WILSONVILLE LAMBORGHINI

TRAFFIC IMPACT ANALYSIS (TIA)

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PREPARED FOR CITY OF WILSONVILLE

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INTRODUCTION

This study evaluates the transportation impacts associated with the proposed specialty automobile sales and service center building located on tax lot 3S-1-32DA-1000 on SW Parkway Avenue in Wilsonville, Oregon.

The property is an approximately 2.56-acre empty plot of land on the west side of SW Parkway Ave between SW Sun Place and SW Salish Lane.

The proposed development will consist of approximately 37,500 square feet of automobile sales and service space. The proposed site access will be located on SW Parkway Ave.

The purpose of this transportation study is to conduct a traffic impact analysis (TIA), which will identify any potential mitigation measures that might be needed to offset transportation impacts that the proposed development may have on the nearby transportation network in the near-term.

TRAFFIC IMPACT ANALYSIS (TIA)

The traffic impact analysis is focused on three existing intersections which were selected for evaluation in coordination with City staff. The intersections are listed below and shown in Figure 1. Important characteristics of the study area and proposed project are listed in Table 1.

1. Interstate-5 Southbound Ramps/SW Elligsen Road
2. Interstate-5 Northbound Ramps/SW Elligsen Road
3. SW Elligsen Road/SW Parkway Avenue

TABLE 1: STUDY AREA & DEVELOPMENT CHARACTERISTICS

STUDY AREA	
NUMBER OF STUDY INTERSECTIONS	Three intersections
ANALYSIS PERIODS	Weekday PM peak hour (one hour between 4pm – 6pm)
PROPOSED DEVELOPMENT	
EXISTING LAND USE	Vacant
PROPOSED LAND USE	Specialty automobile sales and service center
PROJECT TRIPS	89 PM peak hour trips (36 in, 53 out)

