with ITE's average rates to determine trip ends.

Site development, per the zoning requirements, includes ground-level commercial space totaling ~11,142 square feet. The space is intended to be marketed and occupied as general office. However, per City direction, a broader land use assumption of *LUC 822 – Strip Retail* was utilized. This LUC could account for a variety of users/tenants that could occupy the space. Though with limited visibility along Highway 211 from the building's proposed location, most tenants are likely to be lower generating uses such as professional office. Consistent with LUC 822, pass-by trips were accounted for. Pass-by trips are motorists already traveling along the site who decide to make an intermediate stop before proceeding to their primary destination. These trips are not considered as new trips but will impact the site's access points. Table 5 below summarizes trip generation for the site. ITE trip generation sheets have been attached in the appendix for reference.

Table 5: Project Trip Generation

Land Use	Size	Type	AWDT	AM Peak-Hour Trips			PM Peak-Hour Trips		
				In	Out	Total	In	Out	Total
LUC 220 – Multifamily Low-Rise	78 DU's	Primary	526	7	24	**31**	25	15	**40**
LUC 822 – Strip Retail Plaza (<40k)	11,142 sq. ft.	Primary	364	10	6	**16**	22	22	**44**
		Pass-by[3]	243	6	4	**10**	15	14	**29**
	Total Primary Trips		890	17	30	**47**	47	37	**84**
	Total Pass-By Trips		243	6	4	**10**	15	14	**29**

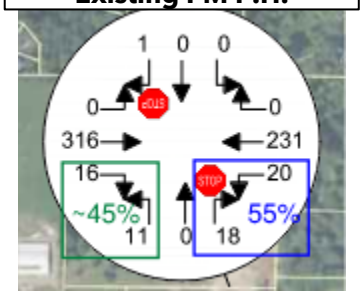
Based on the data presented in Table 5, the project is expected to conservatively generate 890 average weekday daily primary trips with 47 primary trips occurring in

[3] As no pass-by data is available for LUC 822, LUC 821 pass-by data has been applied (40%).

the AM peak hour and 84 primary trips occurring in the PM peak hour. Pass-by trips are anticipated at 10 AM peak hour trips and 29 PM peak hour trips.

4.2 Distribution & Assignment

Hwy 211/Village Blvd Existing PM P.H.



Trip distribution describes the process by which project generated trips are dispersed on the street network surrounding the subject site. The basis of the percentages is from the existing field counts from the intersection of Highway 211 & SE Village Boulevard. See right:

Pass-by trips were estimated with a 50/50 west/east split along Highway 211 and a 55/45 west/east split based on existing peak hour counts. See Figure 5 (AM peak hour) and Figure 6 (PM peak hour) for reference.

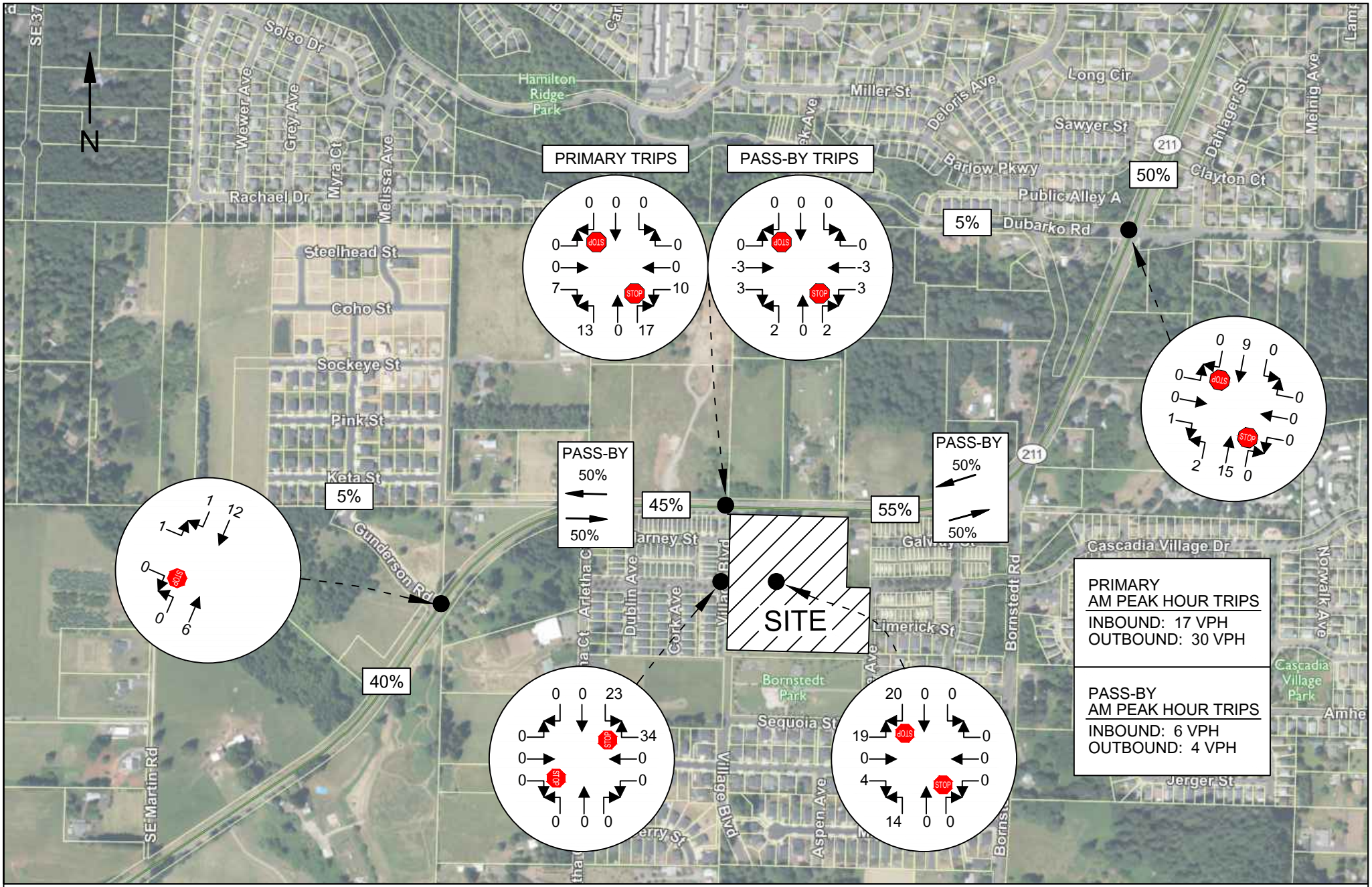
At the point of access via the newly constructed easterly extension of Cascadia Village Drive, approximately 32 apartments units and all proposed commercial space is provided to the north (40% of all dwelling units). The southern portion of the property will allow access to the remaining 46 units. Trip distribution has been assigned accordingly.

Additionally, due to the extension of Cascadia Village Drive to Pine Street as part of site development, it is anticipated that minor rerouting of local traffic could occur. The extension would provide a more direct route for a cluster of approximately 27 dwelling units (see Figure 7 for reference). However, only inbound traffic from Highway 211 could use the extension due to an approximate 100-foot unbuildable westbound portion of the roadway (no right-of-way). Consequently, no outbound rerouting was accounted for. Rerouted volumes were derived using ITE data using similar trip distribution percentages.

Lastly, as part of frontage improvements, Pine Street is required to be constructed from Highway 211 and south ~300-feet before connecting to Cascadia Village Drive. Due to right-of-way constraints, only half-width (14-feet) will be constructed which accommodates only southbound, one-way flow (upon full-build at a later date, the intersection would be restricted to right-in, right-out at Highway 211). Therefore, only eastbound right-turns could use this new roadway in which there would be little if any project traffic as they would first pass SE Village Boulevard. Therefore, trip distribution does not consider Pine Street extension as a travel route.

4.3 Future Peak Hour Volumes

A two-year horizon of 2025 was used for future analysis and reflecting buildout conditions. Future 2025 traffic volumes without the project were derived by applying a 2.0 percent annual growth rate to existing traffic volumes shown in Figures 3 and 4. AM and PM forecast 2025 volumes without project traffic are illustrated in Figures 8 and 9. Figures 10 and 11 illustrates forecast 2025 AM and PM peak hour volumes with project-generated traffic. Again, given the limited functionality and little to no use expected from the Pine Street extension, this roadway segment was not considered in the forecast analysis.



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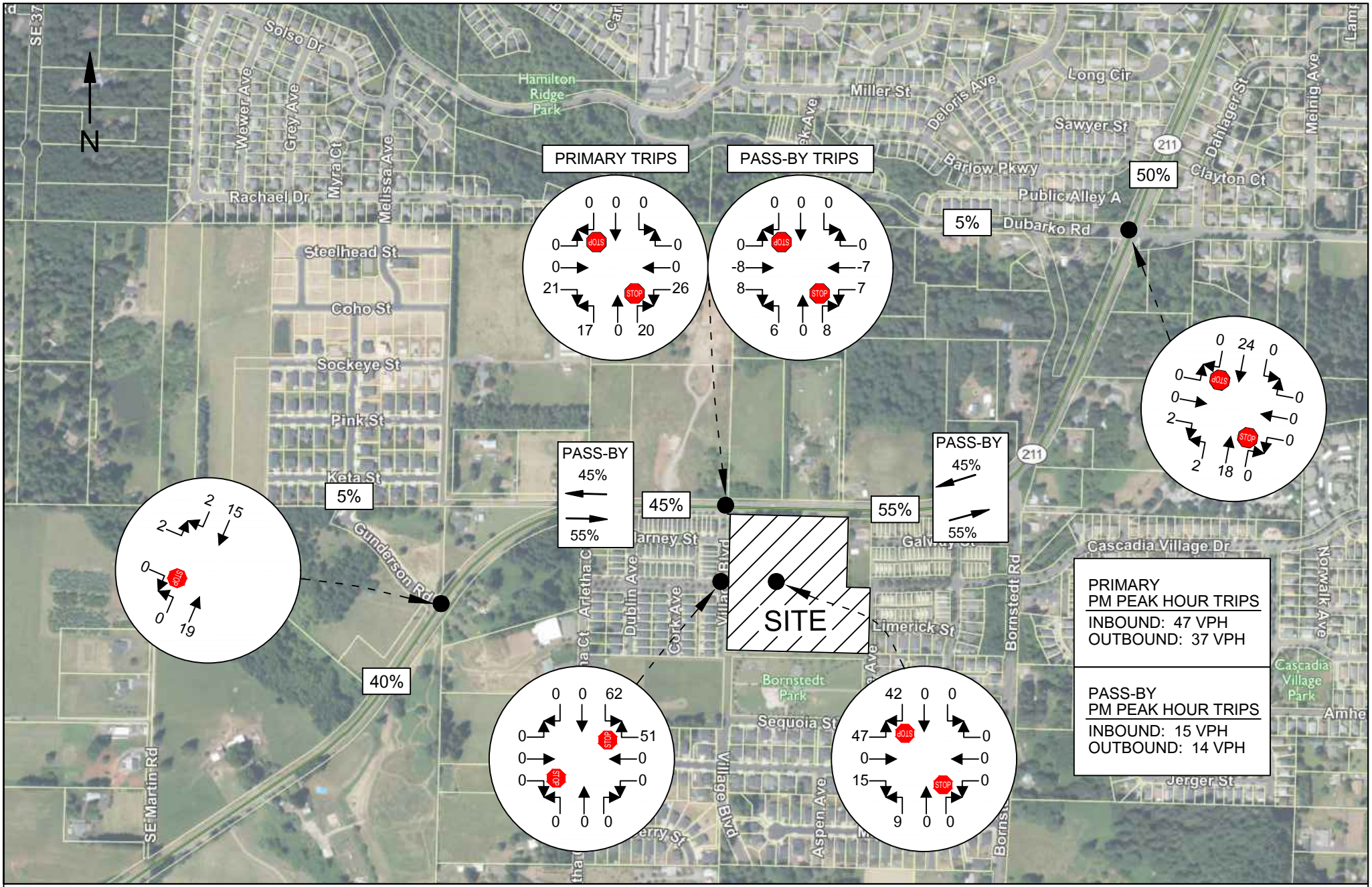
AM PEAK HOUR TRIP DISTRIBUTION & ASSIGNMENT
FIGURE 5



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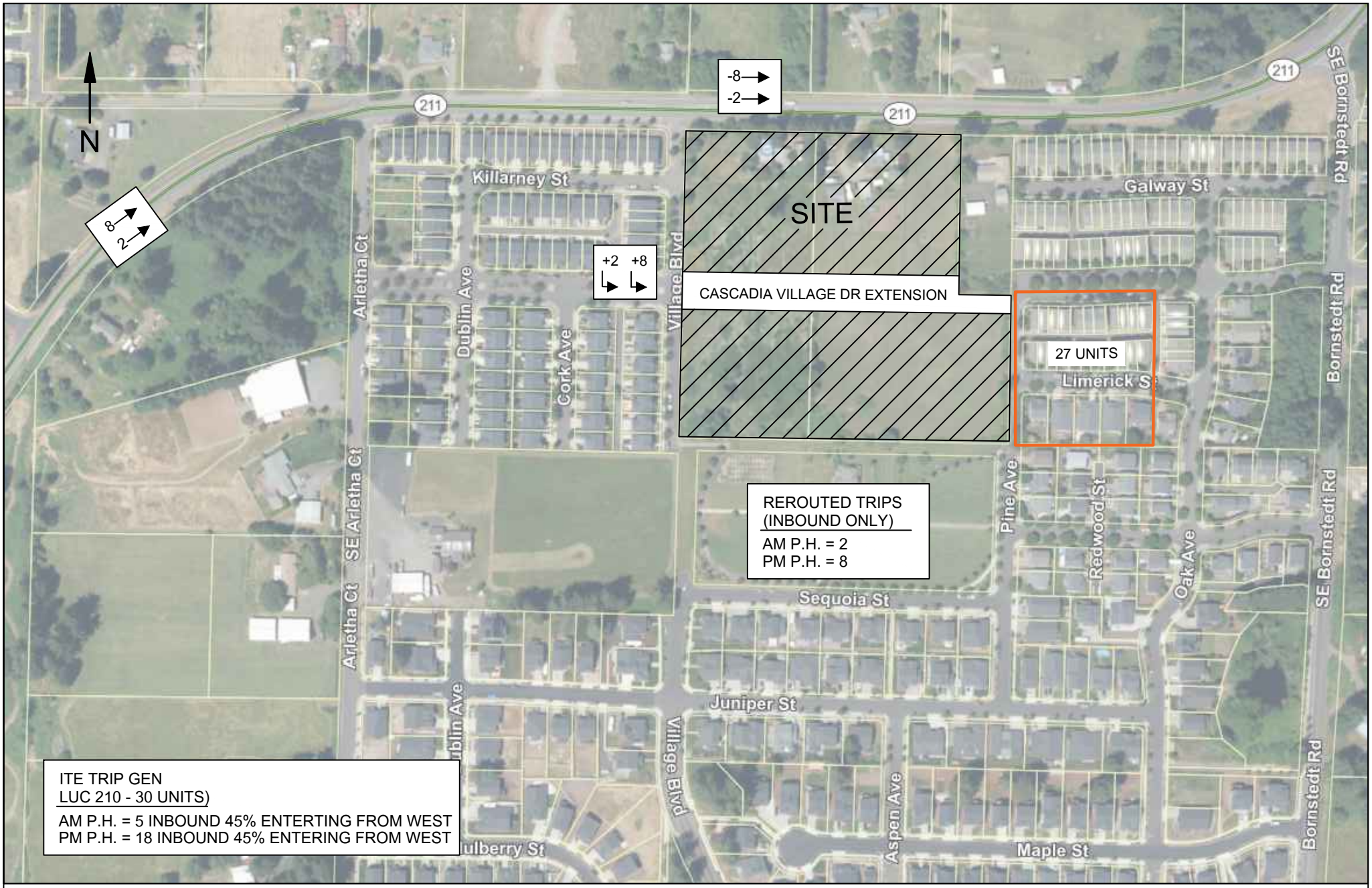
PM PEAK HOUR TRIP DISTRIBUTION & ASSIGNMENT
FIGURE 6



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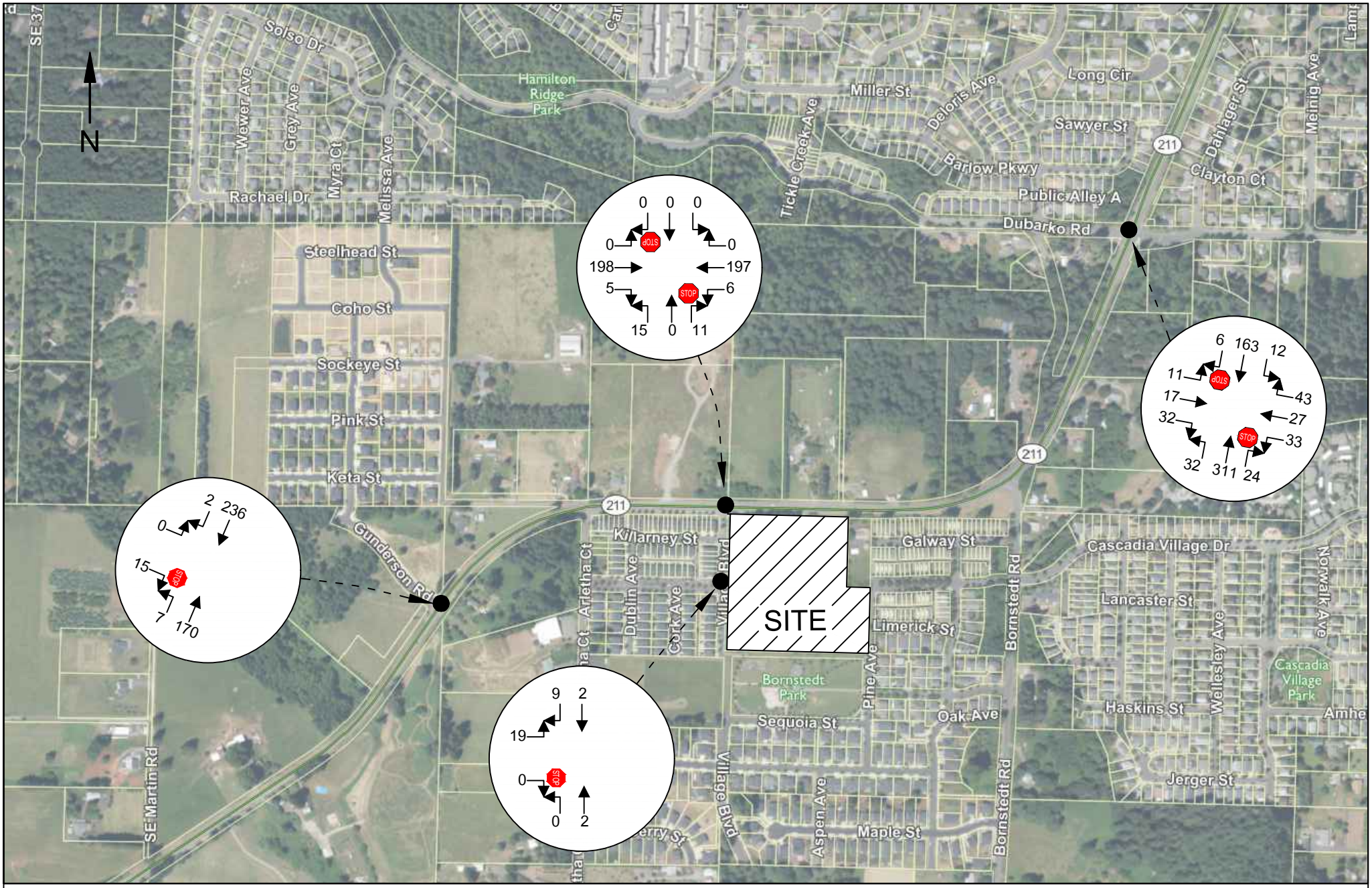
EXPECTED REROUTED TRAFFIC
FIGURE 7



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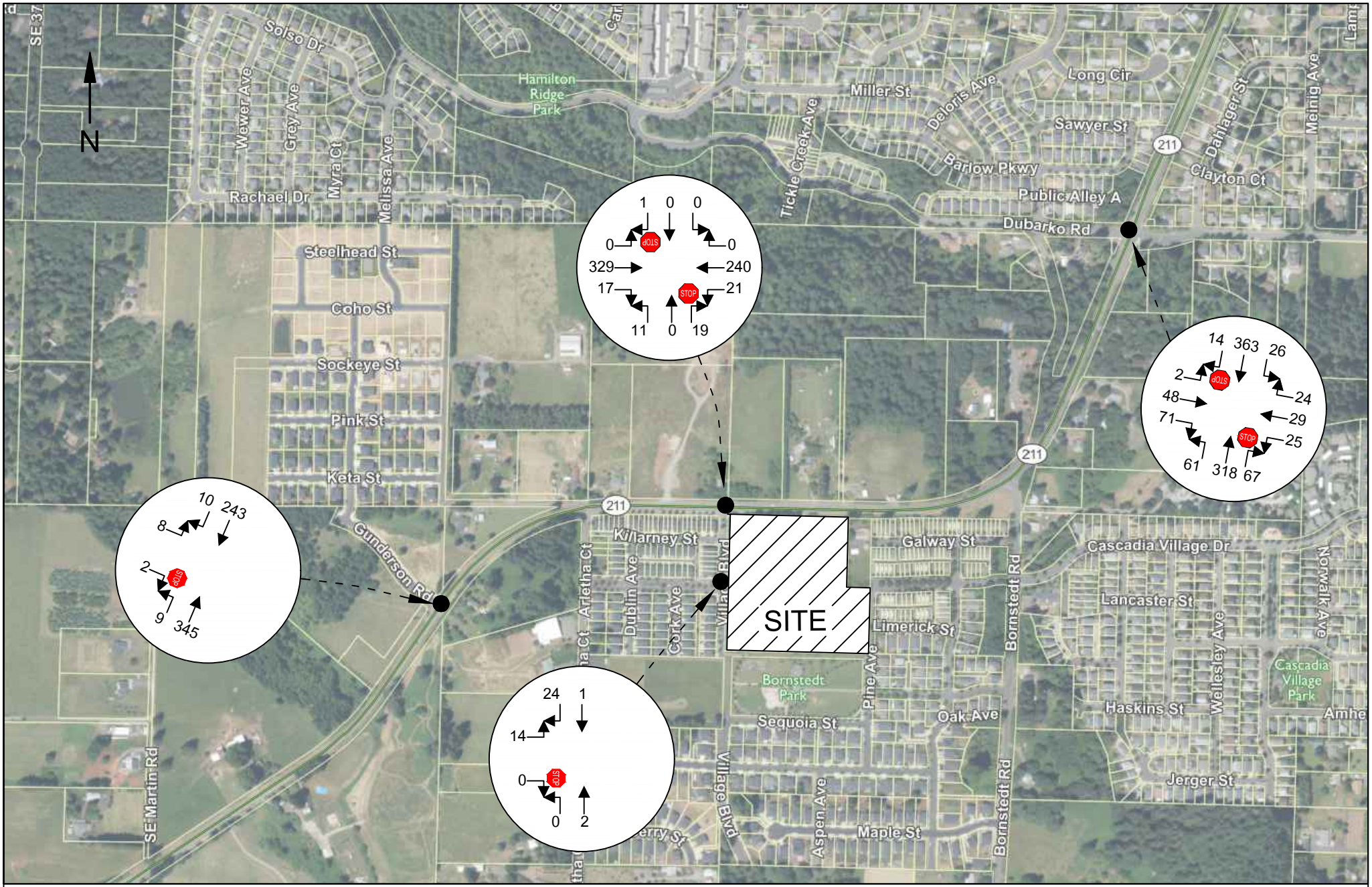
FORECAST 2025 AM PEAK HOUR VOLUMES WITHOUT PROJECT
FIGURE 8



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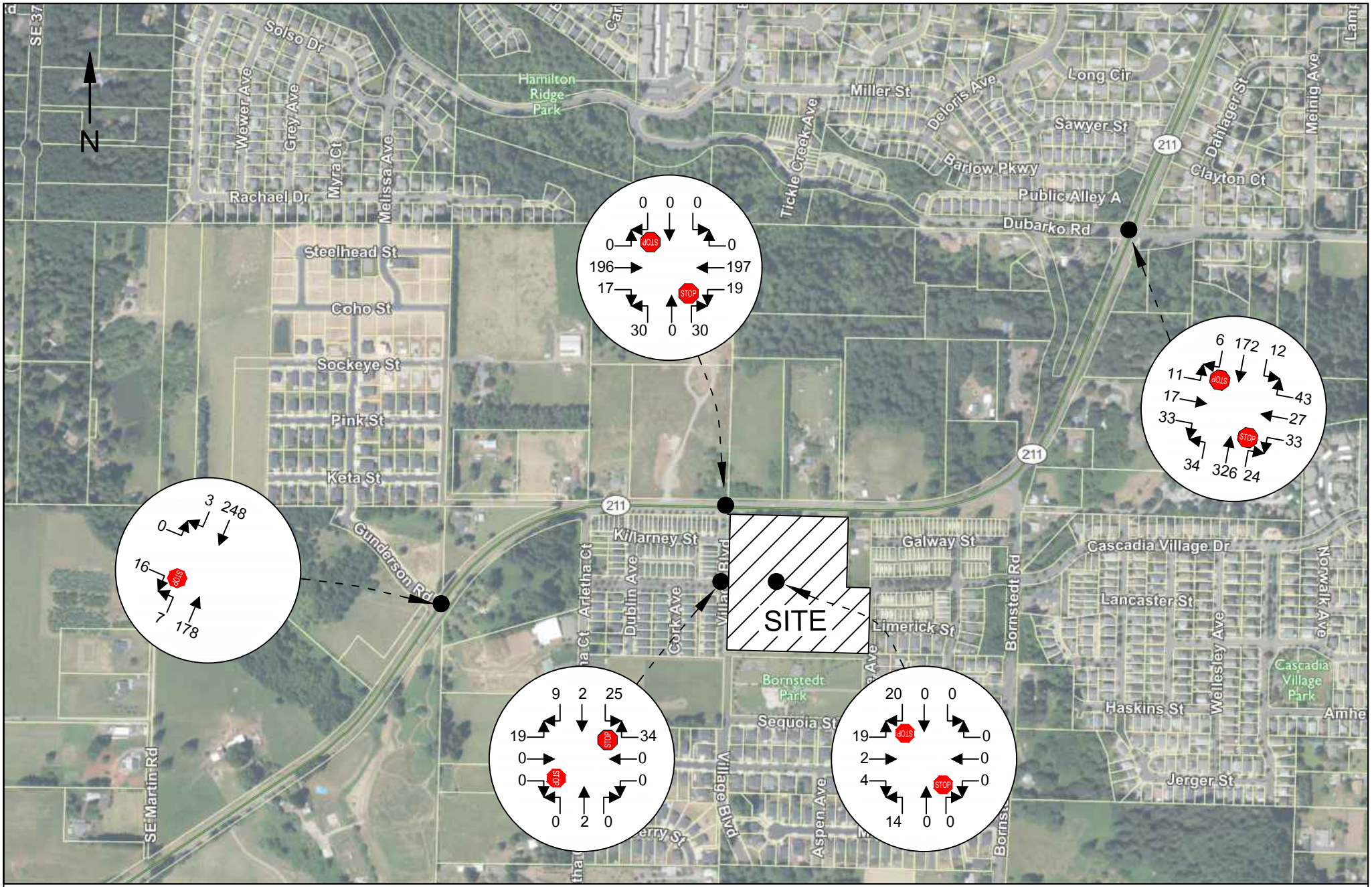
FORECAST 2025 PM PEAK HOUR VOLUMES WITHOUT PROJECT
FIGURE 9



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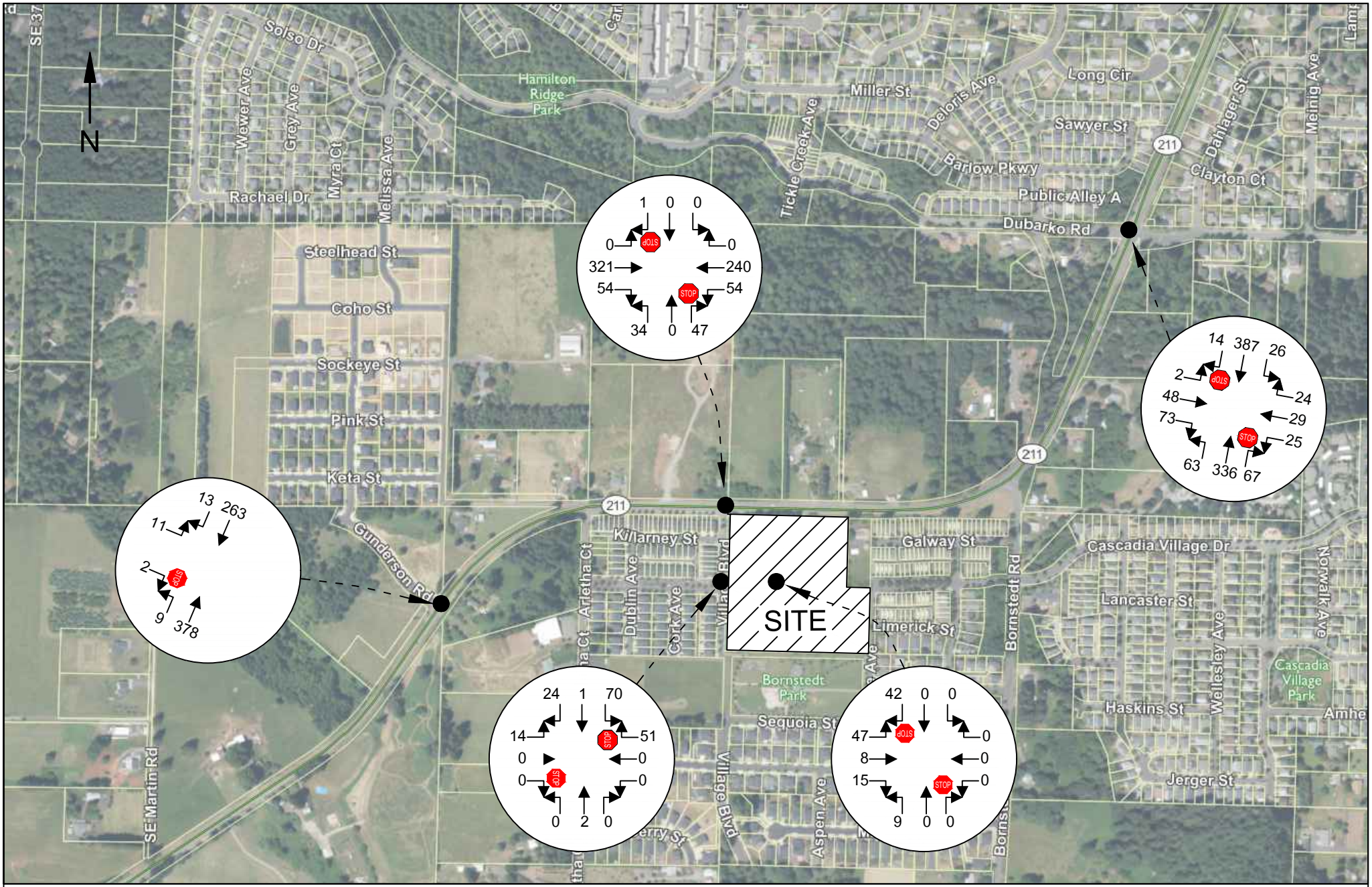
FORECAST 2025 AM PEAK HOUR VOLUMES WITH PROJECT
FIGURE 10



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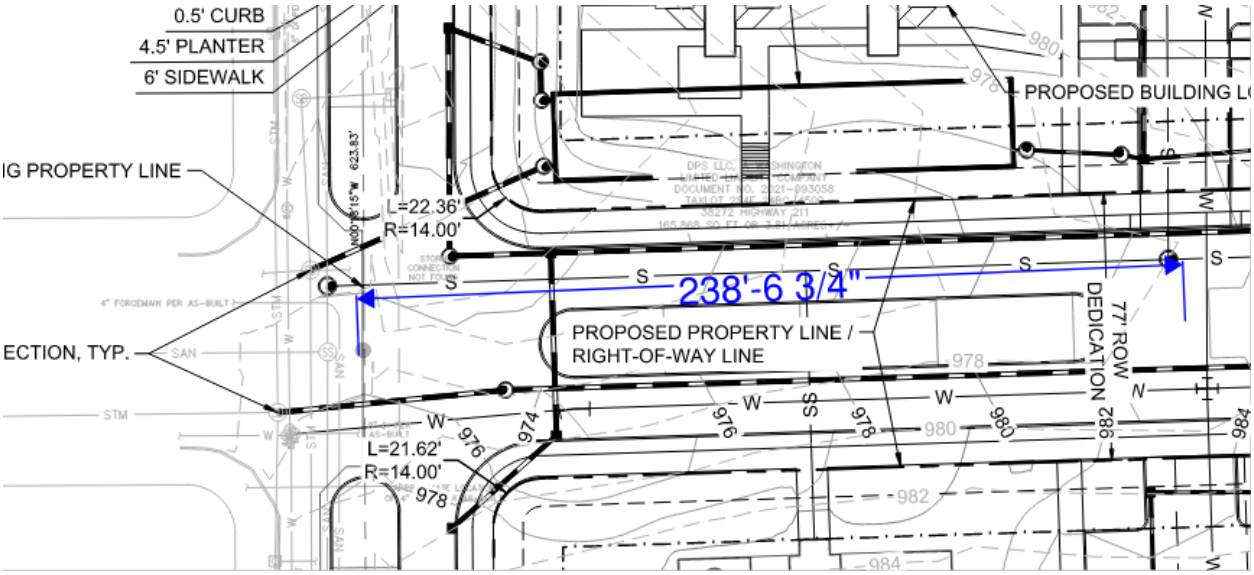
FORECAST 2025 PM PEAK HOUR VOLUMES WITH PROJECT
FIGURE 11

4.4 Access & Sight Distance

Access

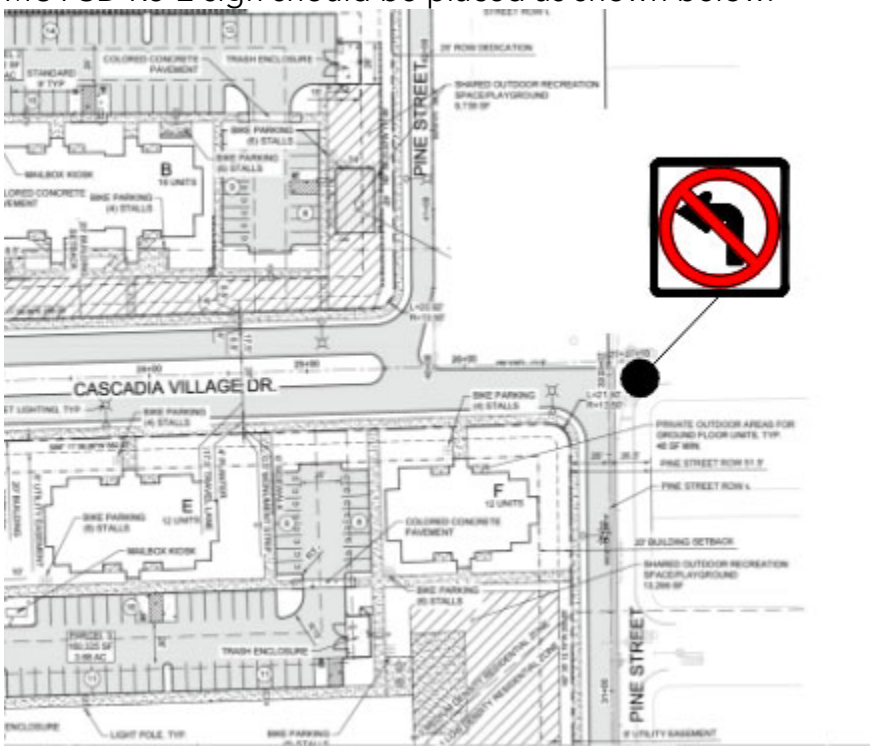
Primary access to the proposed development is to occur via one new easterly extension of Cascadia Village Drive from SE Village Boulevard, bisecting the subject site. Refer to the site plan in Figure 2 for further details, which illustrates all project accesses, roadways internal to the development and adjacent driveways. The Sandy Transportation System Plan classifies Cascadia Village Drive as a future collector roadway. A collector classification requires accesses on the roadway to be located a minimum of 150 feet from any other access or street intersection. The single proposed access extending both north and south from Cascadia Village Drive internal to the subject property is located in excess of 150 feet from SE Village Boulevard, meeting City standards.



It should be noted that the site plan illustrates a new Pine Street connection and roadway along the eastern portion of the subject site. This is a future roadway per City's Transportation Plan. However, nearby existing development has precluded Pine Street from contiguous north/south construction. Consequently, the roadway would have discontinuity with an approximate 135-foot offset between the existing Pine Street centerline.

Given the misalignment, the following are recommendations:

1. Post a "No Left Turn" sign at the existing northern terminus of Pine Street.
    a. Due to a 135-foot unimproved segment, no northbound left turns traveling westbound could be accommodated.
    b. MUTCD R3-2 sign should be placed as shown below.



2. With little benefit as a one-way, southbound right-in only from Highway 211, Pine Street could be blocked off at both ends with barricades.
    a. The roadway may lead to driver confusion as a one-way and could be open to the public once fully constructed with two-travel lanes.

3. Forego Pine Street construction.
    a. In its full build conditions, new Pine Street would not be aligned opposite the existing Pine Street. Design considerations would be needed for how to best operate the two Pine Street segments.

Sight Distance

Any new driveway shall be designed so as to allow sufficient sight lines in accordance with *American Association of State Highway and Transportation Officials* (AASHTO) standards. As previously noted, primary sight access is to occur via an easterly extension of Cascadia Village Drive from SE Village Boulevard. With no posted speed limit on SE Village Boulevard, the standard City local speed limit of 25-mph was assumed, which would require 280 feet of entering sight distance. Sight lines looking south are clear in excess of 300-feet, available to where the roadway currently dead-ends. Looking north, sight lines are clear to the roadway's intersection with Highway 211. As such, no sight line deficiencies are identified as a result of the development proposal.

Should Pine Street be constructed, sight distance would need to comply with City/ODOT standards. As a right-in only, no sight distance departure is identified. Once fully constructed, sight lines would need to be verified in the westerly direction.

TRANSPORTATION SYSTEM PLAN REVIEW

The development proposal includes the construction of an east-west collector roadway connection, Cascadia Village Drive, linking SE Village Boulevard to development west of the subject site. This improvement is consistent with connectivity plans outlined in the City of Sandy's Transportation System Plan. Moreover, coordination is being made with the City regarding the construction of a new north-south Pine Street improvement. Final design of the Pine Street improvement will be coordinated with the City. Lastly, all frontage improvements should comply with any applicable standards regarding functional classification, typical sections, access management, and other attributes as appropriate.

4.5 Future Level of Service

Level of service analyses were made of the future peak hour volumes without (background) and with project related trips added to the key roadways and intersections. This analysis once again involved the use of the *Synchro 11* analysis program. Delays and v/c ratios for each study intersection under future 2025 conditions are shown in Table 6.

Table 6: Forecast 2025 Peak Hour Level of Service

Delays given in Seconds Per Vehicle

				Without Project			*With Project*		
Intersection	**Control**	**Peak-Hour**	**Crt. Mvmt.**	**LOS**	**Delay**	**V/C**	**LOS**	**Delay**	**V/C**
Hwy 211 & Gunderson Road	Stop	AM	SEB	A	9.9	0.02	B	10.0	0.02
		PM		B	12.9	0.02	B	13.8	0.03
Hwy 211 & SE Village Blvd	Stop	AM	NB	B	11.2	0.05	B	11.6	0.11
		PM		B	12.3	0.06	B	14.6	0.19
Cascadia Village Dr & SE Village Blvd	Stop	AM	EB	A	8.7	0.03	A	9.6	0.03
		PM		A	8.8	0.02	B	11.2	0.07
Hwy 211 & Dubarko Road	Stop	AM	WB-TL	C	17.8	0.19	C	18.6	0.20
		PM		D	34.6	0.32	E	39.0	0.36
Cascadia Village Dr & Access	Stop	AM	NB	--	--	--	A	9.0	0.02
		PM		--	--	--	A	9.7	0.04

All intersections with the exception of the westbound through/left-turn movement from Dubarko to Highway 211 is projected to operate with LOS C or better indicating no operational deficiencies.

Highway 211 & Dubarko Road: is projected to operate with LOS D without and LOS E with project under the forecast 2025 PM peak hour conditions. It should be noted that the westbound approach as a whole (both left/through and right turn lanes) operates at LOS D (30.3 sec), the v/c ratio is 0.36, and the 95th queue is two vehicles– all indicating no significant impact. Moreover, this intersection is scheduled for the installation of a traffic signal per the City's planned improvements. No mitigation is therefore identified.

4.6 Left Turn Warrants

Based on inspection, the volumes do not meet with minimum thresholds to require a left-turn lane at Cascadia Village Drive from SE Village Boulevard.

5. CONCLUSIONS & MITIGATION

The Cascade Creek project proposes for the construction of 78 multi-family, income restricted apartment units and approximately 11,142 square feet of office/commercial space located within the city of Sandy. The subject site is bordered to the west by SE SE Village Boulevard and located south of Highway 211 on 8.84-acres within two tax parcels. Primary access to and from the site is proposed via an easterly extension of Cascadia Village Drive. Frontage improvements may also require an extension of Pine Street from Highway 211 as shown in the site plan. Existing AM and PM peak hour level of service is shown to meet city LOS standards operating with LOS D conditions or better.

Based on ITE data, and a conservative trip generation assessment, the project is estimated to generate 890 primary average weekday daily trips with 47 primary AM peak hour trips and 84 primary PM peak hour trips. Pass-by trips have also been considered for the commercial portion of the project as summarized in Table 5.

Forecast 2025 peak hour delays are shown to operate with LOS C conditions or better with the exception of the study intersection of Highway 211 & Dubarko Road which was shown to operate with LOS E conditions during the PM peak hour. According to the City's planned improvements, the intersection is scheduled for the installation of a signal which would improve LOS. Moreover, the maximum v/c ratio is 0.36 indicating acceptable conditions. A left turn lane would not be warranted at the project access via SE village Boulevard given the low north/south volumes.

Proposed mitigation for the project is as follows:

1. Depending on city review, if required for construction, the Pine Street roadway extending south from Highway 211 should consider temporary blockades due to insufficient right-of-way of constructing two travel lanes. The one-way southbound road could lead to driver confusion and does not offer operational benefit. The roadway could be opened subsequent to buildout of the eastern portion.
2. A MUTCD R3-2 sign "No Left Turn" or equivalent is recommended at the existing northern Pine Street terminus. See Section 4.4 for details.
3. The development may be subject to Traffic Impact Fees. Fees are assessed by the City prior to building permit issuance.

CASCADE CREEK
TRAFFIC IMPACT ANALYSIS

APPENDIX

1. INTERSECTION COUNT SHEETS

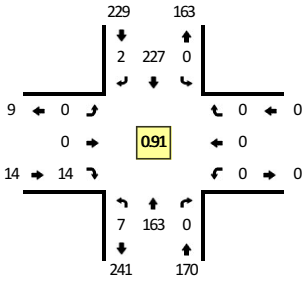
Type of peak hour being reported: Intersection Peak

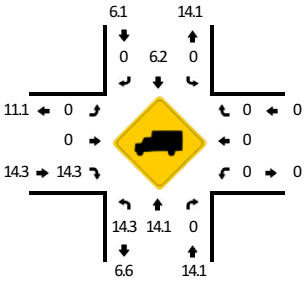
Method for determining peak hour: Total Entering Volume

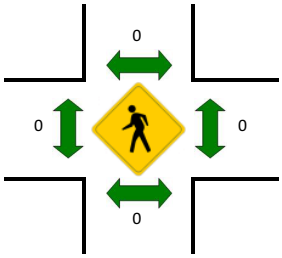
LOCATION: Hwy 211 -- Gunderson Rd
CITY/STATE: Clackamas, OR

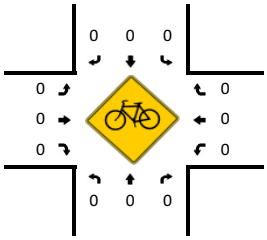
QC JOB #: 16204001
DATE: Wed, May 10 2023

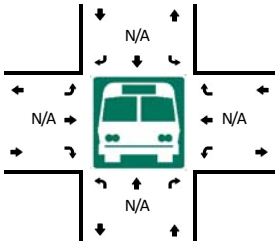
Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:10 AM -- 7:25 AM

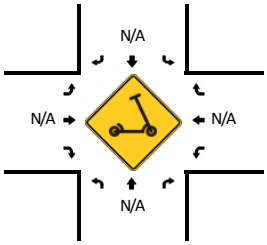












5-Min Count Period Beginning At	Hwy 211 (Northbound)				Hwy 211 (Southbound)				Gunderson Rd (Eastbound)				Gunderson Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	6	0	0	0	14	0	0	0	0	0	0	0	0	0	0	20	
7:05 AM	0	6	0	0	0	19	0	0	0	0	1	0	0	0	0	0	26	
7:10 AM	1	17	0	0	0	17	0	0	0	0	0	0	0	0	0	0	35	
7:15 AM	1	6	0	0	0	25	1	0	0	0	2	0	0	0	0	0	35	
7:20 AM	2	18	0	0	0	19	0	0	0	0	4	0	0	0	0	0	43	
7:25 AM	2	8	0	0	0	20	0	0	0	0	0	0	0	0	0	0	30	
7:30 AM	0	9	0	0	0	16	1	0	0	0	0	0	0	0	0	0	26	
7:35 AM	0	11	0	0	0	20	0	0	0	0	3	0	0	0	0	0	34	
7:40 AM	0	20	0	0	0	17	0	0	0	0	1	0	0	0	0	0	38	
7:45 AM	0	8	0	0	0	18	0	0	0	0	3	0	0	0	0	0	29	
7:50 AM	0	17	0	0	0	20	0	0	0	0	0	0	0	0	0	0	37	
7:55 AM	0	24	0	0	0	18	0	0	0	0	1	0	0	0	0	0	43	396
8:00 AM	1	11	0	0	0	14	0	0	0	0	0	0	0	0	0	0	26	402
8:05 AM	0	14	0	0	0	23	0	0	0	0	0	0	0	0	0	0	37	413
8:10 AM	0	14	0	0	0	12	0	0	2	0	1	0	0	0	0	0	29	407
8:15 AM	3	12	0	0	0	15	0	0	0	0	0	0	0	0	0	0	30	402
8:20 AM	0	19	0	0	0	17	0	0	0	0	0	0	0	0	0	0	36	395
8:25 AM	0	16	0	0	0	12	0	0	0	0	0	0	0	0	0	0	28	393
8:30 AM	0	14	0	0	0	19	0	0	0	0	1	0	0	0	0	0	34	401
8:35 AM	0	15	0	0	0	12	1	0	3	0	0	0	0	0	0	0	31	398
8:40 AM	0	22	0	0	0	13	1	0	0	0	1	0	0	0	0	0	37	397
8:45 AM	0	14	0	0	0	15	0	0	0	0	0	0	0	0	0	0	29	397
8:50 AM	1	13	0	0	0	10	1	0	1	0	1	0	0	0	0	0	27	387
8:55 AM	0	9	0	0	0	15	0	0	1	0	1	0	0	0	0	0	26	370

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	16	164	0	0	0	244	4	0	0	0	24	0	0	0	0	0	452
Heavy Trucks	0	16	0		0	8	0		0	0	4		0	0	0		28
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/16/2023 8:28 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

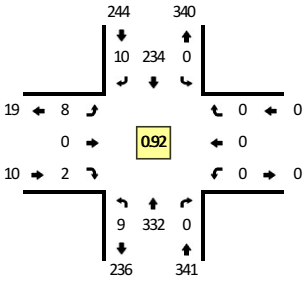
Type of peak hour being reported: Intersection Peak

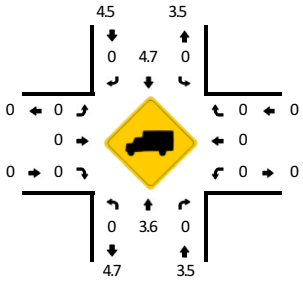
Method for determining peak hour: Total Entering Volume

LOCATION: Hwy 211 -- Gunderson Rd
CITY/STATE: Clackamas, OR

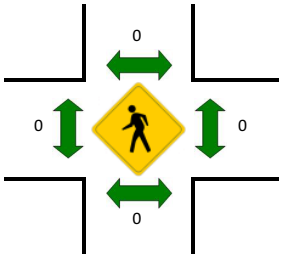
QC JOB #: 16204002
DATE: Wed, May 10 2023

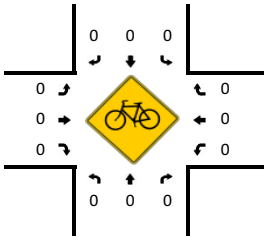
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

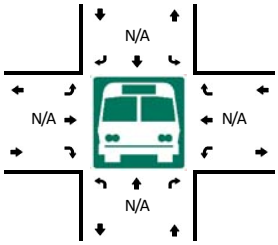


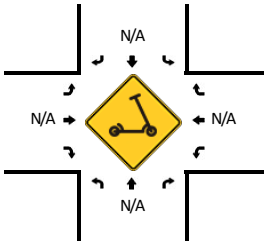


Quality Counts
DATA THAT DRIVES COMMUNITIES









5-Min Count Period Beginning At	Hwy 211 (Northbound)				Hwy 211 (Southbound)				Gunderson Rd (Eastbound)				Gunderson Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	24	0	0	0	20	0	0	0	0	0	0	0	0	0	0	44	
4:05 PM	0	22	0	0	0	13	1	0	1	0	1	0	0	0	0	0	38	
4:10 PM	1	29	0	0	0	21	1	0	0	0	1	0	0	0	0	0	53	
4:15 PM	0	35	0	0	0	17	0	0	0	0	3	0	0	0	0	0	55	
4:20 PM	1	24	0	0	0	14	0	0	0	0	1	0	0	0	0	0	40	
4:25 PM	1	18	0	0	0	16	1	0	0	0	1	0	0	0	0	0	37	
4:30 PM	0	19	0	0	0	16	0	0	1	0	0	0	0	0	0	0	36	
4:35 PM	2	16	0	0	0	21	1	0	0	0	0	0	0	0	0	0	40	
4:40 PM	1	28	0	0	0	26	3	0	0	0	1	0	0	0	0	0	59	
4:45 PM	0	31	0	0	0	25	0	0	1	0	0	0	0	0	0	0	57	
4:50 PM	1	20	0	0	0	22	0	0	0	0	0	0	0	0	0	0	43	
4:55 PM	0	21	0	0	0	24	0	0	0	0	0	0	0	0	0	0	45	547
5:00 PM	2	38	0	0	0	22	0	0	1	0	0	0	0	0	0	0	63	566
5:05 PM	4	27	0	0	0	17	1	0	0	0	0	0	0	0	0	0	49	577
5:10 PM	0	25	0	0	0	22	1	0	1	0	1	0	0	0	0	0	50	574
5:15 PM	1	22	0	0	0	13	0	0	0	0	0	0	0	0	0	0	36	555
5:20 PM	0	31	0	0	0	18	2	0	1	0	0	0	0	0	0	0	52	567
5:25 PM	0	24	0	0	0	13	0	0	2	0	0	0	0	0	0	0	39	569
5:30 PM	0	33	0	0	0	16	1	0	2	0	0	0	0	0	0	0	52	585
5:35 PM	0	32	0	0	0	16	2	0	0	0	0	0	0	0	0	0	50	595
5:40 PM	0	30	0	0	0	12	1	0	0	0	1	0	0	0	0	0	44	580
5:45 PM	0	19	0	0	0	21	0	0	1	0	0	0	0	0	0	0	41	564
5:50 PM	1	36	0	0	0	14	0	0	0	0	1	0	0	0	0	0	52	573
5:55 PM	1	19	0	0	0	13	1	0	0	0	1	0	0	0	0	0	35	563