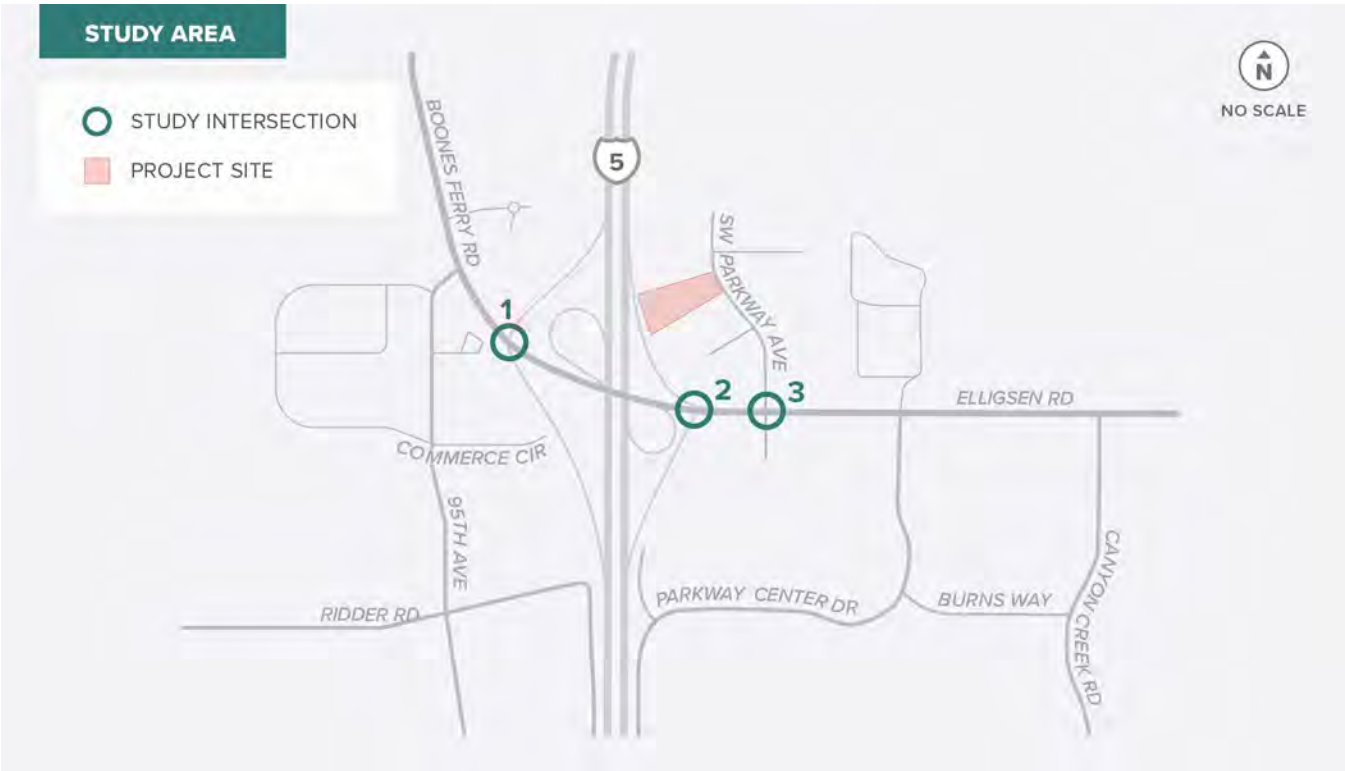

FIGURE 1: STUDY AREA

EXISTING CONDITIONS

This chapter provides documentation of existing study area conditions, including the study area roadway network, pedestrian and bicycle facilities, and existing traffic volumes and operations.

STUDY AREA ROADWAY NETWORK

Key roadways and their existing characteristics in the study area are summarized in Table 2. The functional classifications for City of Wilsonville streets are provided in the City of Wilsonville Transportation System Plan (TSP).[1]

[1] Chapter 3: The Standards, Wilsonville Transportation System Plan, City of Wilsonville, Amended November 2020.

TABLE 2: STUDY AREA ROADWAY CHARACTERISTICS

ROADWAY	FUNCTIONAL CLASS	OWNER	LANES	POSTED SPEED	SIDE-WALKS	BICYCLE FACILITIES	ON-STREET PARKING
ELLIGSEN ROAD	Minor Arterial	City of Wilsonville [a]	4 [b]	35 mph	Partial [c]	Partial [c]	No
INTERSTATE 5	Urban Interstate	ODOT	6/8 [d]	65 mph	No	No	No
PARKWAY AVENUE	Collector	City of Wilsonville	2	25 mph	Yes [e]	No	Partial [f]

[a] Elligsen Road is under ODOT jurisdiction near the I-5 interchange.

[b] Elligsen Road is primarily 4 travel lanes, with some additional lanes present near Parkway Avenue.

[c] On Elligsen Road, sidewalks and bicycle lanes are generally present. There are no bike lanes present on the segment from the NB ramps to the SB ramps.

[d] Interstate 5 has 6 travel lanes south of the Elligsen Road interchange and 8 travel lanes north of the Elligsen Road interchange.

[e] Parkway Avenue has sidewalks everywhere except for a section on the east side of the road. Sidewalk is present fronting the project site.

[f] Unmarked on-street parking is allowed on Parkway Avenue for most of the roadway.

Bicycle and Pedestrian Facilities

Near the project site, there are no bike lanes on SW Parkway Ave, however there are on-street bike lanes on Elligsen Rd west of SW Elligsen Rd.

Sidewalks are mostly present along both sides of SW Parkway Ave. The only segment that is missing sidewalk is directly across from the development on the east side of SW Parkway Ave.

Public Transit Service

South Metro Area Regional Transit (SMART) provides public transportation services within Wilsonville and outlying areas, including Canby, Salem, and south Portland. There are two bus stops located approximately 400 feet east of the SW Elligsen Rd / SW Parkway Ave intersection.

There are two bus stops located at the intersection of SW Parkway Center Drive/SW Burns Way, approximately 0.5 miles away. These bus stops are served by Route 2X (Tualatin Park & Ride) which provides service between the Wilsonville Transit Center and Tualatin Park & Ride with approximately 30-minute headways.

PLANNED PROJECTS

The City of Wilsonville Transportation System Plan (TSP) has a list of planned projects which includes the recommended projects reasonably expected to be funded through 2035. These are the solutions to meet the City's most important needs. The list includes the following projects that impact the key roadways near the proposed project site.