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	24	360	0	0	0	244	8	0	8	0	4	0	0	0	0	0	648
Heavy Trucks	0	20	0		0	12	0		0	0	0		0	0	0		32
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/16/2023 8:28 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

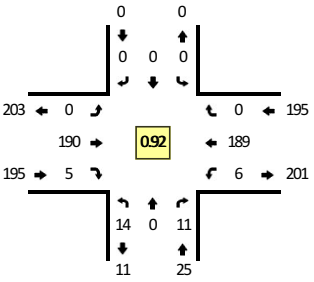
Type of peak hour being reported: Intersection Peak

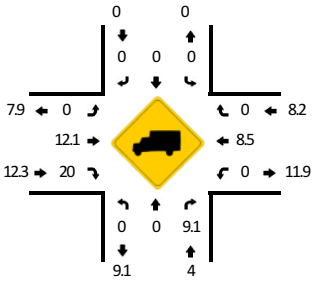
Method for determining peak hour: Total Entering Volume

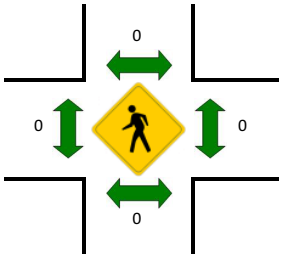
LOCATION: SE Village Blvd -- Hwy 211
CITY/STATE: Sandy, OR

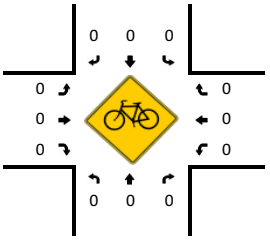
QC JOB #: 16204003
DATE: Wed, May 10 2023

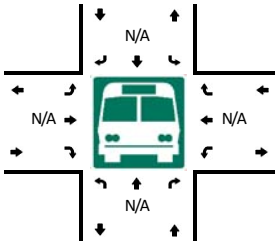
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

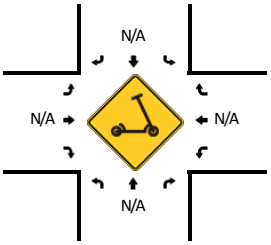












5-Min Count Period Beginning At	SE Village Blvd (Northbound)				SE Village Blvd (Southbound)				Hwy 211 (Eastbound)				Hwy 211 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	0	0	0	0	0	0	0	0	6	0	0	0	10	0	0	17	
7:05 AM	1	0	5	0	0	0	0	0	0	6	0	0	0	17	0	0	29	
7:10 AM	1	0	2	0	0	0	0	0	0	17	0	0	1	20	0	0	41	
7:15 AM	3	0	1	0	0	0	0	0	0	6	0	0	1	21	0	0	32	
7:20 AM	1	0	0	0	0	0	0	0	0	18	0	0	0	18	0	0	37	
7:25 AM	2	0	0	0	0	0	0	0	0	8	0	0	1	21	0	0	32	
7:30 AM	0	0	2	0	0	0	0	0	0	10	0	0	0	15	0	0	27	
7:35 AM	0	0	2	0	0	0	0	0	0	11	0	0	0	15	0	0	28	
7:40 AM	2	0	1	0	0	0	0	0	0	20	0	0	0	16	0	0	39	
7:45 AM	0	0	0	0	0	0	0	0	0	8	0	0	0	20	0	0	28	
7:50 AM	1	0	1	0	0	0	0	0	0	18	0	0	0	18	0	0	38	
7:55 AM	1	0	1	0	0	0	0	0	0	24	1	0	2	18	0	0	47	395
8:00 AM	3	0	1	0	0	0	0	0	0	10	1	0	0	12	0	0	27	405
8:05 AM	2	0	0	0	0	0	0	0	0	13	0	0	1	21	0	0	37	413
8:10 AM	1	0	1	0	0	0	0	0	0	16	0	0	1	13	0	0	32	404
8:15 AM	0	0	2	0	0	0	0	0	0	14	0	0	0	16	0	0	32	404
8:20 AM	1	0	0	0	0	0	0	0	0	18	0	0	1	12	0	0	32	399
8:25 AM	1	0	1	0	0	0	0	0	0	17	2	0	1	13	0	0	35	402
8:30 AM	1	0	2	0	0	0	0	0	0	13	1	0	0	17	0	0	34	409
8:35 AM	1	0	1	0	0	0	0	0	0	19	0	0	0	13	0	0	34	415
8:40 AM	2	0	0	0	0	0	0	0	0	20	1	0	1	11	0	0	35	411
8:45 AM	2	0	1	0	0	0	0	0	0	13	1	0	1	13	0	0	31	414
8:50 AM	1	0	1	0	0	0	0	0	0	16	0	0	0	12	0	0	30	406
8:55 AM	2	0	1	0	0	0	0	0	0	9	0	0	2	11	0	0	25	384

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	8	0	8	0	0	0	0	0	0	200	4	0	8	224	0	0	452
Heavy Trucks	0	0	0		0	0	0		0	28	0		0	12	0		40
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/16/2023 8:28 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

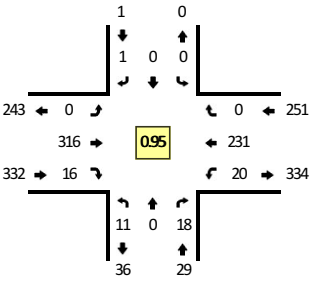
Type of peak hour being reported: Intersection Peak

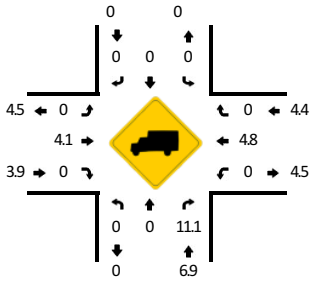
Method for determining peak hour: Total Entering Volume

LOCATION: SE Village Blvd -- Hwy 211
CITY/STATE: Sandy, OR

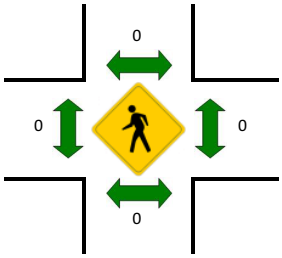
QC JOB #: 16204004
DATE: Wed, May 10 2023

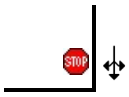
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

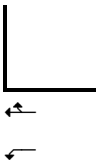


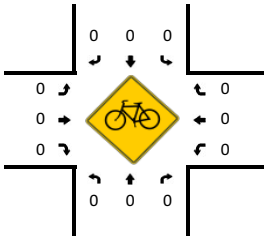


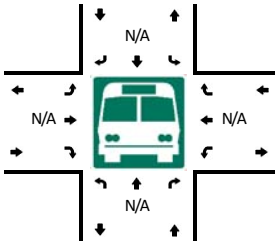
Quality Counts
DATA THAT DRIVES COMMUNITIES

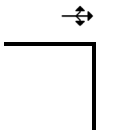


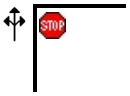


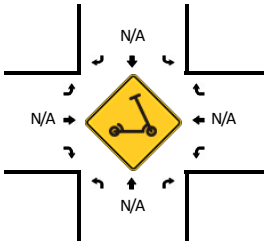












5-Min Count Period Beginning At	SE Village Blvd (Northbound)				SE Village Blvd (Southbound)				Hwy 211 (Eastbound)				Hwy 211 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	0	2	0	0	0	0	0	0	21	0	0	1	19	0	0	44	
4:05 PM	1	0	1	0	0	0	0	0	0	25	1	0	0	12	0	0	40	
4:10 PM	0	0	1	0	0	0	0	0	0	31	0	0	1	19	0	0	52	
4:15 PM	1	0	1	0	0	0	0	0	0	25	4	0	1	16	0	0	48	
4:20 PM	0	0	1	0	0	0	0	0	0	27	1	0	5	16	0	0	50	
4:25 PM	0	0	1	0	0	0	0	0	0	15	0	0	3	17	0	0	36	
4:30 PM	0	0	0	0	0	0	0	0	0	18	2	0	1	17	1	0	39	
4:35 PM	2	0	1	0	0	0	0	0	0	17	1	0	2	18	1	0	42	
4:40 PM	0	0	1	0	0	0	1	0	0	26	0	0	4	29	0	0	61	
4:45 PM	2	0	1	0	0	0	0	0	0	33	1	0	1	24	0	0	62	
4:50 PM	0	0	1	0	0	0	0	0	0	17	2	0	0	19	0	0	39	
4:55 PM	2	0	1	0	0	0	0	0	0	15	0	0	4	27	0	0	49	562
5:00 PM	0	0	1	0	0	0	0	0	0	41	2	0	1	20	0	0	65	583
5:05 PM	1	0	1	0	0	0	0	0	0	25	1	0	2	17	0	0	47	590
5:10 PM	0	0	0	0	0	0	0	0	0	24	3	0	0	22	0	0	49	587
5:15 PM	1	0	3	0	0	0	0	0	0	19	3	0	2	11	0	0	39	578
5:20 PM	2	0	2	0	0	0	0	0	0	28	1	0	2	16	0	0	51	579
5:25 PM	1	0	2	0	0	0	0	0	0	26	1	0	2	15	0	0	47	590
5:30 PM	0	0	2	0	0	0	0	0	0	29	2	0	1	19	0	0	53	604
5:35 PM	2	0	3	0	0	0	0	0	0	33	0	0	1	12	0	0	51	613
5:40 PM	0	0	0	0	0	0	0	0	0	29	1	0	1	13	0	0	44	596
5:45 PM	1	0	0	0	0	0	0	0	0	18	3	0	3	17	0	0	42	576
5:50 PM	1	0	0	0	0	0	0	0	0	33	1	0	0	13	0	0	48	585
5:55 PM	0	0	0	0	0	0	0	0	0	22	2	0	1	15	0	0	40	576

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	8	0	12	0	0	0	4	0	0	304	12	0	20	288	0	0	648
Heavy Trucks	0	0	4		0	0	0		0	12	0		0	20	0		36
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

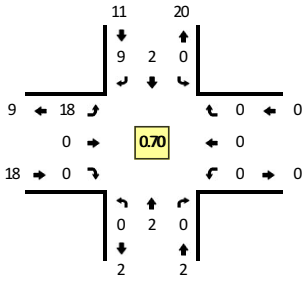
Report generated on 5/16/2023 8:28 AM

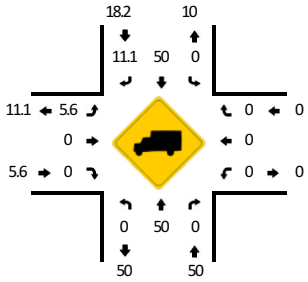
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

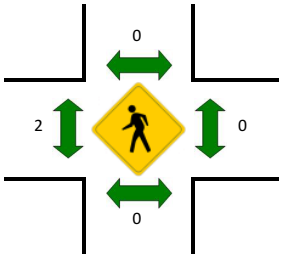
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

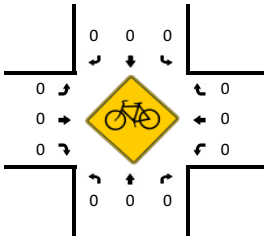
LOCATION: SE Village Blvd -- Cascadia Village Dr | **QC JOB #:** 16204005
CITY/STATE: Sandy, OR | **DATE:** Wed, May 10 2023

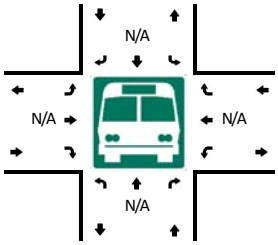
Peak-Hour: 7:55 AM -- 8:55 AM
Peak 15-Min: 7:55 AM -- 8:10 AM

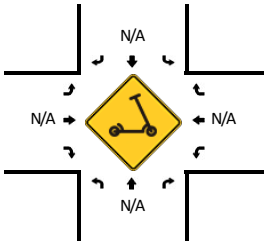












5-Min Count Period Beginning At	SE Village Blvd (Northbound)				SE Village Blvd (Southbound)				Cascadia Village Dr (Eastbound)				Cascadia Village Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
7:05 AM	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	5	
7:10 AM	0	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	4	
7:15 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:25 AM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	
7:30 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	
7:35 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
7:40 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:55 AM	0	0	0	0	0	0	2	0	3	0	0	0	0	0	0	0	5	24
8:00 AM	0	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	4	27
8:05 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	24
8:10 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	22
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
8:20 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	22
8:25 AM	0	0	0	0	0	1	2	0	2	0	0	0	0	0	0	0	5	25
8:30 AM	0	1	0	0	0	0	1	0	2	0	0	0	0	0	0	0	4	27
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
8:40 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	25
8:45 AM	0	1	0	0	0	1	1	0	2	0	0	0	0	0	0	0	5	30
8:50 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	31
8:55 AM	0	1	0	0	0	1	0	0	2	0	0	0	0	0	0	0	4	30

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	0	0	0	0	0	0	16	0	28	0	0	0	0	0	0	0	44
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

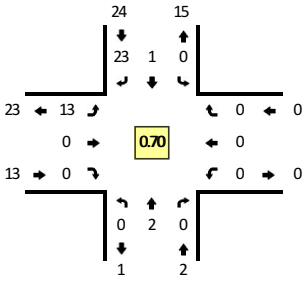
Comments:

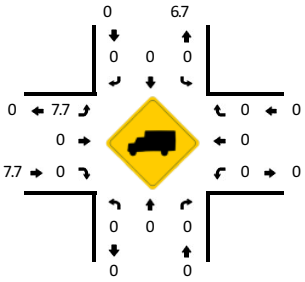
Report generated on 5/16/2023 8:28 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

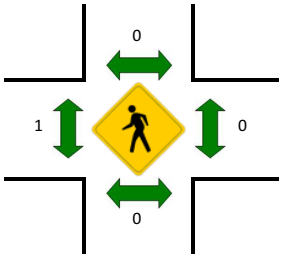
LOCATION: SE Village Blvd -- Cascadia Village Dr | **QC JOB #:** 16204006
CITY/STATE: Sandy, OR | **DATE:** Wed, May 10 2023

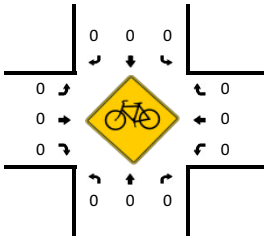
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:20 PM -- 5:35 PM

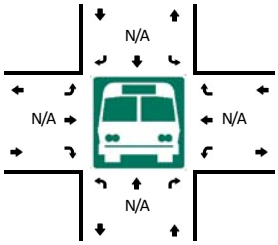


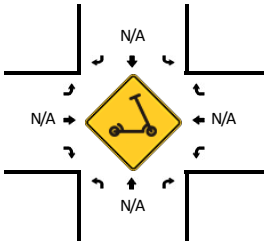


Quality Counts
DATA THAT DRIVES COMMUNITIES









5-Min Count Period Beginning At	SE Village Blvd (Northbound)				SE Village Blvd (Southbound)				Cascadia Village Dr (Eastbound)				Cascadia Village Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	3	
4:05 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
4:10 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	
4:15 PM	0	0	0	0	0	0	3	0	2	0	0	0	0	0	0	0	5	
4:20 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	
4:25 PM	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	3	
4:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	
4:35 PM	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	3	
4:40 PM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2	
4:45 PM	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	3	
4:50 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	
4:55 PM	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	31
5:00 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	31
5:05 PM	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0	0	4	34
5:10 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	33
5:15 PM	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0	0	4	32
5:20 PM	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	4	34
5:25 PM	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	4	35
5:30 PM	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	6	39
5:35 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	37
5:40 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	37
5:45 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	38
5:50 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	37
5:55 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	36

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	0	0	0	0	0	0	28	0	28	0	0	0	0	0	0	0	56
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

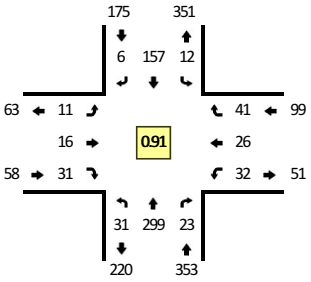
Comments:

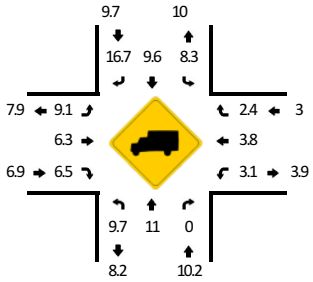
Report generated on 5/16/2023 8:28 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

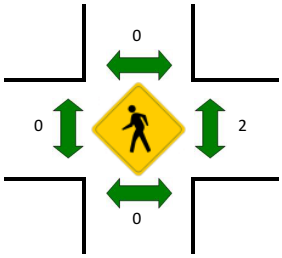
LOCATION: Hwy 211 -- Dubarko Rd | **QC JOB #:** 16204007
CITY/STATE: Sandy, OR | **DATE:** Wed, May 10 2023

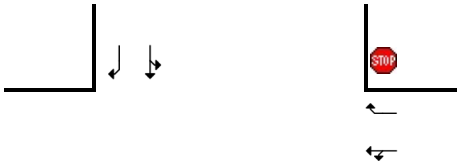
Peak-Hour: 7:55 AM -- 8:55 AM
Peak 15-Min: 7:55 AM -- 8:10 AM

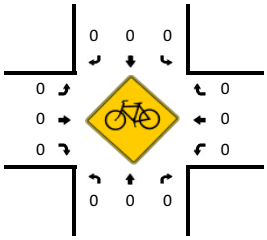


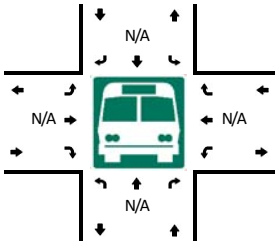


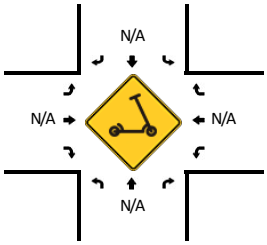
Quality Counts
DATA THAT DRIVES COMMUNITIES











5-Min Count Period Beginning At	Hwy 211 (Northbound)				Hwy 211 (Southbound)				Dubarko Rd (Eastbound)				Dubarko Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	15	3	0	1	3	0	0	0	0	3	0	1	3	2	0	34	
7:05 AM	3	20	0	0	0	9	0	0	0	1	2	0	4	5	0	0	44	
7:10 AM	2	30	0	0	0	11	1	0	1	0	5	0	1	2	3	0	56	
7:15 AM	1	17	1	0	0	13	1	0	1	0	1	0	5	3	4	0	47	
7:20 AM	3	29	1	0	0	11	0	0	0	0	4	0	3	3	3	0	57	
7:25 AM	2	25	0	0	1	17	0	0	0	0	1	0	1	3	6	0	56	
7:30 AM	4	24	0	0	0	11	0	0	1	0	0	0	3	2	5	0	50	
7:35 AM	2	31	0	0	0	8	1	0	1	1	4	0	4	4	1	0	57	
7:40 AM	5	19	3	0	1	8	0	0	2	1	2	0	3	7	4	0	55	
7:45 AM	3	17	2	0	1	14	0	0	0	1	3	0	4	5	4	0	54	
7:50 AM	4	18	1	0	0	14	0	0	1	3	2	0	3	6	2	0	54	
7:55 AM	2	37	2	0	0	6	0	0	1	3	4	0	4	2	5	0	66	630
8:00 AM	3	33	2	0	1	18	0	0	1	1	2	0	2	3	2	0	68	664
8:05 AM	6	20	1	0	1	11	0	0	3	2	2	0	5	0	3	0	54	674
8:10 AM	3	20	1	0	0	17	4	0	3	3	5	0	1	2	1	0	60	678
8:15 AM	4	19	3	0	1	15	0	0	0	0	2	0	2	1	3	0	50	681
8:20 AM	1	28	1	0	2	17	0	0	0	0	2	0	0	2	1	0	54	678
8:25 AM	2	19	1	0	2	13	1	0	1	0	1	0	1	2	2	0	45	667
8:30 AM	3	20	3	0	0	13	0	0	1	2	2	0	6	5	5	0	60	677
8:35 AM	4	22	2	0	1	14	0	0	1	2	6	0	2	1	3	0	58	678
8:40 AM	1	32	4	0	3	8	0	0	0	1	3	0	3	0	2	0	57	680
8:45 AM	0	24	2	0	0	10	1	0	0	1	2	0	3	4	11	0	58	684
8:50 AM	2	25	1	0	1	15	0	0	0	1	0	0	3	4	3	0	55	685
8:55 AM	5	14	2	0	0	9	0	0	0	0	1	0	4	2	2	0	39	658

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	44	360	20	0	8	140	0	0	20	24	32	0	44	20	40	0	752
Heavy Trucks	8	32	0		0	12	0		4	0	0		0	0	0		56
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

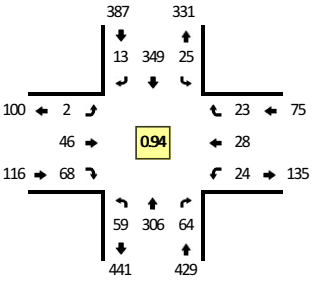
Comments:

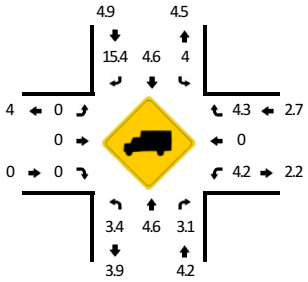
Report generated on 5/16/2023 8:28 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

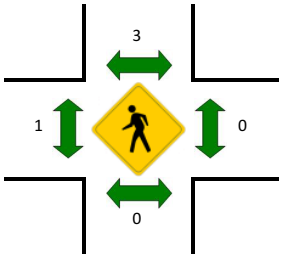
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

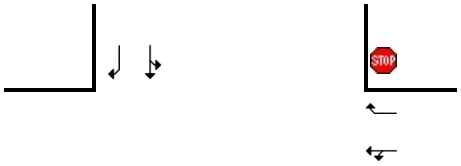
LOCATION: Hwy 211 -- Dubarko Rd | **QC JOB #:** 16204008
CITY/STATE: Sandy, OR | **DATE:** Wed, May 10 2023

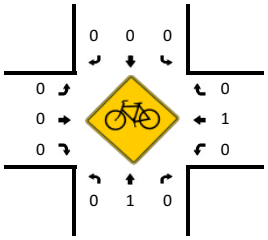
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

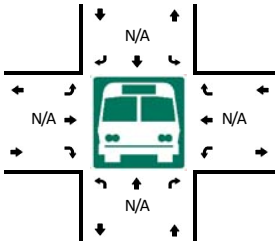


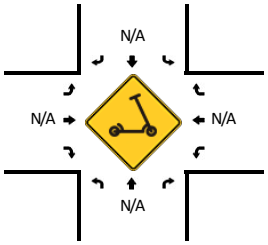












5-Min Count Period Beginning At	Hwy 211 (Northbound)				Hwy 211 (Southbound)				Dubarko Rd (Eastbound)				Dubarko Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	4	21	3	0	3	22	0	0	0	1	2	0	3	5	2	0	66	
4:05 PM	6	15	5	0	1	18	0	0	0	2	0	0	2	3	6	0	58	
4:10 PM	4	32	7	0	1	22	1	0	0	4	2	0	1	0	2	0	76	
4:15 PM	5	19	6	0	1	24	0	0	0	3	2	0	1	4	2	0	67	
4:20 PM	5	25	3	0	2	35	0	0	0	5	2	0	3	3	1	0	84	
4:25 PM	6	11	6	0	1	27	0	0	2	6	3	0	2	0	0	0	64	
4:30 PM	2	23	4	0	2	40	1	0	0	4	4	0	1	1	2	0	84	
4:35 PM	1	18	2	0	6	23	1	0	1	4	2	0	3	3	4	0	68	
4:40 PM	6	22	5	0	2	35	1	0	0	6	7	0	5	3	3	0	95	
4:45 PM	8	27	6	0	1	29	2	0	0	2	4	0	0	2	2	0	83	
4:50 PM	3	33	5	0	5	34	1	0	0	4	2	0	1	1	2	0	91	
4:55 PM	4	18	1	0	1	35	1	0	0	7	9	0	0	3	4	0	83	919
5:00 PM	3	27	10	0	2	32	1	0	0	1	7	0	2	2	1	0	88	941
5:05 PM	3	25	4	0	2	27	0	0	1	5	2	0	2	1	0	0	72	955
5:10 PM	4	17	6	0	4	31	3	0	0	3	7	0	3	2	3	0	83	962
5:15 PM	6	22	1	0	0	24	0	0	0	5	5	0	1	4	0	0	68	963
5:20 PM	5	28	5	0	6	29	1	0	0	6	4	0	5	1	3	0	93	972
5:25 PM	9	24	4	0	0	20	0	0	1	5	4	0	2	2	2	0	73	981
5:30 PM	1	17	6	0	1	32	0	0	0	2	9	0	2	3	1	0	74	971
5:35 PM	7	46	11	0	1	21	3	0	0	0	8	0	1	4	2	0	104	1007
5:40 PM	10	32	3	0	5	24	2	0	1	3	3	0	0	4	0	0	87	999
5:45 PM	5	17	2	0	2	24	1	0	0	3	6	0	6	2	10	0	78	994
5:50 PM	4	26	4	0	0	22	0	0	0	4	3	0	1	1	3	0	68	971
5:55 PM	3	24	4	0	1	23	1	0	1	4	2	0	2	2	4	0	71	959

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	68	328	64	0	32	392	16	0	0	48	52	0	24	24	28	0	1076
Heavy Trucks	0	16	0		4	36	8		0	0	0		0	0	0		64
Buses																	
Pedestrians		0				4				4				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/16/2023 8:28 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

CASCADE CREEK
TRAFFIC IMPACT ANALYSIS

APPENDIX
2. COLLISION HISTORY

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

DUBARKO RD at EAGLE CRK-SANDY HY, City of Sandy, Clackamas County, 01/01/2017 to 12/31/2021

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2021														
ANGLE	0	2	1	3	0	7	0	1	2	2	1	3	0	0
YEAR 2021 TOTAL	**0**	**2**	**1**	**3**	**0**	**7**	**0**	**1**	**2**	**2**	**1**	**3**	**0**	**0**
YEAR: 2020														
ANGLE	0	1	1	2	0	1	0	1	1	2	0	2	0	0
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	1	0	1	0	1	0	1
TURNING MOVEMENTS	0	1	0	1	0	2	0	1	0	1	0	1	0	0
YEAR 2020 TOTAL	**0**	**2**	**2**	**4**	**0**	**3**	**0**	**3**	**1**	**4**	**0**	**4**	**0**	**1**
YEAR: 2019														
ANGLE	0	6	0	6	0	10	1	5	1	2	4	6	0	0
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR 2019 TOTAL	**0**	**6**	**1**	**7**	**0**	**10**	**1**	**6**	**1**	**3**	**4**	**7**	**0**	**0**
YEAR: 2018														
PEDESTRIAN	0	1	0	1	0	1	0	0	1	0	1	1	0	0
REAR-END	0	1	0	1	0	2	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	0	1	1	0	0
YEAR 2018 TOTAL	**0**	**3**	**0**	**3**	**0**	**4**	**0**	**2**	**1**	**1**	**2**	**3**	**0**	**0**
YEAR: 2017														
ANGLE	0	3	2	5	0	6	0	3	2	3	2	5	0	0

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

DUBARKO RD at EAGLE CRK-SANDY HY, City of Sandy, Clackamas County, 01/01/2017 to 12/31/2021

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR 2017 TOTAL	**0**	**4**	**2**	**6**	**0**	**7**	**0**	**4**	**2**	**4**	**2**	**6**	**0**	**0**
FINAL TOTAL	**0**	**17**	**6**	**23**	**0**	**31**	**1**	**16**	**7**	**14**	**9**	**23**	**0**	**1**

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 requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CRASH LOCATION LIST

Highway 172 ALL ROAD TYPES, MP 4.5 to 5.0 01/01/2017 to 12/31/2021, Both Add and Non-Add mileage

Route OR-211, Name: Eagle Creek-Sandy Highway

1 - 1 of 1 Crash records shown.