- UU-P3 A/B (Elligsen Road Urban Upgrade) – Upgrade Elligsen Road from Parkway Center Drive to Stafford Road to meet applicable cross-section standards including bike lanes, sidewalks, and transit improvements.
- SI-07 (Dual Southbound Right Turn Lanes) (High Priority) – Add a second southbound right turn lane to the I-5 Exit Ramp at the Boones Ferry Road intersection. Also, a Washington County RTP project (#11489).

EXISTING TRAFFIC VOLUMES

Intersection turning movement count data was collected during the weekday PM peak period (4:00pm – 6:00pm) on Tuesday, April 4th, 2023, at the study intersections. Because two of the study intersections are under ODOT authority, a seasonal adjustment factor was calculated and applied to those two intersections so that the 30th Highest Hour volumes were used in the analysis. Yearly volume data from Automatic Traffic Recorders (ATRs) 34-008 (on I-5 at MP 290.14) and ATR 03-011 (on I-5 at MP 281.20) were averaged together since both are within proximity to the project area. The resulting seasonal adjustment factor that was applied was 1.05.

Figure 2 shows the adjusted Existing PM peak hour traffic volumes for the study intersections, along with the lane configurations and traffic control.

INTERSECTION PERFORMANCE MEASURES

Agency mobility standards often require intersections to meet level of service (LOS) or volume-to-capacity (v/c) intersection operation thresholds.

- The intersection LOS is similar to a "report card" rating based upon average vehicle delay. Level of service A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. Level of service D and E are progressively worse operating conditions. Level of service F represents conditions where average vehicle delay has become excessive and demand has exceeded capacity. This condition is typically evident in long queues and delays.
- The volume-to-capacity (v/c) ratio represents the level of saturation of the intersection or individual movement. It is determined by dividing the peak hour traffic volume by the maximum hourly capacity of an intersection or turn movement. When the V/C ratio approaches 0.95, operations become unstable and small disruptions can cause the traffic flow to break down, resulting in the formation of excessive queues.

The City of Wilsonville requires study intersections on public streets to meet its minimum acceptable level of service (LOS) standard of LOS D for the PM peak period. As may be approved

by the City Council, possible exceptions to the LOS D standard are a change to LOS E on Elligsen Road.[2]

The two intersections of the Interstate-5/Elligsen Road interchange are required to meet ODOT mobility targets, which are identified in the METRO Regional Transportation Plan (2018) and the Oregon Highway Plan (1999). For the I-5 corridor between the Marquam Bridge and Wilsonville, the PM peak hour target for the first and second hour is a v/c ratio equal to or less than 0.99.[3]

[2] Chapter 2: The Vision, Policy 5, Wilsonville Transportation System Plan, City of Wilsonville, Amended November 2020.

[3] Table 2.4, Regional Transportation Plan, Metro, December 2018.

Table 7, Oregon Highway Plan, Oregon Department of Transportation, 1999.