SERIAL NO	DATE	TIME	DAY	*COUNTY OR CITY NAME	RDWY #	CONT	CONN #	MLGTYP	HWY#	MP#	LRS VALUE	LAT	LONG	COLL TYPE	EVENT	CAUSE	ERROR	SURF	TOT VEH	VEHICLE TYP/OWN #1	VEHICLE TYP/OWN #2	PEOPLE KIL	PEOPLE INJ	PEOPLE OTH	PEOPLE ADL	PEOPLE DRG	PEOPLE SUS	PEOPLE RPT	RD DEP
01322	04/19/2018	8A	TH	*Clackamas	1	MN		R	172	4.60	017200100S00			FIX	079,010	27		DRY	1	010		0	0	N	N	N	Y		

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

VILLAGE BLVD at CASCADIA VILLAGE DR, City of Sandy, Clackamas County, 01/01/2017 to 12/31/2021

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
FINAL TOTAL														

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 requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

VILLAGE BLVD and Intersectional Crashes at VILLAGE BLVD, City of Sandy, Clackamas County, 01/01/2017 to 12/31/2021

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
FINAL TOTAL														

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 requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CASCADE CREEK
TRAFFIC IMPACT ANALYSIS

APPENDIX
3. ITE SHEETS

Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

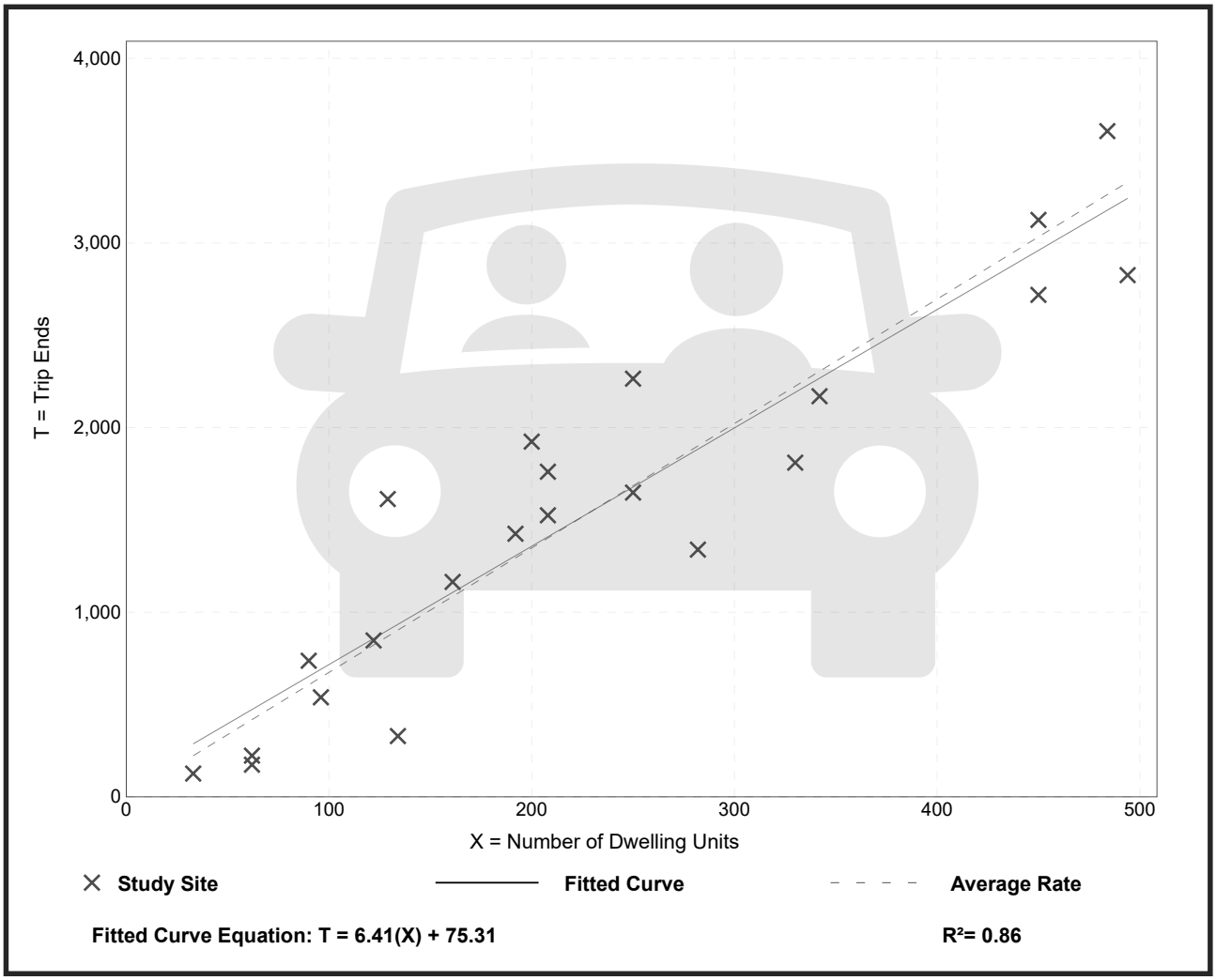
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 22
Avg. Num. of Dwelling Units: 229
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
6.74	2.46 - 12.50	1.79

Data Plot and Equation



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

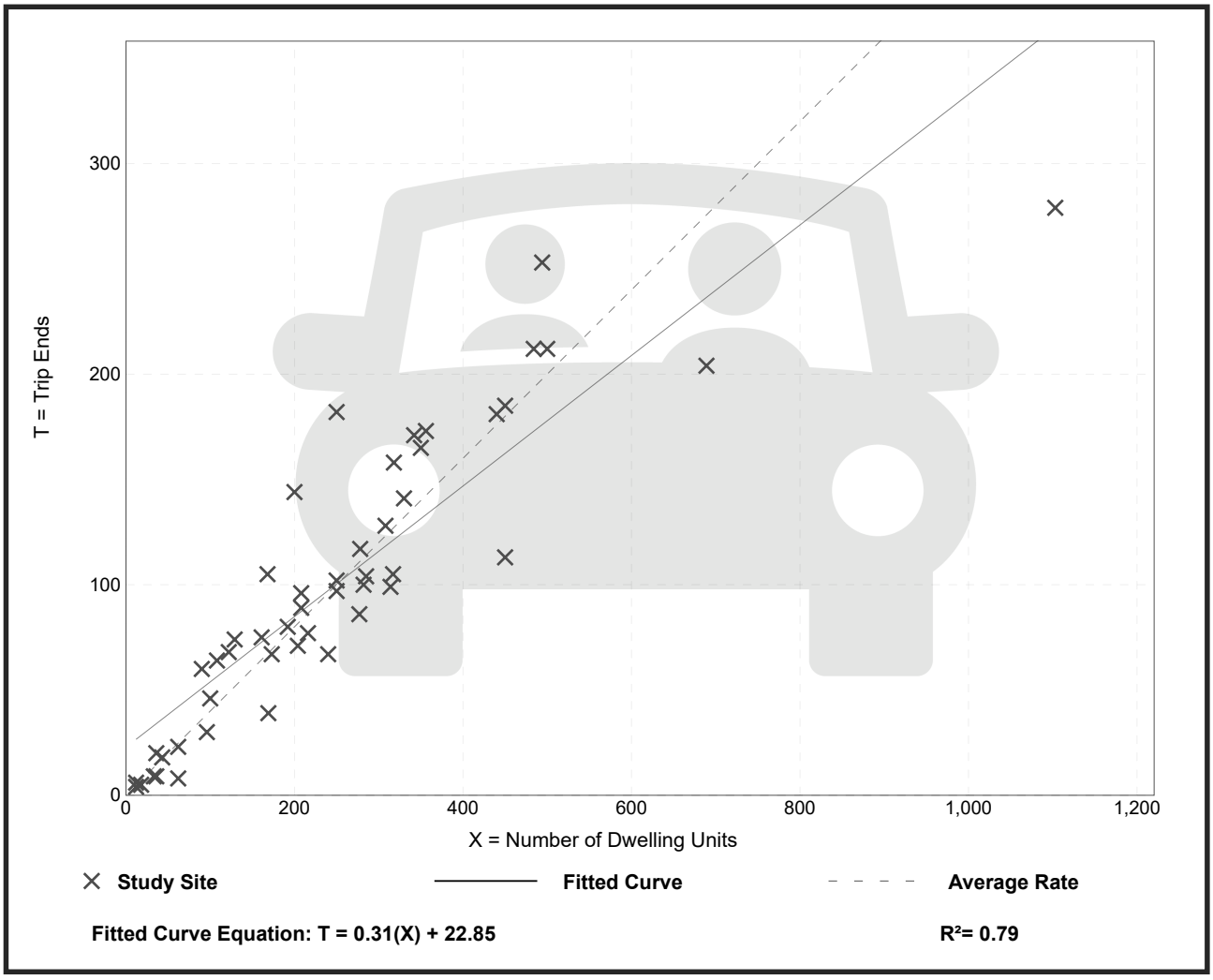
Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 49
Avg. Num. of Dwelling Units: 249
Directional Distribution: 24% entering, 76% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.40	0.13 - 0.73	0.12

Data Plot and Equation



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

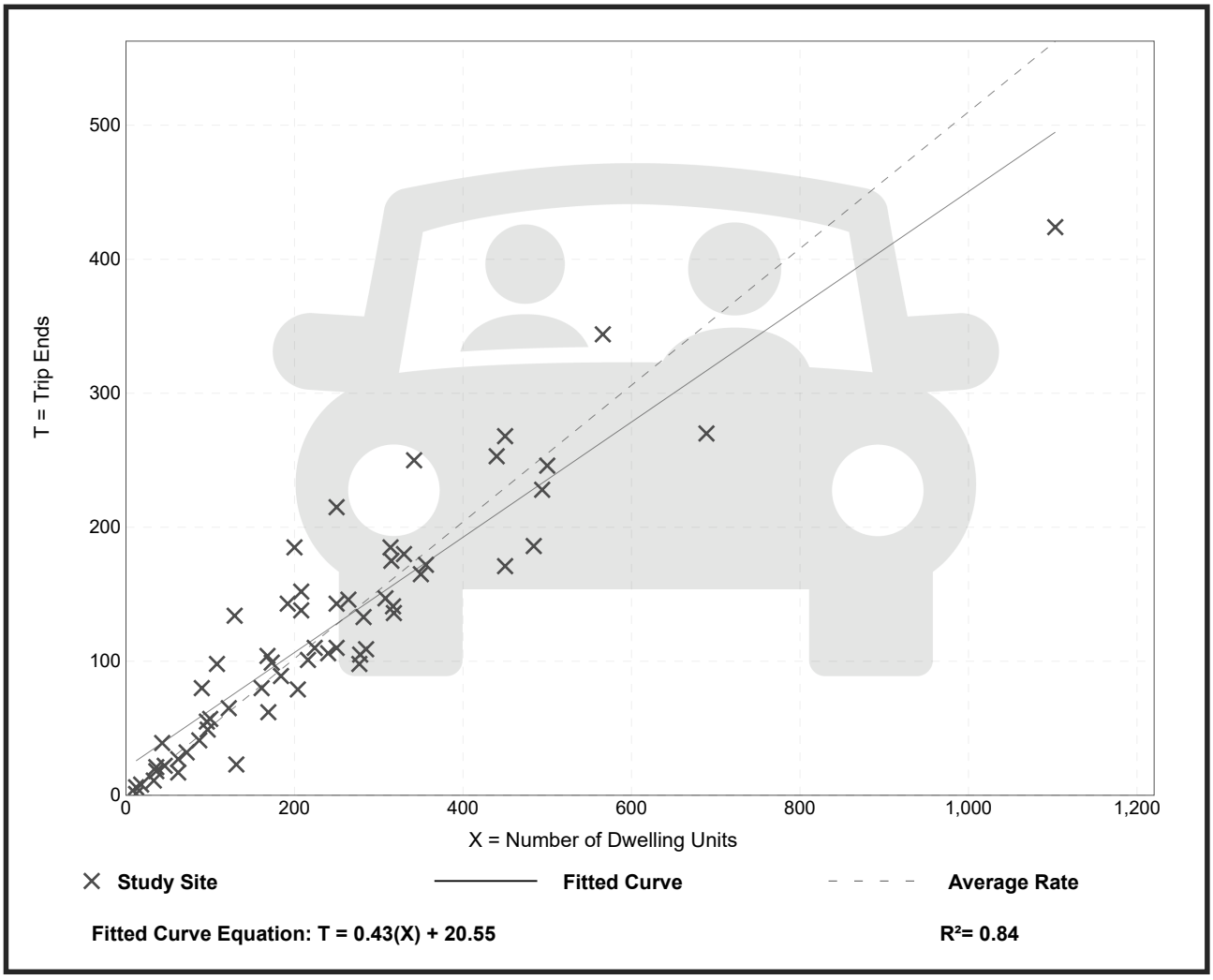
Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 59
Avg. Num. of Dwelling Units: 241
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.51	0.08 - 1.04	0.15

Data Plot and Equation



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Strip Retail Plaza (<40k)
(822)

Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday**

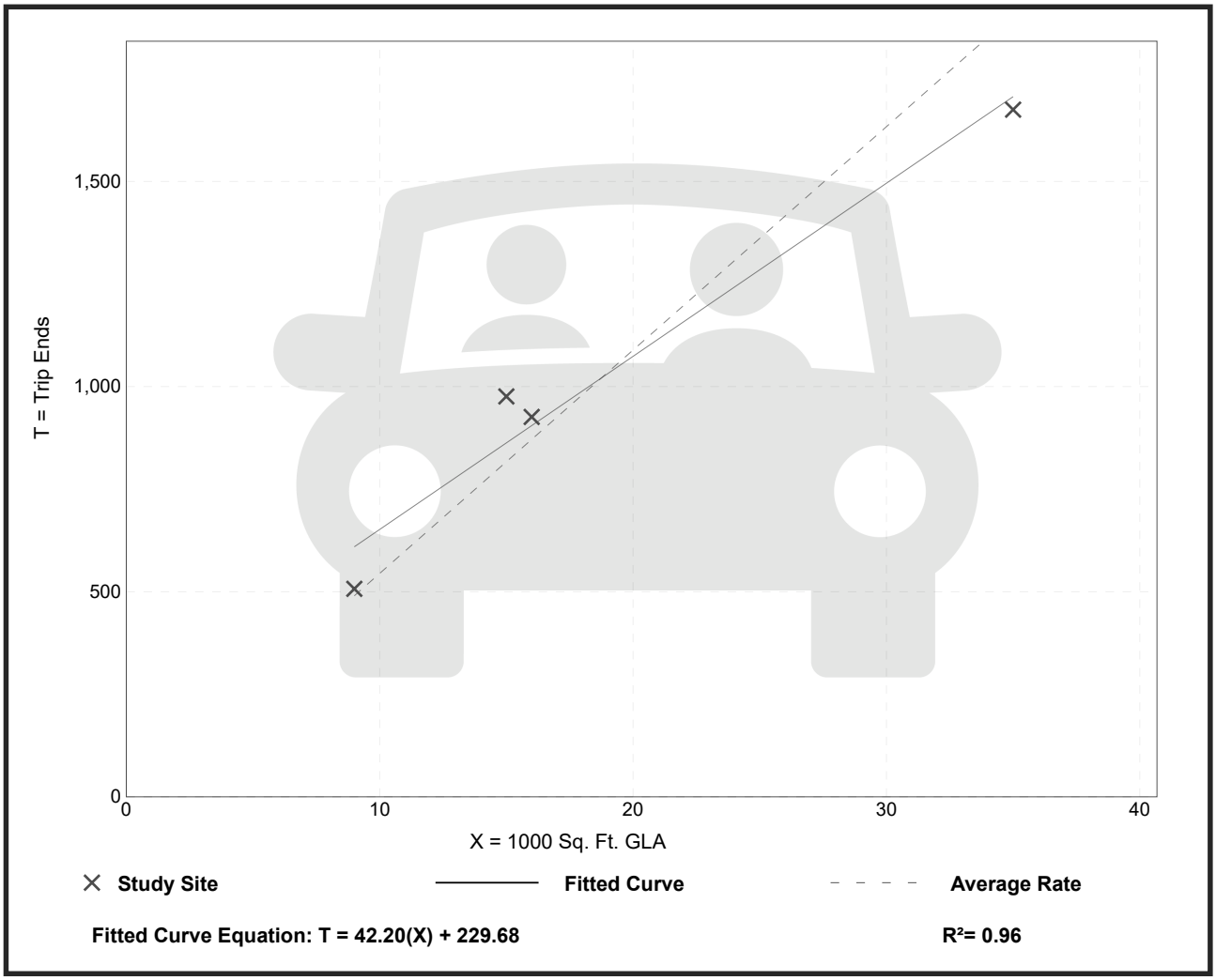
Setting/Location: **General Urban/Suburban**
Number of Studies: 4
Avg. 1000 Sq. Ft. GLA: 19
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
54.45	47.86 - 65.07	7.81

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: T = 42.20(X) + 229.68

R^2= 0.96

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

Strip Retail Plaza (<40k)
(822)

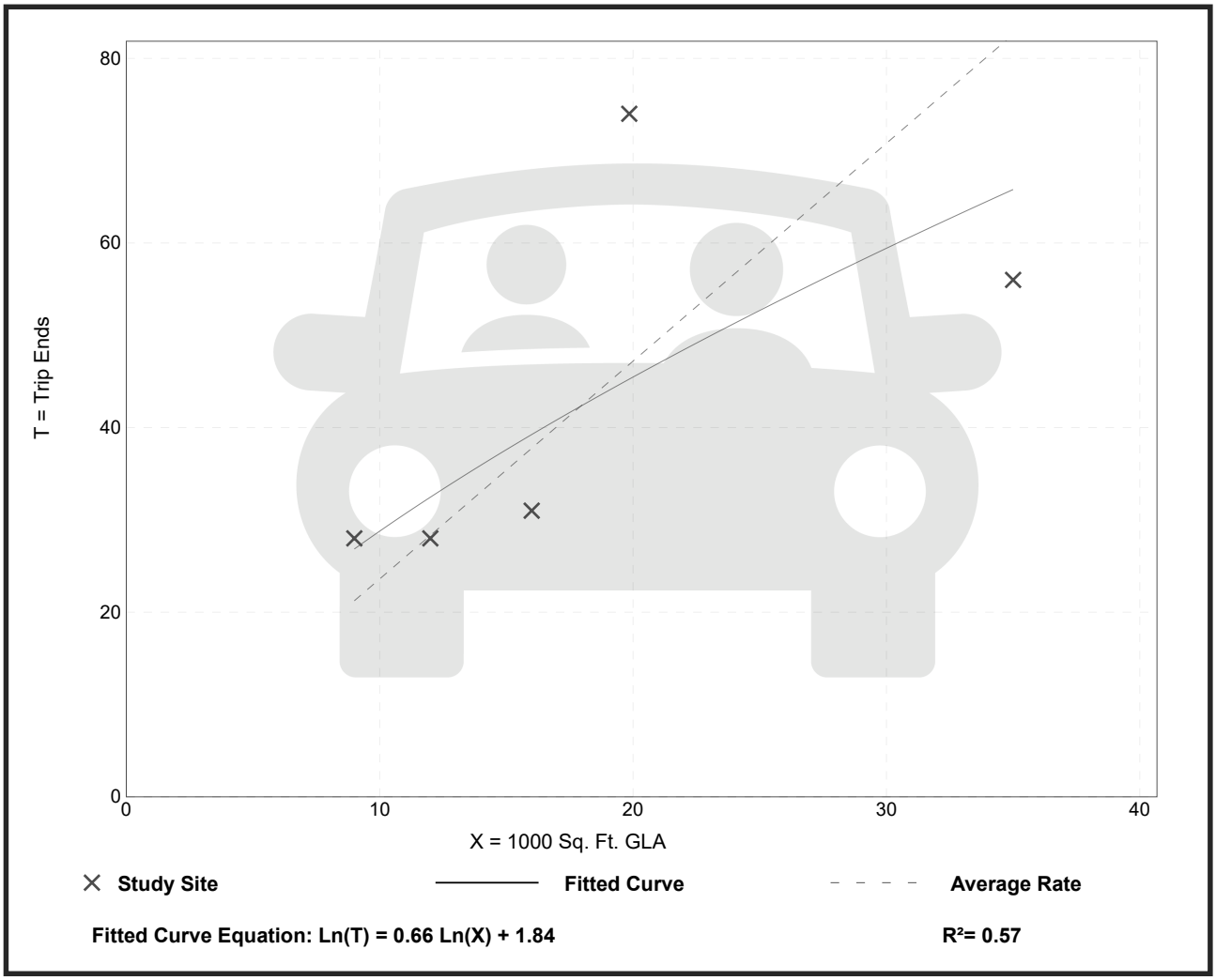
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. 1000 Sq. Ft. GLA: 18
Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
2.36	1.60 - 3.73	0.94

Data Plot and Equation

Caution – Small Sample Size



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

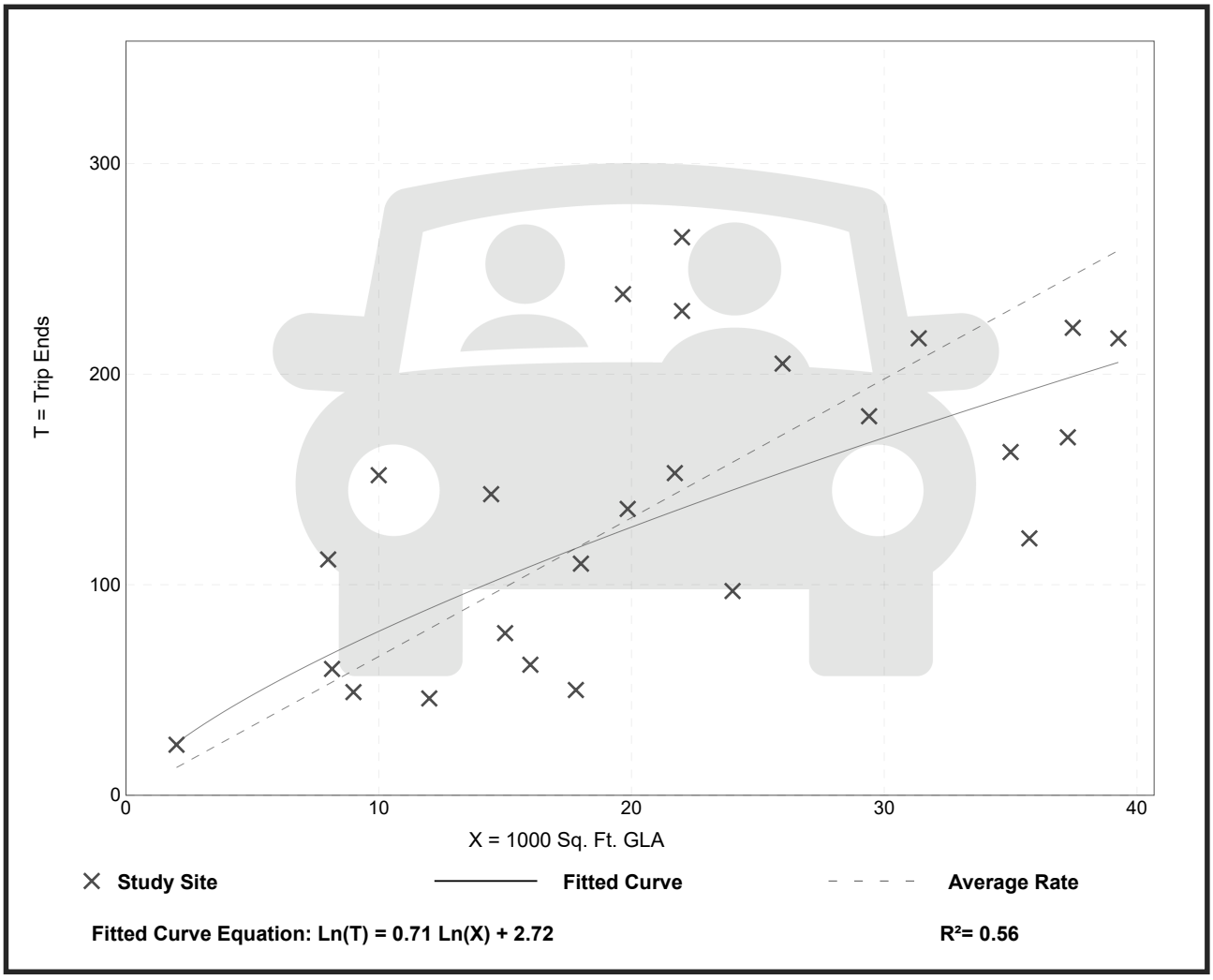
Strip Retail Plaza (<40k)
(822)

Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 25
Avg. 1000 Sq. Ft. GLA: 21
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.59	2.81 - 15.20	2.94

Data Plot and Equation



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

Vehicle Pass-By Rates by Land Use

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

Land Use Code	821
Land Use	Shopping Plaza (40 - 150k)
Setting	General Urban/Suburban
Time Period	Weekday PM Peak Period
# Data Sites	15
Average Pass-By Rate	40%

Pass-By Characteristics for Individual Sites

GLA (000)	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Non-Pass-By Trips			Adj Street Peak Hour Volume	Source
					Primary (%)	Diverted (%)	Total (%)		
45	Florida	1992	844	56	24	20	44	—	30
50	Florida	1992	555	41	41	18	59	—	30
52	Florida	1995	665	42	33	25	58	—	30
53	Florida	1993	162	59	—	—	41	—	30
57.23	Kentucky	1993	247	31	53	16	69	2659	34
60	Florida	1995	1583	40	38	22	60	—	30
69.4	Kentucky	1993	109	25	42	33	75	1559	34
77	Florida	1992	365	46	—	—	54	—	30
78	Florida	1991	702	55	23	22	45	—	30
82	Florida	1992	336	34	—	—	66	—	30
92.857	Kentucky	1993	133	22	50	28	78	3555	34
100.888	Kentucky	1993	281	28	50	22	72	2111	34
121.54	Kentucky	1993	210	53	30	17	47	2636	34
144	New Jersey	1990	176	32	44	24	68	—	24
146.8	Kentucky	1993	—	36	39	25	64	—	34

CASCADE CREEK
TRAFFIC IMPACT ANALYSIS

APPENDIX
4. FORECAST 2025 EXCEL SHEET

Peak Hour Forecast Intersection Volumes

Annual Growth Rate: 2 %
# of Years to Horizon: 2
2025

AM PEAK HOUR

1. Hwy 211 & Dubarko Rd

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	6	157	12	41	26	32	23	299	31	31	16	11
Project Trips	0	9	0	0	0	0	0	15	2	1	0	0
Rerouted	0	0	0	0	0	0	0	0	0	0	0	0
Without	6	163	12	43	27	33	24	311	32	32	17	11
With	6	172	12	43	27	33	24	326	34	33	17	11

2. SE Village Blvd & Hwy 211

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	0	0	0	0	189	6	11	0	14	5	190	0
Project Trips	0	0	0	0	0	13	19	0	15	10	0	0
Rerouted	0	0	0	0	0	0	0	0	0	2	-2	0
Without	0	0	0	0	197	6	11	0	15	5	198	0
With	0	0	0	0	197	19	30	0	30	17	196	0

3. SE Village Blvd & Cascadia Village Dr

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	9	2	0	0	0	0	0	2	0	0	0	18
Project Trips	0	0	23	34	0	0	0	0	0	0	0	0
Rerouted	0	0	2	0	0	0	0	0	0	0	0	0
Without	9	2	0	0	0	0	0	2	0	0	0	19
With	9	2	25	34	0	0	0	2	0	0	0	19

4. Hwy 211 & Gunderson Rd

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	2	227	0	0	0	0	0	163	7	14	0	0
Project Trips	1	12	0	0	0	0	0	6	0	1	0	0
Rerouted	0	0	0	0	0	0	0	2	0	0	0	0
Without	2	236	0	0	0	0	0	170	7	15	0	0
With	3	248	0	0	0	0	0	178	7	16	0	0

PM PEAK HOUR

1. Hwy 211 & Dubarko Rd

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	13	349	25	23	28	24	64	306	59	68	46	2
Project Trips	0	24	0	0	0	0	0	18	2	2	0	0
Rerouted	0	0	0	0	0	0	0	0	0	0	0	0
Without	14	363	26	24	29	25	67	318	61	71	48	2
With	14	387	26	24	29	25	67	336	63	73	48	2

2. SE Village Blvd & Hwy 211

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	1	0	0	0	231	20	18	0	11	16	316	0
Project Trips	0	0	0	0	0	33	28	0	23	29	0	0
Rerouted	0	0	0	0	0	0	0	0	0	8	-8	0
Without	1	0	0	0	240	21	19	0	11	17	329	0
With	1	0	0	0	240	54	47	0	34	54	321	0

3. SE Village Blvd & Cascadia Village Dr

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	23	1	0	0	0	0	0	2	0	0	0	13
Project Trips	0	0	62	51	0	0	0	0	0	0	0	0
Rerouted	0	0	8	0	0	0	0	0	0	0	0	0
Without	24	1	0	0	0	0	0	2	0	0	0	14
With	24	1	70	51	0	0	0	2	0	0	0	14

4. Hwy 211 & Gunderson Rd

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	10	234	0	0	0	0	0	332	9	2	0	8
Project Trips	3	20	0	0	0	0	0	25	0	0	0	3
Rerouted	0	0	0	0	0	0	0	8	0	0	0	0
Without	10	243	0	0	0	0	0	345	9	2	0	8
With	13	263	0	0	0	0	0	378	9	2	0	11

CASCADE CREEK
TRAFFIC IMPACT ANALYSIS

APPENDIX
5. LEVEL OF SERVICE

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	163	227	2	0	14
Future Vol, veh/h	7	163	227	2	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	14	14	6	1	0	14
Mvmt Flow	8	179	249	2	0	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	251	0	-	0	445	250
Stage 1	-	-	-	-	250	-
Stage 2	-	-	-	-	195	-
Critical Hdwy	4.24	-	-	-	6.4	6.34
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.326	-	-	-	3.5	3.426
Pot Cap-1 Maneuver	1248	-	-	-	574	760
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	843	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1248	-	-	-	570	760
Mov Cap-2 Maneuver	-	-	-	-	570	-
Stage 1	-	-	-	-	790	-
Stage 2	-	-	-	-	843	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1248	-	-	-	760
HCM Lane V/C Ratio	0.006	-	-	-	0.02
HCM Control Delay (s)	7.9	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱			↕			↕	
Traffic Vol, veh/h	0	190	5	6	189	0	14	0	11	0	0	0
Future Vol, veh/h	0	190	5	6	189	0	14	0	11	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	375	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	12	20	1	9	2	1	2	9	2	2	2
Mvmt Flow	0	207	5	7	205	0	15	0	12	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	205	0	0	212	0	0	429	429	210	435	431	205
Stage 1	-	-	-	-	-	-	210	210	-	219	219	-
Stage 2	-	-	-	-	-	-	219	219	-	216	212	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.11	6.52	6.29	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.381	3.518	4.018	3.318
Pot Cap-1 Maneuver	1366	-	-	1364	-	-	538	518	813	531	517	836
Stage 1	-	-	-	-	-	-	794	728	-	783	722	-
Stage 2	-	-	-	-	-	-	786	722	-	786	727	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1366	-	-	1364	-	-	536	515	813	521	514	836
Mov Cap-2 Maneuver	-	-	-	-	-	-	536	515	-	521	514	-
Stage 1	-	-	-	-	-	-	794	728	-	783	718	-
Stage 2	-	-	-	-	-	-	782	718	-	774	727	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	11	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	631	1366	-	-	1364	-	-	-
HCM Lane V/C Ratio	0.043	-	-	-	0.005	-	-	-
HCM Control Delay (s)	11	0	-	-	7.7	-	-	0
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	18	0	0	0	0	0	0	2	0	0	2	9
Future Vol, veh/h	18	0	0	0	0	0	0	2	0	0	2	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	92	70	92	92	92	70	70	92	92	70	70
Heavy Vehicles, %	6	2	0	2	2	2	0	50	2	2	50	11
Mvmt Flow	26	0	0	0	0	0	0	3	0	0	3	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	13	13	10	13	19	3	16	0	0	3	0	0
Stage 1	10	10	-	3	3	-	-	-	-	-	-	-
Stage 2	3	3	-	10	16	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.16	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	993	881	1077	1004	875	1081	1615	-	-	1619	-	-
Stage 1	1001	887	-	1020	893	-	-	-	-	-	-	-
Stage 2	1009	893	-	1011	882	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	993	881	1077	1004	875	1081	1615	-	-	1619	-	-
Mov Cap-2 Maneuver	993	881	-	1004	875	-	-	-	-	-	-	-
Stage 1	1001	887	-	1020	893	-	-	-	-	-	-	-
Stage 2	1009	893	-	1011	882	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1615	-	-	993	-	1619	-	-
HCM Lane V/C Ratio	-	-	-	0.026	-	-	-	-
HCM Control Delay (s)	0	-	-	8.7	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	16	31	32	26	41	31	299	23	12	157	6
Future Vol, veh/h	11	16	31	32	26	41	31	299	23	12	157	6
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	80	-	-	110	-	-	-	-	-	315
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	9	6	7	3	4	3	10	11	1	8	10	17
Mvmt Flow	12	18	34	35	29	45	34	329	25	13	173	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	650	625	177	643	620	346	182	0	0	356	0	0
Stage 1	201	201	-	412	412	-	-	-	-	-	-	-
Stage 2	449	424	-	231	208	-	-	-	-	-	-	-
Critical Hdwy	7.19	6.56	6.27	7.13	6.54	6.23	4.2	-	-	4.18	-	-
Critical Hdwy Stg 1	6.19	5.56	-	6.13	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.19	5.56	-	6.13	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.581	4.054	3.363	3.527	4.036	3.327	2.29	-	-	2.272	-	-
Pot Cap-1 Maneuver	373	396	853	385	401	695	1346	-	-	1170	-	-
Stage 1	785	727	-	615	591	-	-	-	-	-	-	-
Stage 2	576	580	-	770	726	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	317	377	850	343	382	693	1344	-	-	1168	-	-
Mov Cap-2 Maneuver	317	377	-	343	382	-	-	-	-	-	-	-
Stage 1	758	717	-	594	571	-	-	-	-	-	-	-
Stage 2	494	560	-	711	716	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	14.5	0.7	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1344	-	-	350	850	359	693	1168	-	-
HCM Lane V/C Ratio	0.025	-	-	0.085	0.04	0.178	0.065	0.011	-	-
HCM Control Delay (s)	7.7	0	-	16.2	9.4	17.2	10.6	8.1	0	-
HCM Lane LOS	A	A	-	C	A	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0.6	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	332	234	10	8	2
Future Vol, veh/h	9	332	234	10	8	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	4	5	1	1	1
Mvmt Flow	10	361	254	11	9	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	265	0	-	0	641	260
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	381	-
Critical Hdwy	4.11	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1305	-	-	-	441	781
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	693	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1305	-	-	-	437	781
Mov Cap-2 Maneuver	-	-	-	-	437	-
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	693	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1305	-	-	-	479
HCM Lane V/C Ratio	0.007	-	-	-	0.023
HCM Control Delay (s)	7.8	0	-	-	12.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↑			↕			↕	
Traffic Vol, veh/h	0	316	16	20	231	0	11	0	18	0	0	1
Future Vol, veh/h	0	316	16	20	231	0	11	0	18	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	375	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	95	95	95	95	92	95	92	95	92	92	92
Heavy Vehicles, %	2	12	20	1	9	2	1	2	9	2	2	2
Mvmt Flow	0	333	17	21	243	0	12	0	19	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	243	0	0	350	0	0	628	627	342	636	635	243
Stage 1	-	-	-	-	-	-	342	342	-	285	285	-
Stage 2	-	-	-	-	-	-	286	285	-	351	350	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.11	6.52	6.29	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.381	3.518	4.018	3.318
Pot Cap-1 Maneuver	1323	-	-	1214	-	-	397	400	685	391	396	796
Stage 1	-	-	-	-	-	-	675	638	-	722	676	-
Stage 2	-	-	-	-	-	-	724	676	-	666	633	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1323	-	-	1214	-	-	391	393	685	375	389	796
Mov Cap-2 Maneuver	-	-	-	-	-	-	391	393	-	375	389	-
Stage 1	-	-	-	-	-	-	675	638	-	722	665	-
Stage 2	-	-	-	-	-	-	711	665	-	648	633	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	12.2	9.5
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	533	1323	-	-	1214	-	-	796
HCM Lane V/C Ratio	0.057	-	-	-	0.017	-	-	0.001
HCM Control Delay (s)	12.2	0	-	-	8	-	-	9.5
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	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	13	0	0	0	0	0	0	2	0	0	1	23
Future Vol, veh/h	13	0	0	0	0	0	0	2	0	0	1	23
Conflicting Peds, #/hr	1	0	1	0	0	0	1	0	0	0	0	1
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	70	92	70	92	92	92	70	70	92	92	70	70
Heavy Vehicles, %	8	2	0	2	2	2	0	1	2	2	1	1
Mvmt Flow	19	0	0	0	0	0	0	3	0	0	1	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	23	22	20	22	38	4	35	0	0	3	0	0
Stage 1	19	19	-	3	3	-	-	-	-	-	-	-
Stage 2	4	3	-	19	35	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.18	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	974	872	1064	990	854	1080	1589	-	-	1619	-	-
Stage 1	985	880	-	1020	893	-	-	-	-	-	-	-
Stage 2	1003	893	-	1000	866	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	972	871	1062	989	853	1079	1587	-	-	1619	-	-
Mov Cap-2 Maneuver	972	871	-	989	853	-	-	-	-	-	-	-
Stage 1	984	879	-	1020	893	-	-	-	-	-	-	-
Stage 2	1002	893	-	999	865	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1587	-	-	972	-	1619	-	-
HCM Lane V/C Ratio	-	-	-	0.019	-	-	-	-
HCM Control Delay (s)	0	-	-	8.8	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	46	68	24	28	23	59	306	64	25	349	13
Future Vol, veh/h	2	46	68	24	28	23	59	306	64	25	349	13
Conflicting Peds, #/hr	3	0	3	3	0	3	3	0	3	3	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	80	-	-	110	-	-	-	-	-	315
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	4	1	4	3	5	3	4	5	15
Mvmt Flow	2	49	72	26	30	24	63	326	68	27	371	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	944	951	377	985	931	366	388	0	0	397	0	0
Stage 1	428	428	-	489	489	-	-	-	-	-	-	-
Stage 2	516	523	-	496	442	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.14	6.51	6.24	4.13	-	-	4.14	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.14	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.14	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.536	4.009	3.336	2.227	-	-	2.236	-	-
Pot Cap-1 Maneuver	243	261	672	225	268	675	1165	-	-	1151	-	-
Stage 1	607	586	-	557	551	-	-	-	-	-	-	-
Stage 2	544	532	-	552	578	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	195	234	668	155	240	671	1162	-	-	1148	-	-
Mov Cap-2 Maneuver	195	234	-	155	240	-	-	-	-	-	-	-
Stage 1	563	567	-	517	511	-	-	-	-	-	-	-
Stage 2	458	493	-	435	559	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.7	24.9	1.1	0.5
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1162	-	-	232	668	192	671	1148	-	-
HCM Lane V/C Ratio	0.054	-	-	0.22	0.108	0.288	0.036	0.023	-	-
HCM Control Delay (s)	8.3	0	-	24.8	11	31.2	10.6	8.2	0	-
HCM Lane LOS	A	A	-	C	B	D	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.8	0.4	1.1	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	170	236	2	0	15
Future Vol, veh/h	7	170	236	2	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	14	14	6	1	0	14
Mvmt Flow	8	187	259	2	0	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	261	0	-	0	463	260
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	203	-
Critical Hdwy	4.24	-	-	-	6.4	6.34
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.326	-	-	-	3.5	3.426
Pot Cap-1 Maneuver	1237	-	-	-	561	750
Stage 1	-	-	-	-	788	-
Stage 2	-	-	-	-	836	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1237	-	-	-	557	750
Mov Cap-2 Maneuver	-	-	-	-	557	-
Stage 1	-	-	-	-	782	-
Stage 2	-	-	-	-	836	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1237	-	-	-	750
HCM Lane V/C Ratio	0.006	-	-	-	0.022
HCM Control Delay (s)	7.9	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↑			↕			↕	
Traffic Vol, veh/h	0	198	5	6	197	0	15	0	11	0	0	0
Future Vol, veh/h	0	198	5	6	197	0	15	0	11	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	375	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	12	20	1	9	2	1	2	9	2	2	2
Mvmt Flow	0	215	5	7	214	0	16	0	12	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	214	0	0	220	0	0	446	446	218	452	448	214
Stage 1	-	-	-	-	-	-	218	218	-	228	228	-
Stage 2	-	-	-	-	-	-	228	228	-	224	220	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.11	6.52	6.29	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.381	3.518	4.018	3.318
Pot Cap-1 Maneuver	1356	-	-	1355	-	-	524	507	805	518	506	826
Stage 1	-	-	-	-	-	-	787	723	-	775	715	-
Stage 2	-	-	-	-	-	-	777	715	-	779	721	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1356	-	-	1355	-	-	522	504	805	508	503	826
Mov Cap-2 Maneuver	-	-	-	-	-	-	522	504	-	508	503	-
Stage 1	-	-	-	-	-	-	787	723	-	775	711	-
Stage 2	-	-	-	-	-	-	773	711	-	767	721	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	11.2	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	613	1356	-	-	1355	-	-	-
HCM Lane V/C Ratio	0.046	-	-	-	0.005	-	-	-
HCM Control Delay (s)	11.2	0	-	-	7.7	-	-	0
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	0	0	2	2	9
Future Vol, veh/h	19	0	0	2	2	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	6	0	0	50	50	11
Mvmt Flow	27	0	0	3	3	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	13	10	16	0	-	0
Stage 1	10	-	-	-	-	-
Stage 2	3	-	-	-	-	-
Critical Hdwy	6.46	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	996	1077	1615	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	1010	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	996	1077	1615	-	-	-
Mov Cap-2 Maneuver	996	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	1010	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1615	-	996	-	-
HCM Lane V/C Ratio	-	-	0.027	-	-
HCM Control Delay (s)	0	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	17	32	33	27	43	32	311	24	12	163	6
Future Vol, veh/h	11	17	32	33	27	43	32	311	24	12	163	6
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	80	-	-	110	-	-	-	-	-	315
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	9	6	7	3	4	3	10	11	1	8	10	17
Mvmt Flow	12	19	35	36	30	47	35	342	26	13	179	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	673	647	183	665	641	359	188	0	0	370	0	0
Stage 1	207	207	-	427	427	-	-	-	-	-	-	-
Stage 2	466	440	-	238	214	-	-	-	-	-	-	-
Critical Hdwy	7.19	6.56	6.27	7.13	6.54	6.23	4.2	-	-	4.18	-	-
Critical Hdwy Stg 1	6.19	5.56	-	6.13	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.19	5.56	-	6.13	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.581	4.054	3.363	3.527	4.036	3.327	2.29	-	-	2.272	-	-
Pot Cap-1 Maneuver	360	385	847	372	390	683	1339	-	-	1156	-	-
Stage 1	779	723	-	604	582	-	-	-	-	-	-	-
Stage 2	564	571	-	763	722	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	303	366	844	330	371	681	1337	-	-	1154	-	-
Mov Cap-2 Maneuver	303	366	-	330	371	-	-	-	-	-	-	-
Stage 1	752	712	-	583	562	-	-	-	-	-	-	-
Stage 2	480	551	-	702	711	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.9	14.8	0.7	0.5
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1337	-	-	338	844	347	681	1154	-	-
HCM Lane V/C Ratio	0.026	-	-	0.091	0.042	0.19	0.069	0.011	-	-
HCM Control Delay (s)	7.8	0	-	16.7	9.5	17.8	10.7	8.2	0	-
HCM Lane LOS	A	A	-	C	A	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0.7	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	345	243	10	8	2
Future Vol, veh/h	9	345	243	10	8	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	4	5	1	1	1
Mvmt Flow	10	375	264	11	9	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	275	0	-	0	665	270
Stage 1	-	-	-	-	270	-
Stage 2	-	-	-	-	395	-
Critical Hdwy	4.11	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1294	-	-	-	427	771
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1294	-	-	-	423	771
Mov Cap-2 Maneuver	-	-	-	-	423	-
Stage 1	-	-	-	-	770	-
Stage 2	-	-	-	-	683	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1294	-	-	-	465
HCM Lane V/C Ratio	0.008	-	-	-	0.023
HCM Control Delay (s)	7.8	0	-	-	12.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↑			↕			↕	
Traffic Vol, veh/h	0	329	17	21	240	0	11	0	19	0	0	1
Future Vol, veh/h	0	329	17	21	240	0	11	0	19	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	375	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	12	20	1	9	2	1	2	9	2	2	2
Mvmt Flow	0	346	18	22	253	0	12	0	20	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	253	0	0	364	0	0	653	652	355	662	661	253
Stage 1	-	-	-	-	-	-	355	355	-	297	297	-
Stage 2	-	-	-	-	-	-	298	297	-	365	364	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.11	6.52	6.29	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.381	3.518	4.018	3.318
Pot Cap-1 Maneuver	1312	-	-	1200	-	-	382	387	673	375	383	786
Stage 1	-	-	-	-	-	-	664	630	-	712	668	-
Stage 2	-	-	-	-	-	-	713	668	-	654	624	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1312	-	-	1200	-	-	376	380	673	359	376	786
Mov Cap-2 Maneuver	-	-	-	-	-	-	376	380	-	359	376	-
Stage 1	-	-	-	-	-	-	664	630	-	712	656	-
Stage 2	-	-	-	-	-	-	699	656	-	635	624	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	12.3	9.6
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	522	1312	-	-	1200	-	-	786
HCM Lane V/C Ratio	0.06	-	-	-	0.018	-	-	0.001
HCM Control Delay (s)	12.3	0	-	-	8.1	-	-	9.6
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	0	0	2	1	24
Future Vol, veh/h	14	0	0	2	1	24
Conflicting Peds, #/hr	1	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	8	0	0	1	1	1
Mvmt Flow	20	0	0	3	1	34

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	23	20	36	0	-	0
Stage 1	19	-	-	-	-	-
Stage 2	4	-	-	-	-	-
Critical Hdwy	6.48	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	978	1064	1588	-	-	-
Stage 1	988	-	-	-	-	-
Stage 2	1004	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	976	1062	1587	-	-	-
Mov Cap-2 Maneuver	976	-	-	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	1003	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1587	-	976	-	-
HCM Lane V/C Ratio	-	-	0.02	-	-
HCM Control Delay (s)	0	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	48	71	25	29	24	61	318	67	26	363	14
Future Vol, veh/h	2	48	71	25	29	24	61	318	67	26	363	14
Conflicting Peds, #/hr	3	0	3	3	0	3	3	0	3	3	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	80	-	-	110	-	-	-	-	-	315
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	4	1	4	3	5	3	4	5	15
Mvmt Flow	2	51	76	27	31	26	65	338	71	28	386	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	980	987	392	1023	967	380	404	0	0	412	0	0
Stage 1	445	445	-	507	507	-	-	-	-	-	-	-
Stage 2	535	542	-	516	460	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.14	6.51	6.24	4.13	-	-	4.14	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.14	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.14	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.536	4.009	3.336	2.227	-	-	2.236	-	-
Pot Cap-1 Maneuver	230	248	659	212	255	663	1149	-	-	1136	-	-
Stage 1	594	576	-	544	541	-	-	-	-	-	-	-
Stage 2	531	522	-	538	568	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	182	221	656	142	227	660	1146	-	-	1133	-	-
Mov Cap-2 Maneuver	182	221	-	142	227	-	-	-	-	-	-	-
Stage 1	549	556	-	503	499	-	-	-	-	-	-	-
Stage 2	442	482	-	417	548	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.6	27.2	1.1	0.5
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1146	-	-	219	656	178	660	1133	-	-
HCM Lane V/C Ratio	0.057	-	-	0.243	0.115	0.323	0.039	0.024	-	-
HCM Control Delay (s)	8.3	0	-	26.6	11.2	34.6	10.7	8.3	0	-
HCM Lane LOS	A	A	-	D	B	D	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.9	0.4	1.3	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	178	248	3	0	16
Future Vol, veh/h	7	178	248	3	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	14	14	6	1	0	14
Mvmt Flow	8	196	273	3	0	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	276	0	-	0	487	275
Stage 1	-	-	-	-	275	-
Stage 2	-	-	-	-	212	-
Critical Hdwy	4.24	-	-	-	6.4	6.34
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.326	-	-	-	3.5	3.426
Pot Cap-1 Maneuver	1221	-	-	-	543	736
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	828	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1221	-	-	-	539	736
Mov Cap-2 Maneuver	-	-	-	-	539	-
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	828	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1221	-	-	-	736
HCM Lane V/C Ratio	0.006	-	-	-	0.024
HCM Control Delay (s)	8	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	196	17	19	197	0	30	0	30	0	0	0
Future Vol, veh/h	0	196	17	19	197	0	30	0	30	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	375	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	12	20	1	9	2	1	2	9	2	2	2
Mvmt Flow	0	213	18	21	214	0	33	0	33	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	214	0	0	231	0	0	478	478	222	495	487	214
Stage 1	-	-	-	-	-	-	222	222	-	256	256	-
Stage 2	-	-	-	-	-	-	256	256	-	239	231	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.11	6.52	6.29	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.381	3.518	4.018	3.318
Pot Cap-1 Maneuver	1356	-	-	1343	-	-	499	486	800	485	481	826
Stage 1	-	-	-	-	-	-	783	720	-	749	696	-
Stage 2	-	-	-	-	-	-	751	696	-	764	713	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1356	-	-	1343	-	-	493	478	800	460	473	826
Mov Cap-2 Maneuver	-	-	-	-	-	-	493	478	-	460	473	-
Stage 1	-	-	-	-	-	-	783	720	-	749	685	-
Stage 2	-	-	-	-	-	-	739	685	-	733	713	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	11.6	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	610	1356	-	-	1343	-	-	-
HCM Lane V/C Ratio	0.107	-	-	-	0.015	-	-	-
HCM Control Delay (s)	11.6	0	-	-	7.7	-	-	0
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	0	0	0	0	34	0	2	0	25	2	9
Future Vol, veh/h	19	0	0	0	0	34	0	2	0	25	2	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	6	2	0	2	2	2	0	50	2	2	50	11
Mvmt Flow	27	0	0	0	0	49	0	3	0	36	3	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	110	85	10	85	91	3	16	0	0	3	0	0
Stage 1	82	82	-	3	3	-	-	-	-	-	-	-
Stage 2	28	3	-	82	88	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.16	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	859	805	1077	901	799	1081	1615	-	-	1619	-	-
Stage 1	916	827	-	1020	893	-	-	-	-	-	-	-
Stage 2	979	893	-	926	822	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	807	787	1077	886	781	1081	1615	-	-	1619	-	-
Mov Cap-2 Maneuver	807	787	-	886	781	-	-	-	-	-	-	-
Stage 1	916	809	-	1020	893	-	-	-	-	-	-	-
Stage 2	935	893	-	906	804	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	8.5	0	5.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1615	-	-	807	1081	1619	-	-
HCM Lane V/C Ratio	-	-	-	0.034	0.045	0.022	-	-
HCM Control Delay (s)	0	-	-	9.6	8.5	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	17	33	33	27	43	34	326	24	12	172	6
Future Vol, veh/h	11	17	33	33	27	43	34	326	24	12	172	6
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	80	-	-	110	-	-	-	-	-	315
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	9	6	7	3	4	3	10	11	1	8	10	17
Mvmt Flow	12	19	36	36	30	47	37	358	26	13	189	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	703	677	193	695	671	375	198	0	0	386	0	0
Stage 1	217	217	-	447	447	-	-	-	-	-	-	-
Stage 2	486	460	-	248	224	-	-	-	-	-	-	-
Critical Hdwy	7.19	6.56	6.27	7.13	6.54	6.23	4.2	-	-	4.18	-	-
Critical Hdwy Stg 1	6.19	5.56	-	6.13	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.19	5.56	-	6.13	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.581	4.054	3.363	3.527	4.036	3.327	2.29	-	-	2.272	-	-
Pot Cap-1 Maneuver	343	370	836	355	375	669	1328	-	-	1140	-	-
Stage 1	770	716	-	589	570	-	-	-	-	-	-	-
Stage 2	550	559	-	754	715	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	286	351	833	313	356	667	1326	-	-	1138	-	-
Mov Cap-2 Maneuver	286	351	-	313	356	-	-	-	-	-	-	-
Stage 1	741	705	-	567	548	-	-	-	-	-	-	-
Stage 2	465	538	-	692	704	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.1	15.3	0.7	0.5
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1326	-	-	322	833	331	667	1138	-	-
HCM Lane V/C Ratio	0.028	-	-	0.096	0.044	0.199	0.071	0.012	-	-
HCM Control Delay (s)	7.8	0	-	17.4	9.5	18.6	10.8	8.2	0	-
HCM Lane LOS	A	A	-	C	A	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0.7	0.2	0	-	-

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	2	4	0	0	0	14	0	0	0	0	20
Future Vol, veh/h	19	2	4	0	0	0	14	0	0	0	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	2	4	0	0	0	15	0	0	0	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	6	0	0	58	47	4	47	49	1
Stage 1	-	-	-	-	-	-	46	46	-	1	1	-
Stage 2	-	-	-	-	-	-	12	1	-	46	48	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1615	-	-	939	845	1080	954	843	1084
Stage 1	-	-	-	-	-	-	968	857	-	1022	895	-
Stage 2	-	-	-	-	-	-	1009	895	-	968	855	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1615	-	-	911	834	1080	944	832	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	911	834	-	944	832	-
Stage 1	-	-	-	-	-	-	955	846	-	1009	895	-
Stage 2	-	-	-	-	-	-	989	895	-	955	844	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.5	0	9	8.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	911	1622	-	-	1615	-	-	1084
HCM Lane V/C Ratio	0.017	0.013	-	-	-	-	-	0.02
HCM Control Delay (s)	9	7.2	0	-	0	-	-	8.4
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	378	263	13	11	2
Future Vol, veh/h	9	378	263	13	11	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	4	5	1	1	1
Mvmt Flow	10	411	286	14	12	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	300	0	-	0	724	293
Stage 1	-	-	-	-	293	-
Stage 2	-	-	-	-	431	-
Critical Hdwy	4.11	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1267	-	-	-	394	749
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	657	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1267	-	-	-	390	749
Mov Cap-2 Maneuver	-	-	-	-	390	-
Stage 1	-	-	-	-	751	-
Stage 2	-	-	-	-	657	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1267	-	-	-	421
HCM Lane V/C Ratio	0.008	-	-	-	0.034
HCM Control Delay (s)	7.9	0	-	-	13.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↑			↕			↕	
Traffic Vol, veh/h	0	321	54	54	240	0	34	0	47	0	0	1
Future Vol, veh/h	0	321	54	54	240	0	34	0	47	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	375	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	12	20	1	9	2	1	2	9	2	2	2
Mvmt Flow	0	338	57	57	253	0	36	0	49	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	253	0	0	395	0	0	735	734	367	758	762	253
Stage 1	-	-	-	-	-	-	367	367	-	367	367	-
Stage 2	-	-	-	-	-	-	368	367	-	391	395	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.11	6.52	6.29	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.381	3.518	4.018	3.318
Pot Cap-1 Maneuver	1312	-	-	1169	-	-	337	347	663	324	335	786
Stage 1	-	-	-	-	-	-	655	622	-	653	622	-
Stage 2	-	-	-	-	-	-	654	622	-	633	605	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1312	-	-	1169	-	-	324	330	663	289	319	786
Mov Cap-2 Maneuver	-	-	-	-	-	-	324	330	-	289	319	-
Stage 1	-	-	-	-	-	-	655	622	-	653	592	-
Stage 2	-	-	-	-	-	-	621	592	-	586	605	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.5	14.6	9.6
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	461	1312	-	-	1169	-	-	786
HCM Lane V/C Ratio	0.185	-	-	-	0.049	-	-	0.001
HCM Control Delay (s)	14.6	0	-	-	8.2	-	-	9.6
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.7	0	-	-	0.2	-	-	0

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	0	0	0	0	51	0	2	0	70	1	24
Future Vol, veh/h	14	0	0	0	0	51	0	2	0	70	1	24
Conflicting Peds, #/hr	1	0	1	0	0	0	1	0	0	0	0	1
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	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	8	2	0	2	2	2	0	1	2	2	1	1
Mvmt Flow	20	0	0	0	0	73	0	3	0	100	1	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	260	222	20	222	239	4	36	0	0	3	0	0
Stage 1	219	219	-	3	3	-	-	-	-	-	-	-
Stage 2	41	3	-	219	236	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.18	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	681	677	1064	734	662	1080	1588	-	-	1619	-	-
Stage 1	770	722	-	1020	893	-	-	-	-	-	-	-
Stage 2	959	893	-	783	710	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	603	634	1062	698	620	1079	1586	-	-	1619	-	-
Mov Cap-2 Maneuver	603	634	-	698	620	-	-	-	-	-	-	-
Stage 1	769	676	-	1020	893	-	-	-	-	-	-	-
Stage 2	894	893	-	733	665	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.2	8.6	0	5.4
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1586	-	-	603	1079	1619	-	-
HCM Lane V/C Ratio	-	-	-	0.033	0.068	0.062	-	-
HCM Control Delay (s)	0	-	-	11.2	8.6	7.4	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.2	-	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	48	73	25	29	24	63	336	67	26	387	14
Future Vol, veh/h	2	48	73	25	29	24	63	336	67	26	387	14
Conflicting Peds, #/hr	3	0	3	3	0	3	3	0	3	3	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	80	-	-	110	-	-	-	-	-	315
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	4	1	4	3	5	3	4	5	15
Mvmt Flow	2	51	78	27	31	26	67	357	71	28	412	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1029	1036	418	1073	1016	399	430	0	0	431	0	0
Stage 1	471	471	-	530	530	-	-	-	-	-	-	-
Stage 2	558	565	-	543	486	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.14	6.51	6.24	4.13	-	-	4.14	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.14	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.14	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.536	4.009	3.336	2.227	-	-	2.236	-	-
Pot Cap-1 Maneuver	213	232	637	196	239	646	1124	-	-	1118	-	-
Stage 1	575	561	-	529	528	-	-	-	-	-	-	-
Stage 2	516	510	-	520	553	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	166	205	634	127	212	643	1121	-	-	1115	-	-
Mov Cap-2 Maneuver	166	205	-	127	212	-	-	-	-	-	-	-
Stage 1	528	541	-	486	485	-	-	-	-	-	-	-
Stage 2	426	468	-	399	533	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.6	30.3	1.1	0.5
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1121	-	-	203	634	162	643	1115	-	-
HCM Lane V/C Ratio	0.06	-	-	0.262	0.122	0.355	0.04	0.025	-	-
HCM Control Delay (s)	8.4	0	-	28.9	11.5	39	10.8	8.3	0	-
HCM Lane LOS	A	A	-	D	B	E	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1	0.4	1.5	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	47	8	15	0	0	0	9	0	0	0	0	42
Future Vol, veh/h	47	8	15	0	0	0	9	0	0	0	0	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	9	16	0	0	0	10	0	0	0	0	46

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	25	0	0	143	120	17	120	128	1
Stage 1	-	-	-	-	-	-	119	119	-	1	1	-
Stage 2	-	-	-	-	-	-	24	1	-	119	127	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1589	-	-	826	770	1062	855	763	1084
Stage 1	-	-	-	-	-	-	885	797	-	1022	895	-
Stage 2	-	-	-	-	-	-	994	895	-	885	791	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1589	-	-	771	745	1062	834	739	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	771	745	-	834	739	-
Stage 1	-	-	-	-	-	-	857	771	-	989	895	-
Stage 2	-	-	-	-	-	-	952	895	-	857	766	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.9	0	9.7	8.5
HCM LOS			A	A

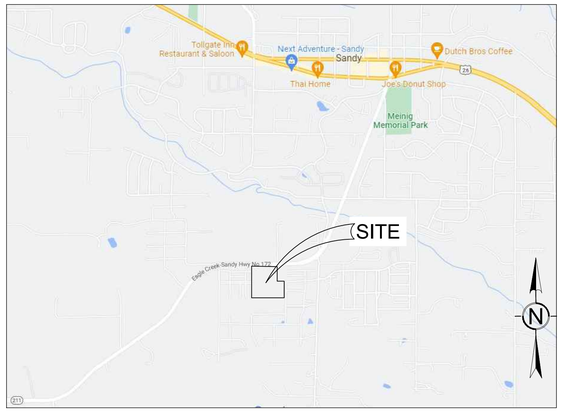
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	771	1622	-	-	1589	-	-	1084
HCM Lane V/C Ratio	0.013	0.031	-	-	-	-	-	0.042
HCM Control Delay (s)	9.7	7.3	0	-	0	-	-	8.5
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.1

CASCADE CREEK
TRAFFIC IMPACT ANALYSIS

APPENDIX
6. SITE PLAN

CASCADE CREEK APARTMENTS

38272 OR-211 SANDY, OR 97055



VICINITY MAP

SCALE: NTS

ABBREVIATIONS

AC	ACRE	G	GAS	R	RADIUS
APPROX	APPROXIMATELY	GRVL	GRAVEL	ROW	RIGHT-OF-WAY
APWA	AMERICAN PUBLIC WORKS ASSOCIATION	GV	GAS VALVE	RT	RIGHT
ARCH	ARCHITECTURAL	H	HEIGHT	S	SOUTH
ASPH	ASPHALT	HDPE	HIGH DENSITY POLYETHYLENE	SC	STORM CEPTOR
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	HMA	HOT MIX ASPHALT	SCH	SCHEDULE
AVE	AVENUE	HORIZ	HORIZONTAL	SD	STORM DRAIN
		ID	INSIDE DIAMETER	SDMH	STORM DRAIN MANHOLE
BLDG	BUILDING	IE	INVERT ELEVATION	SDR	STANDARD DIMENSION RATIO
BMP	BEST MANAGEMENT PRACTICE	IN	INCH	SF	SQUARE FEET
BG	BOTTOM OF GRADE			SPECS	SPECIFICATIONS
BTM	BOTTOM OF PIPE	L	LENGTH	SQ YD	SQUARE YARD
BW	BOTTOM OF WALL	LAT	LATITUDE	SS	SANITARY SEWER
		LF	LINEAR FEET	SSCO	SANITARY SEWER CLEANOUT
℄	CENTERLINE	LON	LONGITUDE	ST	STREET
CB	CATCH BASIN	LT	LEFT	STA	STATION
CF	CUBIC FEET			STD	STANDARD
CI	CAST IRON	MAX	MAXIMUM	SWPPP	STORM WATER POLLUTION PREVENTION PLAN
CL	CLASS	MH	MANHOLE		
CMP	CORRUGATED METAL PIPE	MIN	MINIMUM	T	TELEPHONE
CO	CLEAN OUT	MISC	MISCELLANEOUS	TC	TOP OF CURB
CONC	CONCRETE	MJ	MECHANICAL JOINT	TEMP	TEMPORARY
COS	CITY OF SANDY	MON	MONUMENT	TESC	TEMPORARY EROSION & SEDIMENT CONTROL
CPEP	CORRUGATED POLYETHYLENE PIPE	N	NORTH	TG	TOP OF GRADE
CR	CROWN OF PIPE	NC	NO CURB	TP	TOP OF PAVEMENT
CSTC	CRUSHED SURFACING TOP COURSE	NO.	NUMBER	TW	TOP OF WALL
		NTS	NOT TO SCALE	TYP	TYPICAL
DEPT	DEPARTMENT	OC	ON CENTER	UG	UNDER GROUND
DI	DUCTILE IRON	OD	OUTSIDE DIAMTER	UIC	UNDER GROUND INJECTION CONTROL
		OFF	OFFSET	U.O.N.	UNLESS OTHERWISE NOTED
E	EAST	PC	POINT OF CURVATURE	UP	UTILITY POLE
EA	EACH	PCC	POINT OF COMPOUND CURVE	V	VERTICAL
EC	EXTRUDED CURB	PI	POINT OF INTERSECTION		
EG	EXISTING GRADE	PL	PROPERTY LINE	W	WEST
ELEV	ELEVATION	PP	POWER POLE	W/	WITH
EP	EDGE OF PAVEMENT	PRC	POINT OF REVERSE CURVE		
ESC	EROSION & SEDIMENT CONTROL	PROP	PROPOSED	WV	WATER VALVE
EXIST	EXISTING	PT	POINT OF TANGENCY		
		PVC	POLYVINYL CHLORIDE	YD	YARD DRAIN
FFE	FINISH FLOOR ELEVATION	PVMT	PAVEMENT		
FG	FINISHED GRADE				
FH	FIRE HYDRANT				
FL	FLANGED				

SURVEY INFORMATION

FROM HARPER HOUF PETERSON RIGHELLIS, INC. DATED 08.22.2022

LEGAL DESCRIPTION (BY OTHERS)

THE WEST 4 ACRES OF THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 24, TOWNSHIP 2 SOUTH, RANGE 4 EAST OF THE WILLAMETTE MERIDIAN, IN THE CITY OF SANDY, COUNTY OF CLACKAMAS AND STATE OF OREGON.

EXCEPT THEREFROM THAT PORTION CONVEYED TO THE STATE OF OREGON, BY AND THROUGH ITS STATE HIGHWAY COMMISSION, BY DEED RECORDED FEBRUARY 5, 1947, IN BOOK 384, PAGE 393.

HORIZONTAL DATUM (BY OTHERS)

ASSUMED HORIZONTAL DATUM BASED UPON ALTA SURVEY PROVIDED BY "ALL COUNTY SURVEYOR & PLANNERS, INC"

VERTICAL DATUM (BY OTHERS)

ELEVATION DATUM: NAVD88 PER GPS METHODS
BENCHMARK: CONTROL POINT #1
LOCATION: SOUTH SIDE HWY 211
ELEVATION: 996.71

SITE LOCATION AND FUTURE STREET PLAN

PROJECT CONTACTS:

OWNER/APPLICANT
DPS, LLC
1911 65TH AVE W.
TACOMA, WA 98466
CONTACT: ZAC BAKER
PHONE: 253.460.3000
EMAIL: ZBAKER@SPHOME.COM

CIVIL ENGINEER
BCRA
2106 PACIFIC AVENUE, SUITE 300
TACOMA, WA 98402
CONTACT: ZACHARY CRUM, PE
PHONE: 253.627.4367
EMAIL: ZCRUM@BCRADESIGN.COM

TRAFFIC ENGINEER
HEATH & ASSOCIATES
PO BOX 397
PUYALLUP, WA 98371
CONTACT: AARON VAN AKEN, PE
PHONE: 253.770.1401
EMAIL: AVANAKEN@HEATHTRAFFIC.COM

ARBORIST
WASHINGTON FORESTRY CONSULTANTS, INC
9136 YELM HWY SE
OLYMPIA, WA 98513
CONTACT: GALEN WRIGHT, ACF, ASCA
PHONE: 360.943.1723

ARCHITECTS
ROSS DECKMAN & ASSOCIATES INC.
207 4TH AVENUE SE
PUYALLUP, WA 98372
CONTACT: BILL BOWDISH
PHONE: 253.840.9405
EMAIL: BILL@RDARCHITECT.COM

LANDSCAPE ARCHITECT
NATURE BY DESIGN
1320 ALAMEDA AVENUE, SUITE B
FIRCREST, WA 98466
CONTACT: KATHERINE OWENS
PHONE: 253.460.6067
EMAIL: NATUREBYDESIGNINC.COM

GEOTECHNICAL ENGINEER
GILL GROUP
820 NW CORNELL AVENUE
CORVALLIS, OR 97330
CONTACT: JACOB EPPERSON, PG
PHONE: 541.757.7645

SHEET INDEX

SITE INFORMATION TABLE

PROPERTY OWNER:

ZAC BAKER
DPS, LLC
1911 65TH/ AVE W
TACOMA, WA 98466

SITE ADDRESSES: 38272 HWY 211 & 38330 HWY 211 SANDY, OR 97055

PARCEL NUMBERS (TO BE PARTITIONED): 00677173 & 00677164

ZONING/DENSITY REQUIREMENTS:

VC - VILLAGE COMMERCIAL, NO MIN/MAX DENSITY
R-2 - MEDIUM DENSITY RESIDENTIAL,8 UNITS/AC MIN &14 UNITS/AC MAX
R-1 - LOW DENSITY RESIDENTIAL, 5 UNITS/AC MIN & 8 UNITS/AC MAX

EXISTING PARCEL AREAS:

677173: 3.81 AC
677164: 5.02 AC

TOTAL PARCEL AREA: 8.83 AC

ROW DEDICATION AREAS FOR HWY 211, VILLAGE BLVD, CASCADIA VILLAGE DR. AND PINE STREET: 1.7 AC

PROPOSED PARCELS UNITS/DENSITY

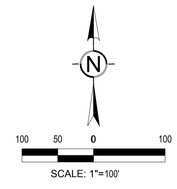
PARCEL 1 -
ZONING: VC
AREA: 1.01 AC
UNITS: 1 SF RESIDENCE TO REMAIN
DENSITY: 1 UNIT/AC

PARCEL 2 -
ZONING: VC
AREA: 2.26 AC
UNITS PROPOSED: 32 MF UNITS
DENSITY: 14.2 UNITS/AC

PARCEL 3 -
ZONING: R-1 AND R-2
AREA: 3.68 AC
UNITS PROPOSED: 48 MF UNITS
DENSITY: 13.04 UNITS/AC

TOTAL DEVELOPMENT AREA: 6.95 AC

TOTAL UNITS PROPOSED: 78 UNITS



SCALE: 1"=100'

bcra
T 253.627.4367 F 253.627.4395 WWW.BCRADESIGN.COM
414 STEWART STREET, SUITE 200, SEATTLE, WA 98101

SEAL

REGISTERED PROFESSIONAL ENGINEER
100 PE
OREGON
DECEMBER 13, 2022
ZACHARY MERLIN CRUM
PRELIMINARY
EXPIRES: 12/31/23

PROJECT
CASCADE CREEK MULTI FAMILY
38330 HWY 211
SANDY, OR 97055

SHEET SET CREATED BY RB 09.16.2022

REVISIONS

DATE
01.09.2023

BCRA NO.
21129

DRAWN BY: RJB, SM DESIGNED BY: SM

REVIEWED BY: ZMC

SHEET TITLE
COVER SHEET

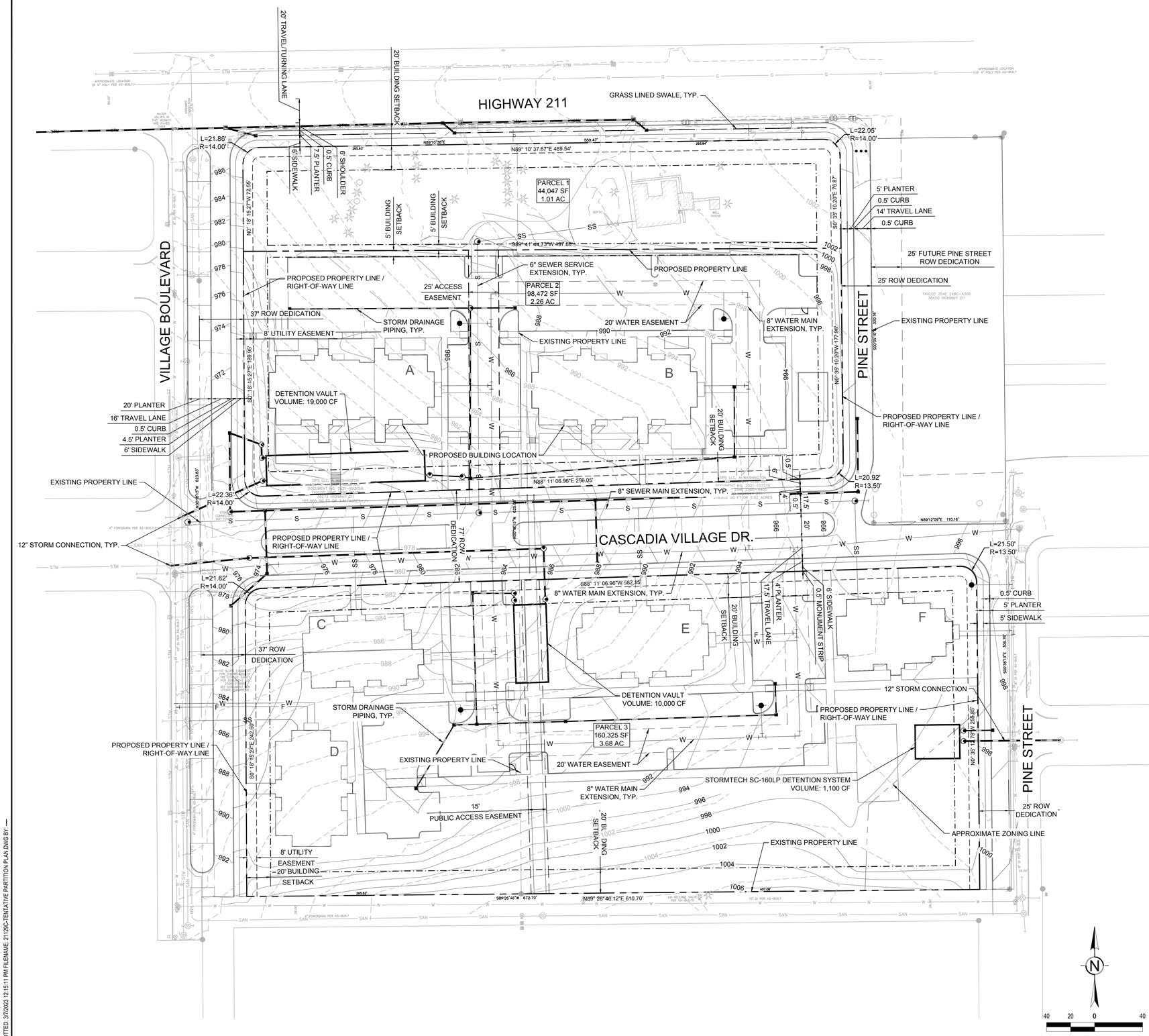
bcra

SHEET
C-001

LAND-USE

DATE PLOTTED: 3/7/2023 12:14:47 PM FILENAME: 21129C001.DWG BY:—

IF SHEET MEASURES LESS THAN 24"X36", IT IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY



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2106 PACIFIC AVENUE, SUITE 300
TACOMA, WA 98402
CONTACT: ZACHARY CRUM, PE
PHONE: 253.627.4367
EMAIL: ZCRUM@BCRADESIGN.COM

SITE INFORMATION:

SITE ADDRESSES: 38272 HWY 211 & 38330 HWY 211 SANDY, OR 97055

PARCEL NUMBERS TO BE PARTITIONED: 00677173 & 00677164

ZONING/DENSITY:

VC - VILLAGE COMMERCIAL, NO MIN/MAX DENSITY

R-2 - MEDIUM DENSITY RESIDENTIAL, 8 UNITS/AC MIN & 14 UNITS/AC MAX

R-1 - LOW DENSITY RESIDENTIAL, 5 UNITS/AC MIN & 8 UNITS/AC MAX

EXISTING PARCEL AREA

00677173: 3.81 AC

00677164: 5.02 AC

TOTAL AREA: 8.83 AC

ROW DEDICATION AREA FOR HWY 211, VILLAGE BLVD, CASCADIA VILLAGE DR. AND PINE STREET: 1.7 AC

PROPOSED PARCELS UNITS/DENSITY

PARCEL 1 -

ZONING: VC
AREA: 1.01 AC
UNITS: 1 SF RESIDENCE TO REMAIN
DENSITY: 1 UNIT/AC

PARCEL 2 -

ZONING: VC
AREA: 2.26 AC
UNITS PROPOSED: 32 MF UNITS
DENSITY: 14.2 UNITS/AC

PARCEL 3 -

ZONING: R-1 AND R-2
AREA: 3.68 AC
UNITS PROPOSED: 46 MF UNITS
DENSITY: 12.5 UNITS/AC

TOTAL DEVELOPMENT AREA: 6.95 AC
TOTAL UNITS PROPOSED: 78 UNITS

EXISTING PARCELS LEGAL DESCRIPTIONS:

CLACKAMAS CO. PARCEL NO. 00677173:

THE WEST 4 ACRES OF THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 24, TOWNSHIP 2 SOUTH, RANGE 4 EAST OF THE WILLAMETTE MERIDIAN, IN THE CITY OF SANDY, COUNTY OF CLACKAMAS AND STATE OF OREGON.

EXCEPT THEREFROM THAT PORTION CONVEYED TO THE STATE OF OREGON, AND BY AND THROUGH ITS STATE HIGHWAY COMMISSION, BY DEED RECORDED FEBRUARY 5, 1947, IN BOOK 384, PAGE 393.

CLACKAMAS CO. PARCEL NO. 00677164:

PROPOSED PARCELS LEGAL DESCRIPTIONS:

THREE TRACTS OF LAND LOCATED IN THE NORTHWEST ONE-QUARTER OF SECTION 24, TOWNSHIP 2 SOUTH, RANGE 4 EAST, WILLAMETTE MERIDIAN, CITY OF SANDY, CLACKAMAS COUNTY, OREGON, AND BEING PORTIONS OF THOSE PROPERTIES DESCRIBED IN STATUTORY WARRANTY DEEDS TO DPS LLC, A WASHINGTON LIMITED LIABILITY COMPANY, RECORDED IN DEED DOCUMENTS 2021-093058 AND 2021-107576 OF CLACKAMAS COUNTY DEED RECORDS, SAID TRACTS BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

PROPOSED PARCEL 1 LEGAL DESCRIPTION:

COMMENCING AT A 5/8" IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "MARX ASSOC. INC." MARKING THE INITIAL POINT OF "BLUFF AT BORNSTEDT VILLAGE" A SUBDIVISION OF RECORDED IN PLAT BOOK 132, PAGE 020, CLACKAMAS COUNTY PLAT RECORDS, SAID POINT ALSO BEING THE SOUTHEAST CORNER OF THAT PROPERTY DESCRIBED IN DOCUMENT 2021-107576 OF CLACKAMAS COUNTY DEED RECORDS;
THENCE ALONG THE SOUTH LINE OF SAID DOCUMENT 2021-107576 AND THE SOUTH LINE OF DOCUMENT 2021-093058, S 89°26'46" W, 672.70 FEET TO THE SOUTHWEST CORNER OF SAID DOCUMENT 2021-093058;
THENCE ALONG THE WEST LINE OF SAID DOCUMENT 2021-093058, N 00°18'15" W, 537.75 FEET;
THENCE N 89°41'45" E, 37.00 FEET TO THE POINT OF BEGINNING;
THENCE N 00°18'15" W, 72.55 FEET TO THE BEGINNING OF A 14.00 FOOT RADIUS CURVE TO THE RIGHT HAVING A CENTRAL ANGLE OF 89°28'53";
THENCE NORTHEASTERLY ALONG THE ARC OF SAID CURVE TO THE RIGHT, (THE LONG CHORD OF WHICH BEARS N 44°26'11" E, 19.71 FEET) AN ARC DISTANCE OF 21.86 FEET TO THE SOUTH RIGHT OF WAY LINE OF HIGHWAY 211;
THENCE ALONG SAID RIGHT OF WAY LINE, N 89°10'38" E, 469.54 FEET TO THE BEGINNING OF A 14.00 FOOT RADIUS CURVE TO THE RIGHT HAVING A CENTRAL ANGLE OF 90°14'12";
THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE TO THE RIGHT, (THE LONG CHORD OF WHICH BEARS S 45°42'16" E, 19.84 FEET) AN ARC DISTANCE OF 22.05 FEET;
THENCE S 00°35'10" E, 76.87 FEET;
THENCE S 89°41'45" W, 497.89 FEET TO THE POINT OF BEGINNING.

CONTAINING 44,047 SQUARE FEET, MORE OR LESS.

BEARINGS ARE BASED ON SURVEY NUMBER SN2006-342, CLACKAMAS COUNTY SURVEY RECORDS.

PROPOSED PARCEL 2 LEGAL DESCRIPTION:

COMMENCING AT A 5/8" IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "MARX ASSOC. INC." MARKING THE INITIAL POINT OF "BLUFF AT BORNSTEDT VILLAGE" A SUBDIVISION OF RECORDED IN PLAT BOOK 132, PAGE 020, CLACKAMAS COUNTY PLAT RECORDS, SAID POINT ALSO BEING THE SOUTHEAST CORNER OF THAT PROPERTY DESCRIBED IN DOCUMENT 2021-107576 OF CLACKAMAS COUNTY DEED RECORDS;
THENCE ALONG THE SOUTH LINE OF SAID DOCUMENT 2021-107576 AND THE SOUTH LINE OF DOCUMENT 2021-093058, S 89°26'46" W, 672.70 FEET TO THE SOUTHWEST CORNER OF SAID DOCUMENT 2021-093058;
THENCE ALONG THE WEST LINE OF SAID DOCUMENT 2021-093058, N 00°18'15" W, 537.75 FEET;
THENCE N 89°41'45" E, 37.00 FEET TO THE POINT OF BEGINNING;
THENCE CONTINUING N 89°41'45" E, 497.89 FEET;
THENCE S 00°35'10" E, 177.96 FEET TO THE BEGINNING OF A 13.50 FOOT RADIUS CURVE TO THE RIGHT HAVING A CENTRAL ANGLE OF 88°46'17";
THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE TO THE RIGHT, (THE LONG CHORD OF WHICH BEARS S 43°47'58" W, 18.89 FEET) AN ARC DISTANCE OF 20.92 FEET;
THENCE S 88°11'07" W, 471.42 FEET TO THE BEGINNING OF A 14.00 FOOT RADIUS CURVE TO THE RIGHT HAVING A CENTRAL ANGLE OF 91°30'38";
THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE TO THE RIGHT, (THE LONG CHORD OF WHICH BEARS N 46°03'34" W, 20.06 FEET) AN ARC DISTANCE OF 22.36 FEET;
THENCE N 00°18'15" W, 189.95 FEET TO THE POINT OF BEGINNING.

CONTAINING 98,472 SQUARE FEET, MORE OR LESS.

PROPOSED PARCEL 3 LEGAL DESCRIPTION:

COMMENCING AT A 5/8" IRON ROD WITH A YELLOW PLASTIC CAP STAMPED "MARX ASSOC. INC." MARKING THE INITIAL POINT OF "BLUFF AT BORNSTEDT VILLAGE" A SUBDIVISION OF RECORDED IN PLAT BOOK 132, PAGE 020, CLACKAMAS COUNTY PLAT RECORDS, SAID POINT ALSO BEING THE SOUTHEAST CORNER OF THAT PROPERTY DESCRIBED IN DOCUMENT 2021-107576 OF CLACKAMAS COUNTY DEED RECORDS;
THENCE ALONG THE SOUTH LINE OF SAID DOCUMENT 2021-107576, S 89°26'46" W, 25.00 FEET TO THE POINT OF BEGINNING;
THENCE CONTINUING ALONG THE SOUTH LINE OF SAID DOCUMENT 2021-107576 AND THE SOUTH LINE OF DOCUMENT 2021-093058, S 89°26'46" W, 610.70 FEET;
THENCE N 00°18'15" W, 242.60 FEET TO THE BEGINNING OF A 14.00 FOOT RADIUS CURVE TO THE RIGHT HAVING A CENTRAL ANGLE OF 89°29'22";
THENCE NORTHEASTERLY ALONG THE ARC OF SAID CURVE TO THE RIGHT, (THE LONG CHORD OF WHICH BEARS N 43°56'26" E, 19.54 FEET) AN ARC DISTANCE OF 21.62 FEET;
THENCE N 88°11'07" E, 582.15 FEET TO THE BEGINNING OF A 13.50 FOOT RADIUS CURVE TO THE RIGHT HAVING A CENTRAL ANGLE OF 91°13'40";
THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE TO THE RIGHT, (THE LONG CHORD OF WHICH BEARS S 46°12'03" E, 19.30 FEET) AN ARC DISTANCE OF 21.50 FEET;
THENCE S 00°35'13" E, 225.85 FEET TO THE POINT OF BEGINNING.

CONTAINING 160,325 SQUARE FEET, MORE OR LESS.

IF SHEET MEASURES LESS THAN 24"X36", IT IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY

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bcra
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414 STEWART STREET SUITE 200, SEATTLE, WA 98101

SEAL

REGISTERED PROFESSIONAL ENGINEER
100 PINE
OREGON
ZACHARY MERLIN CRUM
PRELIMINARY
NOVEMBER 13, 2022
EXPIRES: 12/31/23

PROJECT
CASCADE CREEK MULTI FAMILY
SHEET SET CREATED BY RB 09.16.2022
38330 HWY 211
SANDY, OR 97055

REVISIONS

DATE
01.09.2023

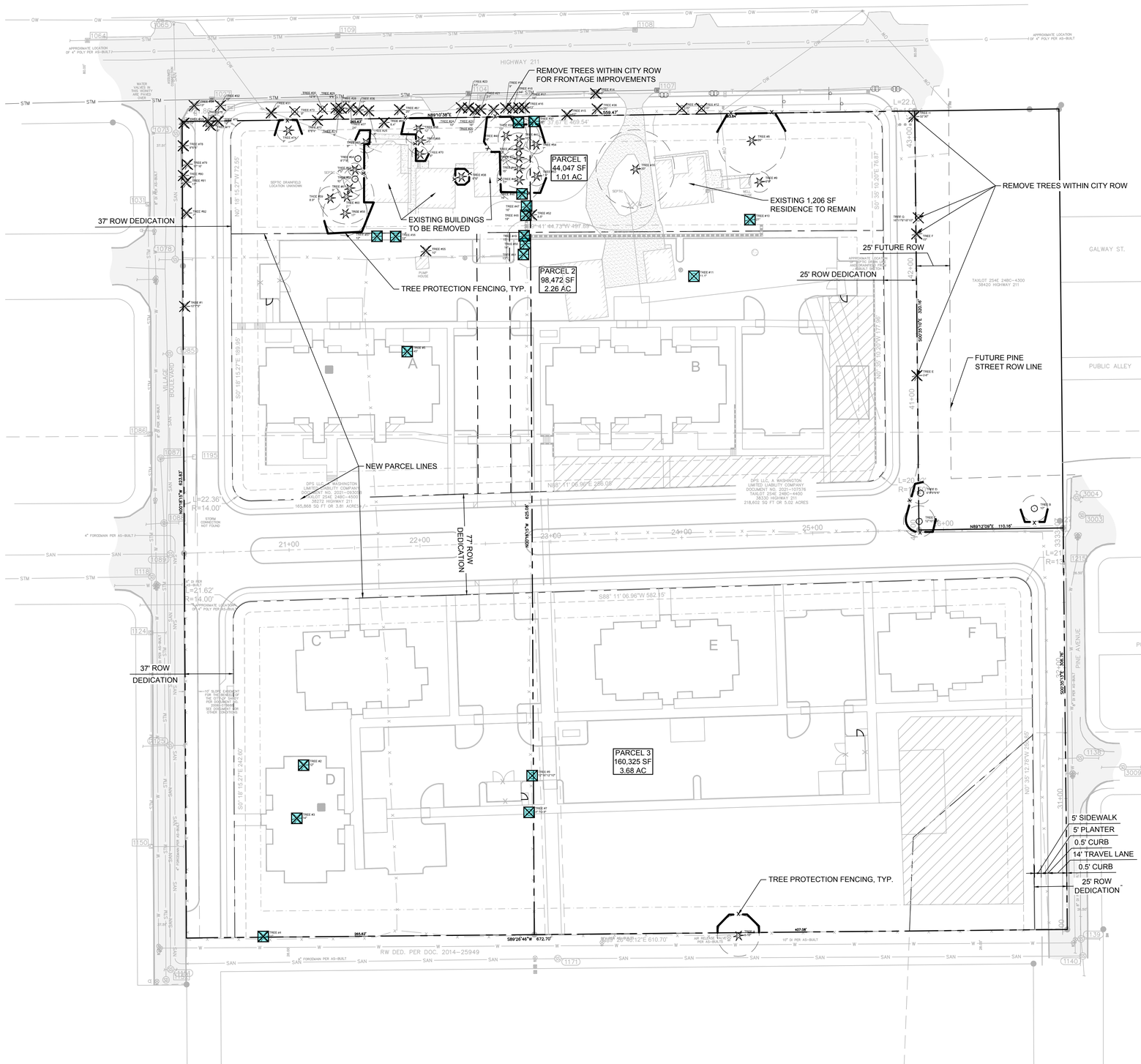
BCRA NO.
21129

DRAWN BY: RJB, SM DESIGNED BY: SM

REVIEWED BY: ZMC

SHEET TITLE
TENTATIVE PARTITION PLAN

SHEET
C-101
LAND-USE



LEGEND

- REMOVE EXISTING TREE
- TREE PROTECTION FENCE
- RETAINED TREE CRITICAL ROOT ZONE
- PROPERTY LINE
- TREE REMOVAL REQUIRING MITIGATION
- EXISTING TREE WITH CALCULATED DBH. SEE GENERAL NOTE 1

GENERAL NOTE:

1. TREE LOCATIONS ON PLAN HAVE NOT BEEN SURVEYED. LOCATIONS REFLECT TREE PROTECTION PLAN REPORT PREPARED BY WASHINGTON FORESTRY CONSULTANTS, INC., DATED 12/22/2022.

CODE REQUIREMENTS:

SMC 17.54.140

TREE RETENTION =
6 TREES/AC * 6.95 AC = 42 TREES RETAINED WITH DBH >11"

A VARIANCE WILL BE REQUESTED PER SMC SEC. 17.102.70 TO FULFILL TREE RETENTION REQUIREMENTS AS TREE RETENTION REQUIREMENTS CANNOT BE MET ON-SITE.

SMC 17.102.10

TREES ARE DEFINED AS "ANY LIVING, STANDING, WOODY PLANT HAVING A TRUNK 11 INCHES DBH OR GREATER".

SMC 17.102.20.B.1

"TREE REMOVAL AS REQUIRED BY THE CITY OR PUBLIC UTILITY FOR THE INSTALLATION OR MAINTENANCE OR REPAIR OF ROADS, UTILITIES OR STRUCTURES" ARE "EXEMPT FROM TREE RETENTION REQUIREMENTS".

EXISTING TREE COUNT:

TREES IN RIGHT-OF-WAY: 36
TREES ON-SITE: 38
TREES OFF-SITE: 8
TOTAL TREES: 82

PROPOSED TREE RETENTION/REMOVAL:

TOTAL TREES ON-SITE:	82 TREES
TOTAL TREES REMOVED:	58 TREES
TOTAL TREES RETAINED:	24 TREES

EXEMPTIONS (SEE TREE VARIANCE NARRATIVE FOR MORE INFORMATION):
<11" DBH REMOVED (EXEMPT PER SMC 17.102.10): 17 TREES

RIGHT-OF-WAY REMOVED (EXEMPT PER SMC 17.10.20(B)(1): 23 ADDITIONAL TREES, INCLUDES OFF-SITE TREES E, F, G, AND H.

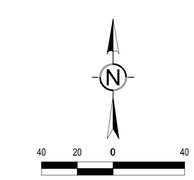
TOTAL EXEMPT TREES: 17 + 23 = 40 TREES

TREE REMOVAL REQUIRING MITIGATION: 58 - 40 = 18 TREES

TREE MITIGATION
SMC 17.102.70

MINIMUM MITIGATION RATIO: 2:1 RATIO
MITIGATION TREES REQUIRED: 18 X 2 = 36 MITIGATION TREES

REFER TO LANDSCAPE PLANS FOR MITIGATION TREES TYPES AND PLACEMENT.



SCALE: 1"= 40'

IF SHEET MEASURES LESS THAN 24"X36", IT IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY

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414 STEWART STREET SUITE 200, SEATTLE, WA 98101

SEAL

REGISTERED PROFESSIONAL ENGINEER
100 PE
STATE OF OREGON
MARY MERLIN CRUM
PRELIMINARY
EXPIRES: 12/31/23

PROJECT
SHEET SET CREATED BY RB 09.16.2022
CASCADE CREEK MULTI FAMILY
38330 HWY 211
SANDY, OR 97055

REVISIONS

DATE
01.09.2023

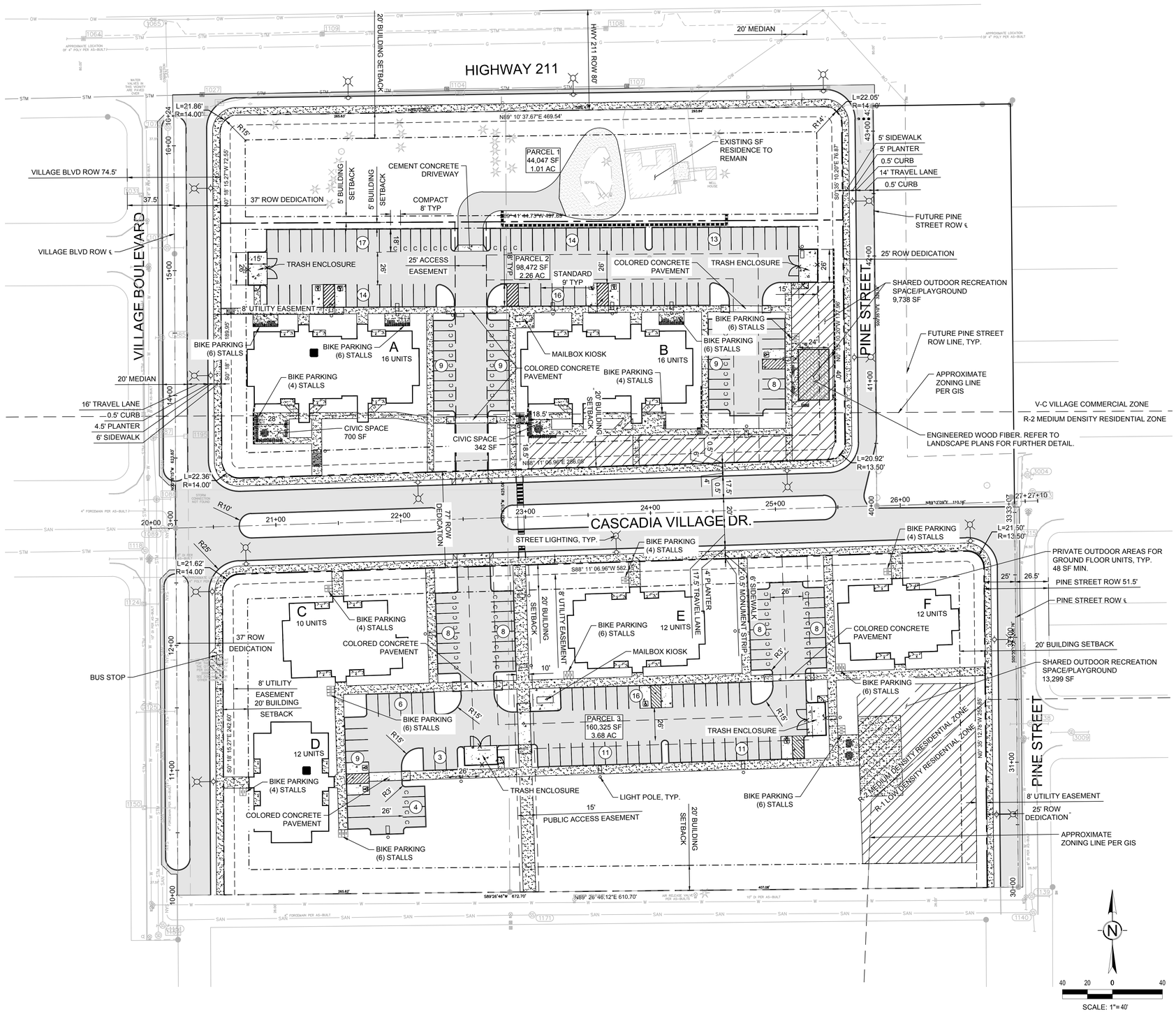
BCRA NO.
21129

DRAWN BY: RJB, SM DESIGNED BY: SM

REVIEWED BY: ZMC

SHEET TITLE
TREE PROTECTION PLAN

SHEET
C-102
LAND-USE



LEGEND

- PROPERTY/BOUNDARY LINE
- RIGHT-OF-WAY LINE
- SETBACK LINE
- ACCESS EASEMENT
- ROAD CENTERLINE
- BUILDING FOOTPRINT
- ASPHALT PAVEMENT
- ASPHALT PAVEMENT - HEAVY DUTY
- CEMENT CONCRETE SIDEWALK
- CEMENT CONCRETE PAVEMENT
- CURB & GUTTER
- PRECAST CONCRETE WHEELSTOP
- RETAINING WALL
- (55) NUMBER OF PARKING STALLS PER ROW

SITE INFORMATION TABLE

PROPERTY OWNER:

ZAC BAKER
DPS, LLC
1911 65TH AVE W
TACOMA, WA 98466

SITE ADDRESSES: 38272 HWY 211 & 38330 HWY 211 SANDY, OR 97055

PARCEL NUMBERS TO BE PARTITIONED: 00677173 & 00677164

ZONING/DENSITY:

VC - VILLAGE COMMERCIAL, NO MIN/MAX DENSITY

R-2 - MEDIUM DENSITY RESIDENTIAL, 8 UNITS/AC MIN & 14 UNITS/AC MAX

R-1 - LOW DENSITY RESIDENTIAL, 5 UNITS/AC MIN & 8 UNITS/AC MAX

EXISTING PARCEL AREA

00677173: 3.81 AC

00677164: 5.02 AC

TOTAL AREA: 8.83 AC

ROW DEDICATION AREA FOR HWY 211, VILLAGE BLVD, CASCADIA VILLAGE DR. AND PINE STREET: 1.7 AC

PROPOSED PARCELS UNITS/DENSITY

PARCEL 1 -

ZONING: VC
AREA: 1.01 AC
UNITS: 1 SF RESIDENCE TO REMAIN
DENSITY: 1 UNIT/AC

PARCEL 2 -

ZONING: VC
AREA: 2.26 AC
UNITS PROPOSED: 32 MF UNITS
DENSITY: 14.2 UNITS/AC

PARCEL 3 -

ZONING: R-1 AND R-2
AREA: 3.68 AC
UNITS PROPOSED: 46 MF UNITS
DENSITY: 12.5 UNITS/AC

TOTAL DEVELOPMENT AREA: 6.95 AC
TOTAL UNITS PROPOSED: 78 UNITS

SMC 17.86.10 PARKLAND DEDICATION

PARKLAND DEDICATION =
0.0068AC * 78 UNITS * 2.0 PERSONS/UNIT = 1.0608 AC

DEVELOPER SEEKING FEE-IN-LIEU PER SMC 17.86.40

SMC 17.90.110 VILLAGE COMMERCIAL DESIGN STANDARDS - CIVIC SPACE

AT LEAST 3% OF GROUND FLOOR AREA PER SMC 17.90.110 G

PARCEL 2:

TOTAL BUILDING GROUND FLOOR AREA = 13,034 SF
3% OF GROUND FLOOR AREA = 391 SF
TOTAL CIVIC SPACE PROVIDED = 800 SF

SMC 17.98 PARKING, LOADING, AND ACCESS REQUIREMENTS

MULTIFAMILY DWELLINGS - 2 PER DWELLING UNIT (2BDRM+)

PROFESSIONAL OFFICES - 1 PER 400SF, PLUS 1 PER 2 EMPLOYEES

COMPACT PARKING - 40% MAX

BICYCLE PARKING - 1 PER DWELLING UNIT

PARCEL 1: NOT APPLICABLE

PARCEL 2: 32 UNITS

MULTIFAMILY: 32 UNITS *2 = 64 SPACES
OFFICE: 11,142 SF OFFICE / 400 SF = 28 SPACES
EMPLOYEES: 20 TOTAL MAX SHIFT = 20 / 2 = 10 SPACES

TOTAL PARKING REQUIRED: 102 SPACES
TOTAL PARKING PROVIDED: 109 SPACES
COMPACT PARKING PROVIDED: 36 SPACES = 33.0%

BICYCLE SPACES REQUIRED: 32 * 1 = 32 SPACES
BICYCLE SPACES PROVIDED = 32 SPACES

PARCEL 3: 46 UNITS

MULTIFAMILY: 46 UNITS * 2 = 92 STALLS
OFFICE: NOT APPLICABLE
EMPLOYEES: NOT APPLICABLE

TOTAL REQUIRED: 92 STALLS
TOTAL PROVIDED: 92 STALLS
COMPACT PROVIDED: 35 STALLS = 38.0%

BICYCLE SPACES REQUIRED: 46 * 1 = 46 SPACES
BICYCLE SPACES PROVIDED = 46 SPACES

TOTAL PARKING ALL PARCELS: 201 SPACES
TOTAL BICYCLE SPACES ALL PARCELS: 78 SPACES

SITE COVERAGE
PARCEL 2
IMPERVIOUS = 62,524 SF (1.43 AC)
LANDSCAPE = 35,948 SF (0.83 AC)
PARCEL 3
IMPERVIOUS = 69,198 SF (1.59 AC)
LANDSCAPE = 91,127 SF (2.09 AC)

IF SHEET MEASURES LESS THAN 24"X36", IT IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY

bcra
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414 STEWART STREET SUITE 200, SEATTLE, WA 98101

SEAL

REGISTERED PROFESSIONAL ENGINEER
100 PE
OREGON
JANUARY 13, 2022
ZACHARY MERLIN CRUM
PRELIMINARY
EXPIRES: 12/31/23

PROJECT
CASCADE CREEK MULTI FAMILY
SHEET SET CREATED BY RB 09.16.2022
38330 HWY 211
SANDY, OR 97055

REVISIONS

DATE
01.09.2023

BCRA NO.
21129

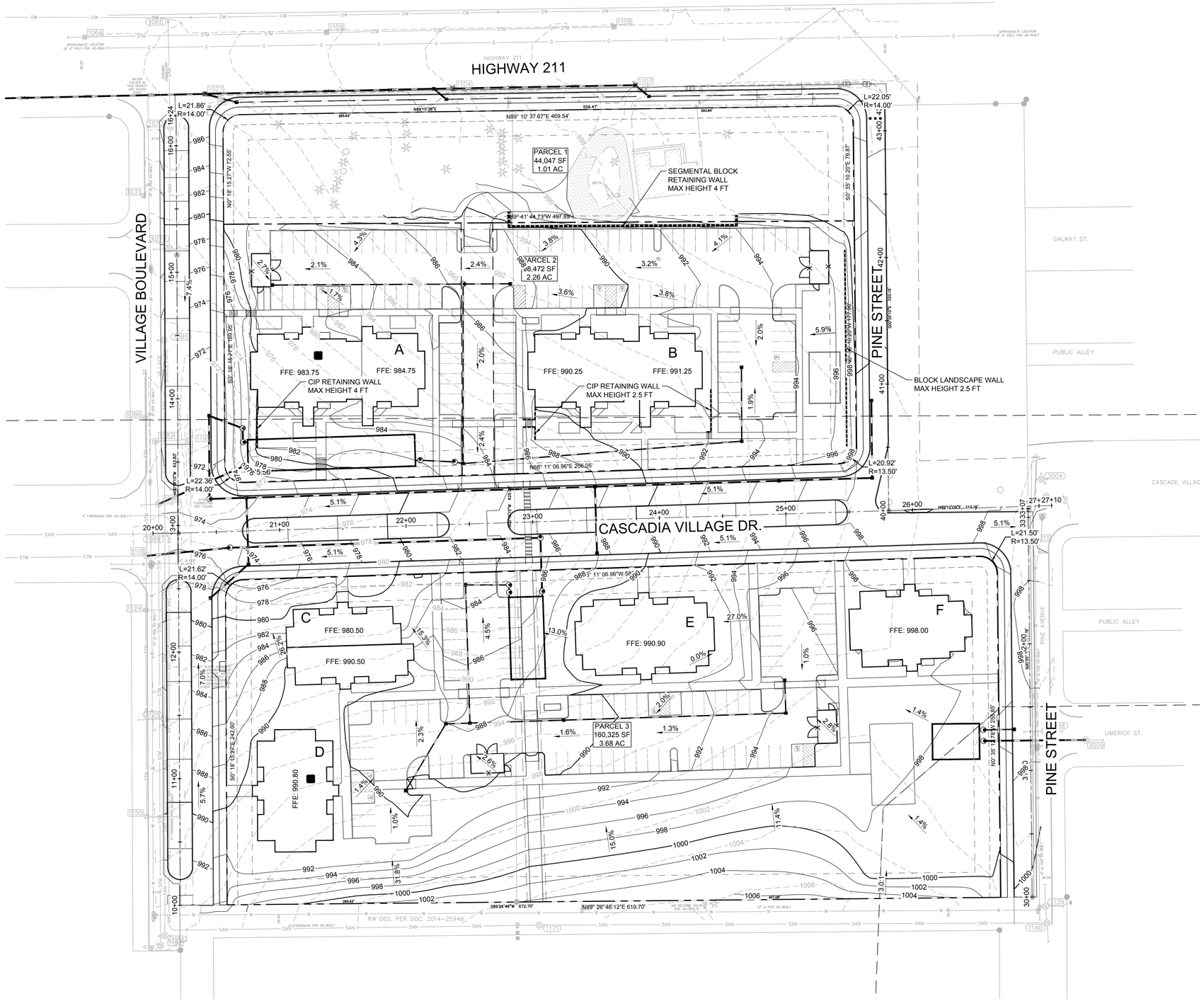
DRAWN BY: RJB, SM DESIGNED BY: SM

REVIEWED BY: ZMC

SHEET TITLE
SITE PLAN

SHEET
C-201
LAND-USE

DATE PLOTTED: 3/7/2023 12:15:45 PM FILENAME 21129C-201-202.DWG BY:—



LEGEND

210	MAJOR CONTOUR
213	MINOR CONTOUR
2.0%	SLOPE ARROW

SCALE: 1"= 40'

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SEAL

REGISTERED PROFESSIONAL ENGINEER
100 PE
OREGON
JANUARY 13, 2022
MARY MERLIN CRUM
PRELIMINARY
EXPIRES: 12/31/23

PROJECT
SHEET SET CREATED BY RB 09.16.2022
CASCADE CREEK MULTI FAMILY
38330 HWY 211
SANDY, OR 97055

REVISIONS

DATE
01.09.2023

BCRA NO.
21129

DRAWN BY: RJB, SM DESIGNED BY: SM

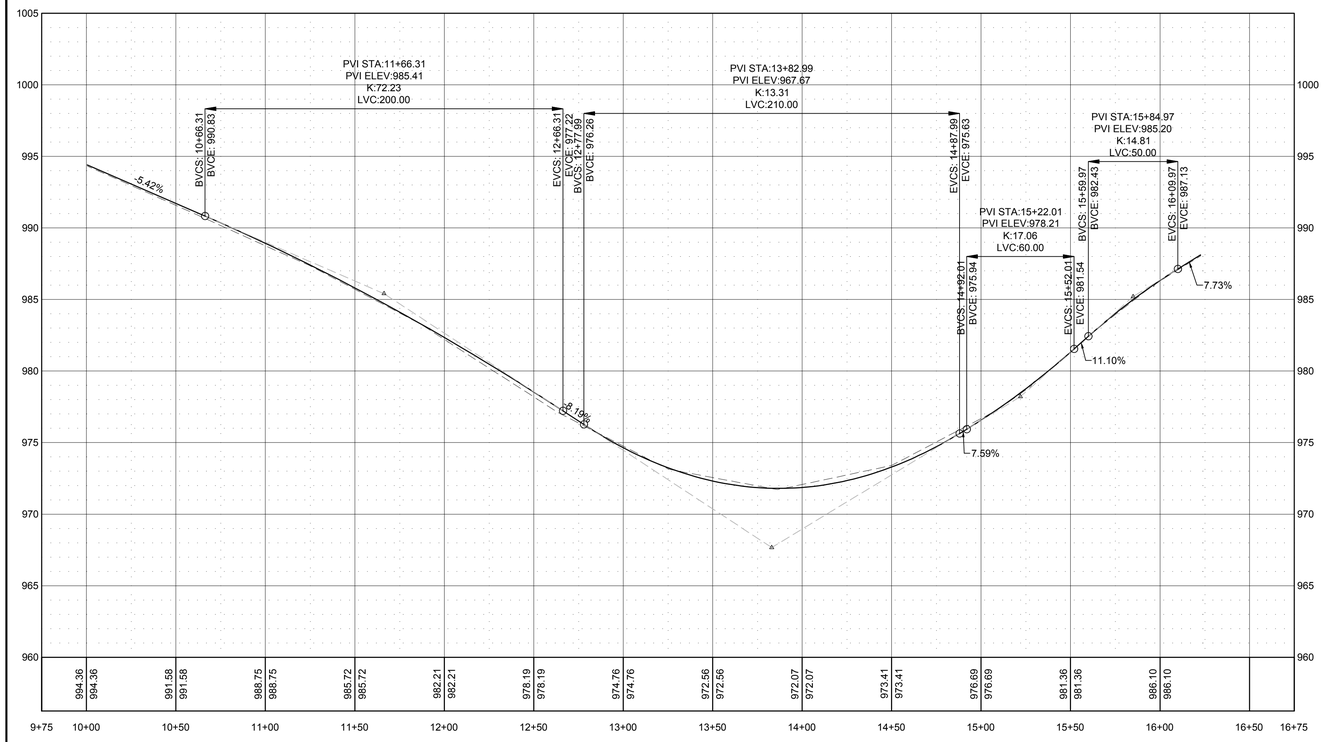
REVIEWED BY: ZMC

SHEET TITLE
GRADING AND
DRAINAGE PLAN

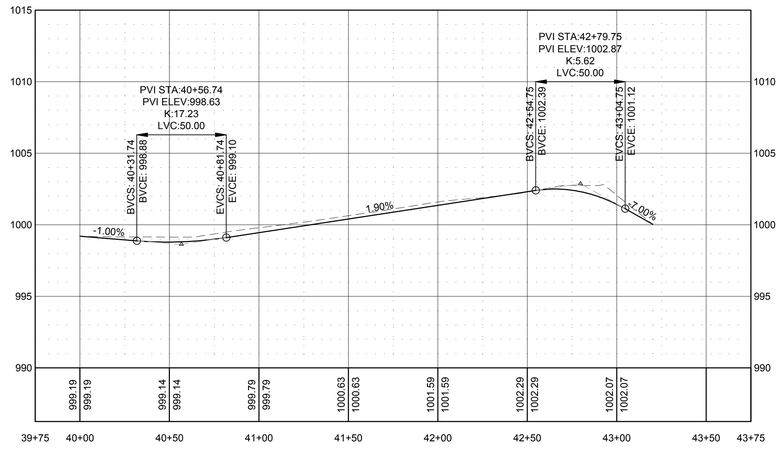
SHEET
C-301
LAND-USE

IF SHEET MEASURES LESS THAN 24"X36", IT IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY

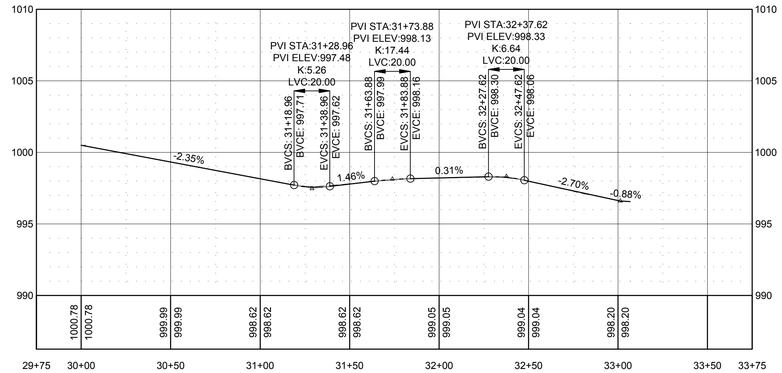
DATE PLOTTED: 3/7/2023 12:16:14 PM FILENAME: 21129C-301-302.DWG BY:—



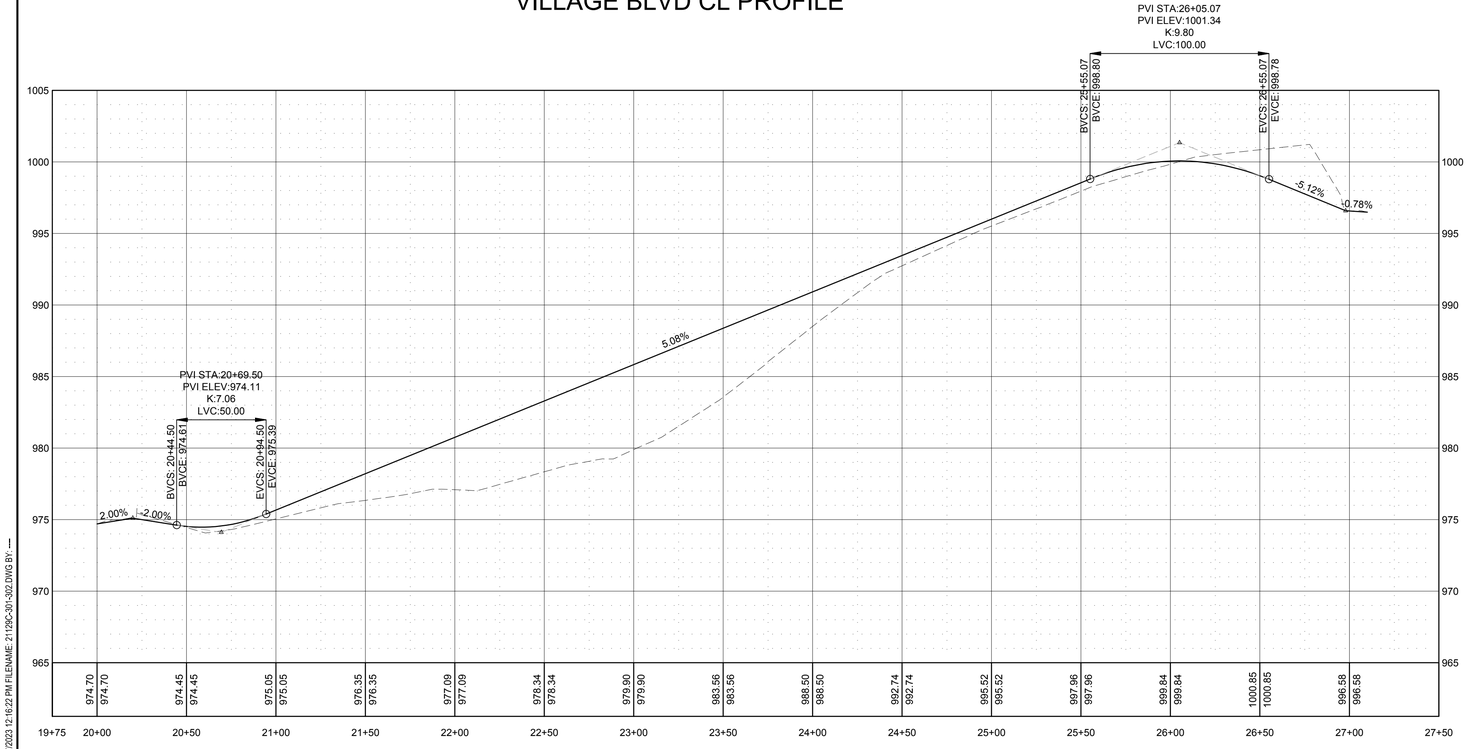
VILLAGE BLVD CL PROFILE



PINE STREET CL_NORTH PROFILE



PINE STREET CL_SOUTH PROFILE



CASCADIA VILLAGE DR CL PROFILE

5 2.5 0 5
VERTICAL SCALE: 1"= 5'

40 20 0 40
HORIZONTAL SCALE: 1"=40'

IF SHEET MEASURES LESS THAN 24"X36", IT IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY

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414 STEWART STREET SUITE 200, SEATTLE, WA 98101

SEAL

REGISTERED PROFESSIONAL ENGINEER
100 STATE OF OREGON
MARY MERLIN CRUM
PRELIMINARY
EXPIRES: 12/31/23

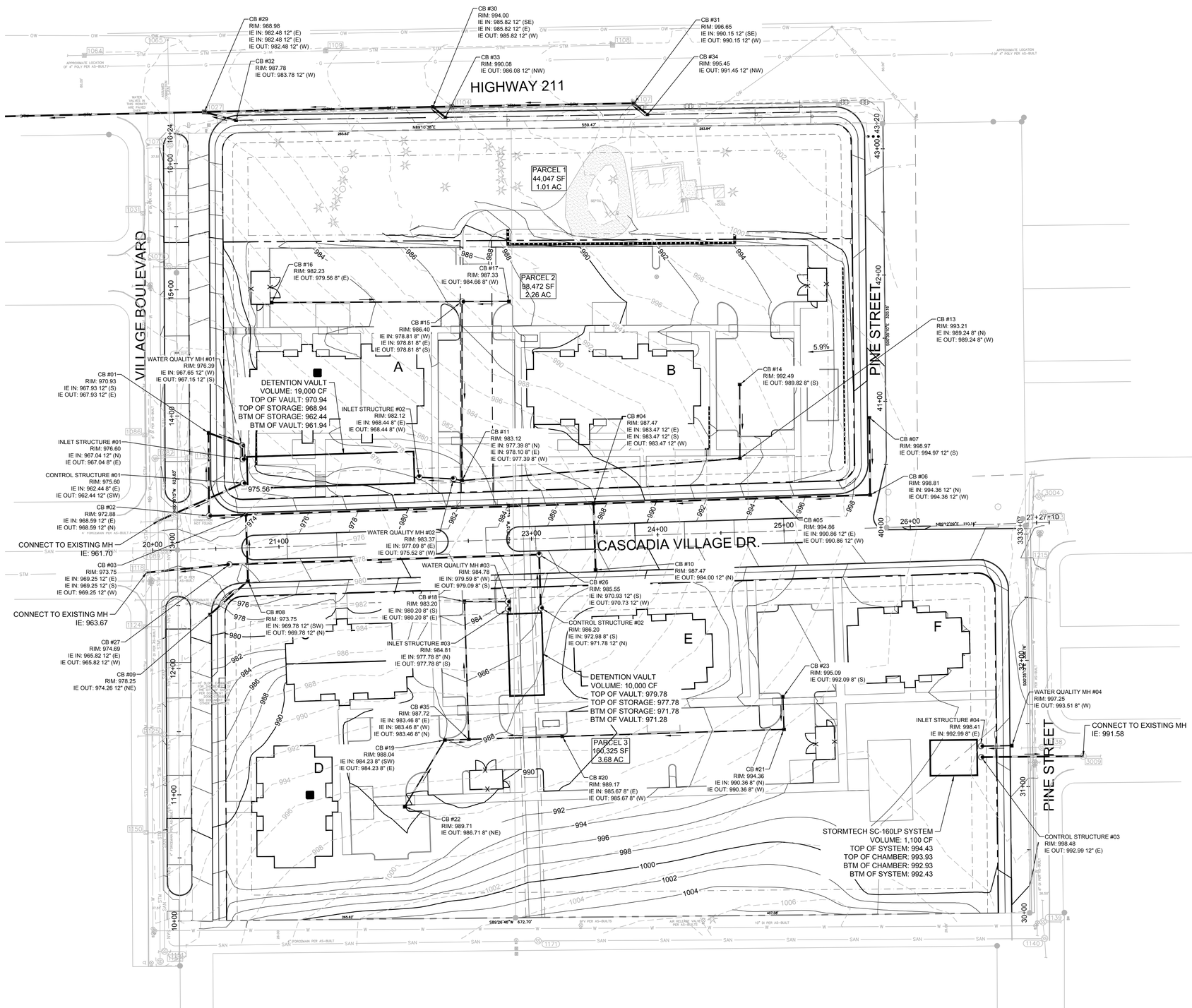
PROJECT
SHEET SET CREATED BY RB 09.16.2022
CASCADE CREEK MULTI FAMILY
38330 HWY 211
SANDY, OR 97055

REVISIONS

DATE
01.09.2023
BCRA NO.
21129
DRAWN BY: RJB, SM DESIGNED BY: SM
REVIEWED BY: ZMC
SHEET TITLE
ROADWAY PROFILES

bcra

SHEET
C-302
LAND-USE



LEGEND

- 210 — MAJOR CONTOUR
- 213 — MINOR CONTOUR
- 2.0% — SLOPE ARROW
- STORM DRAIN LINE
- SWALE/DITCH
- CATCH BASIN TYPE 1
- CATCH BASIN TYPE 2

SCALE: 1"= 40'

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414 STEWART STREET, SUITE 200, SEATTLE, WA 98101

SEAL

REGISTERED PROFESSIONAL ENGINEER 100 PHASE OREGON MARY MERLIN CRUM
PRELIMINARY
NOT FOR CONSTRUCTION
DECEMBER 13, 2022
EXPIRES: 12/31/23

PROJECT
SHEET SET CREATED BY RB 09.16.2022
CASCADE CREEK MULTI FAMILY
38330 HWY 211
SANDY, OR 97055

REVISIONS

DATE
01.09.2023

BCRA NO.
21129

DRAWN BY: RJB, SM DESIGNED BY: SM

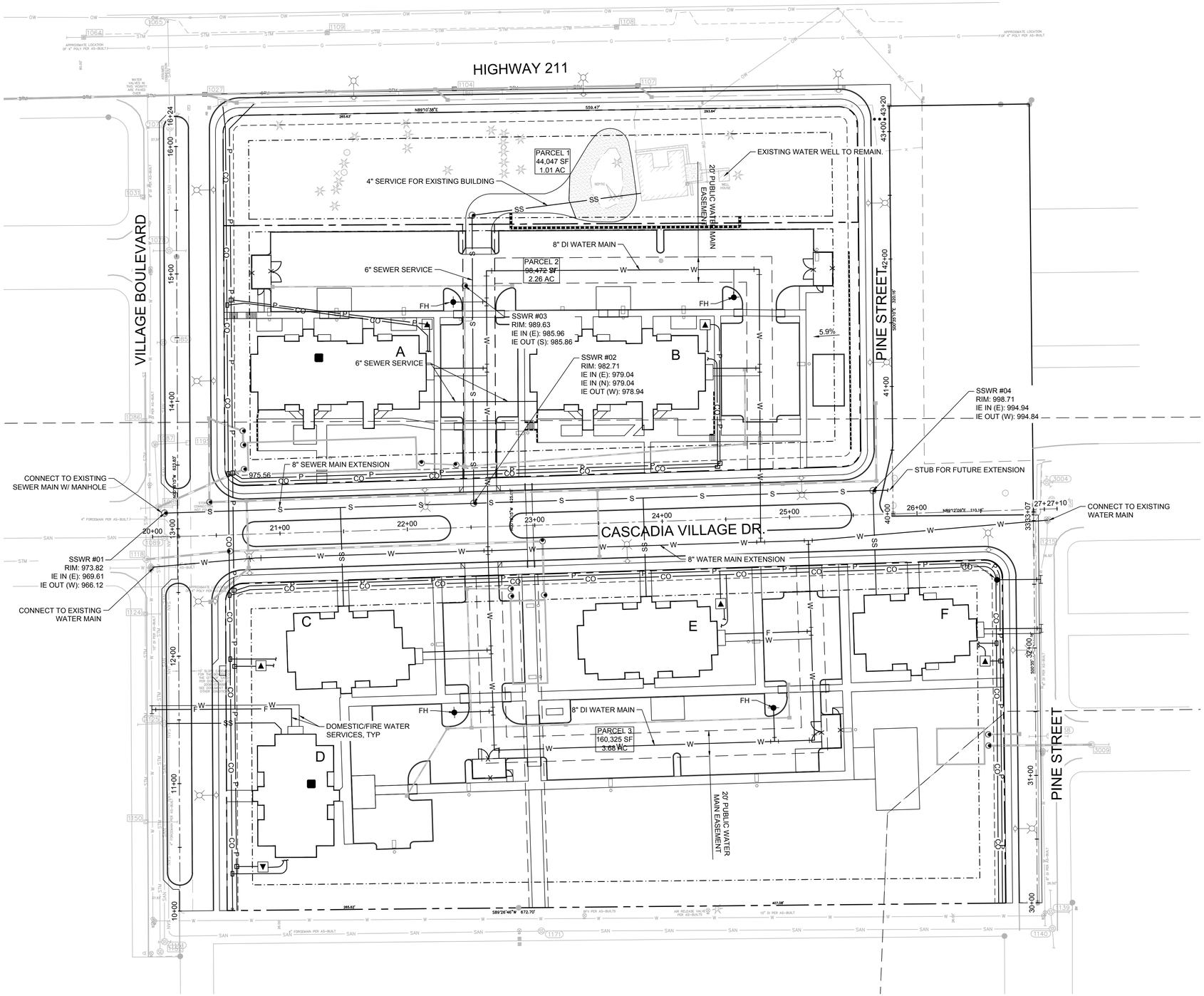
REVIEWED BY: ZMC

SHEET TITLE
STORM DRAINAGE PLAN

SHEET
C-401
LAND-USE

IF SHEET MEASURES LESS THAN 24"X36", IT IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY

DATE PLOTTED: 3/7/2023 12:16:52 PM FILENAME: 21129C-401-402.DWG BY: —



LEGEND

- P — POWER LINE
- ELECTRICAL TRANSFORMER
- CO — COMMUNICATION LINE
- W — WATER MAIN LINE
- TEE
- FIRE HYDRANT
- 90° BEND
- F — FIRE WATER LINE
- S — SANITARY SEWER LINE
- SS — SANITARY SEWER SERVICE LINE
- SANITARY SEWER MANHOLE

N

40 20 0 40

SCALE: 1"= 40'

IF SHEET MEASURES LESS THAN 24"X36", IT IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY

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414 STEWART STREET, SUITE 200, SEATTLE, WA 98101

SEAL

REGISTERED PROFESSIONAL ENGINEER 100 STATE OF OREGON MARY MERLIN CRUM
PRELIMINARY
EXPIRES: 12/31/23

PROJECT
SHEET SET CREATED BY RB 09.16.2022
CASCADE CREEK MULTI FAMILY
38330 HWY 211
SANDY, OR 97055

REVISIONS

DATE
01.09.2023

BCRA NO.
21129

DRAWN BY: RJB, SM DESIGNED BY: SM

REVIEWED BY: ZMC

SHEET TITLE
UTILITY PLAN

SHEET

C-501

LAND-USE