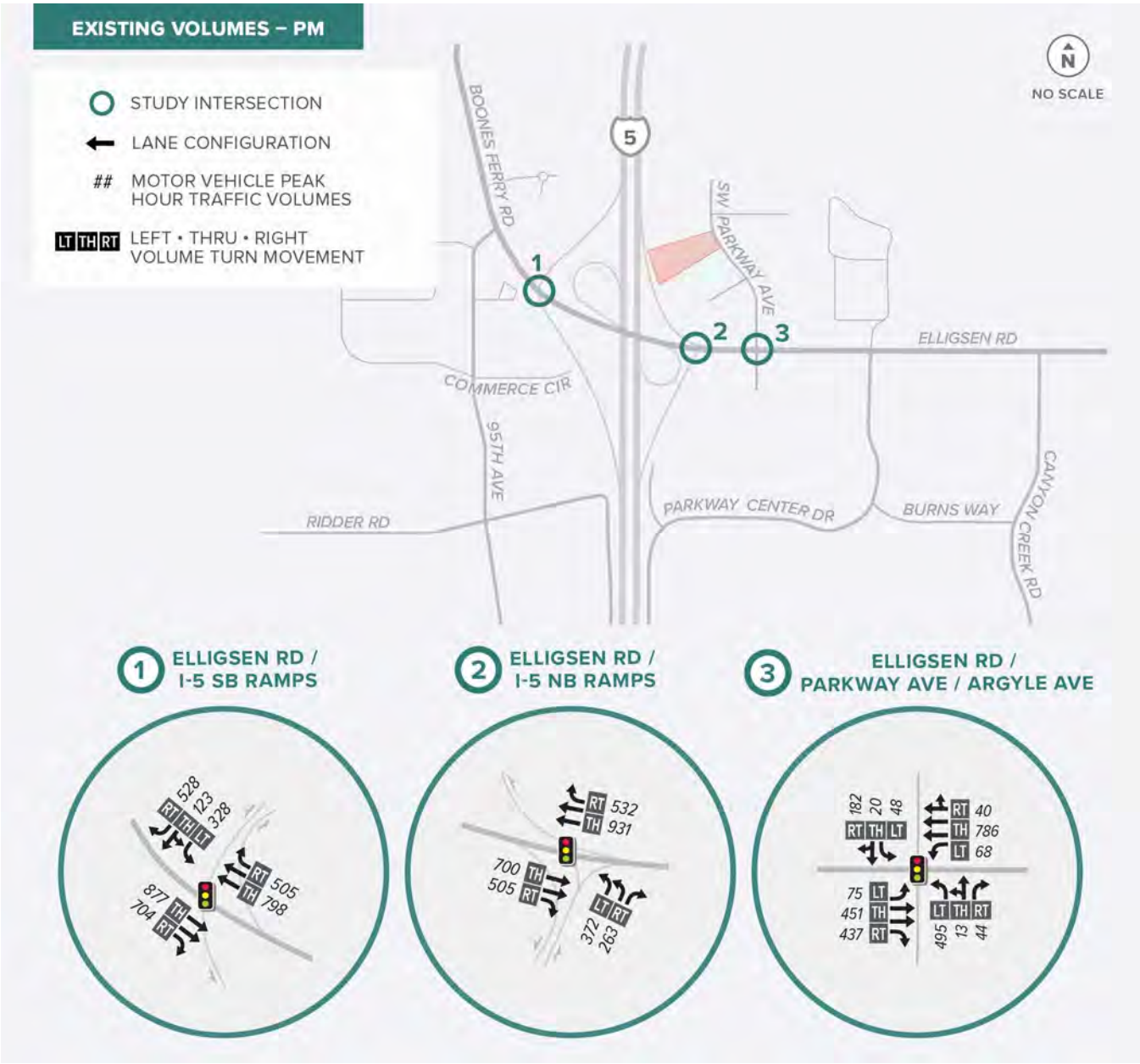

FIGURE 2: EXISTING PM PEAK HOUR TRAFFIC VOLUMES

EXISTING INTERSECTION OPERATIONS

Intersection operations were analyzed for the PM peak hour at all study intersections for the existing conditions using Highway Capacity Manual (HCM) 6th Edition methodology.[4] The volume to capacity (v/c) ratio, delay, and level of service (LOS) of each study intersection are listed in Table 3.

As shown, all study intersections meet the applicable operating standards under all future analysis scenarios.

TABLE 3: EXISTING (2023) INTERSECTION OPERATIONS (PM PEAK)

INTERSECTION	OPERATING STANDARD	EXISTING PM PEAK HOUR		
		V/C	DELAY	LOS
SIGNALIZED				
I-5 SB RAMPS/ELLIGSEN RD	v/c ≤ 0.99 (ODOT)	0.46	13.2	B
I-5 NB RAMPS/ELLIGSEN RD	v/c ≤ 0.99 (ODOT)	0.41	8.8	A
PARKWAY AVE/ELLIGSEN RD	LOS D (City)	0.50	21.1	C

SIGNALIZED INTERSECTION:
Delay = Average Intersection Delay (secs)
v/c = Total Volume-to-Capacity Ratio
LOS = Total Level of Service

TWO-WAY STOP-CONTROLLED INTERSECTION:
Delay = Critical Movement Delay (secs)
v/c = Critical Movement Volume-to-Capacity Ratio
LOS = Critical Levels of Service (Major/Minor Road)

PROJECT IMPACTS

This chapter reviews the impacts that the proposed development may have on the transportation system within the study area. This analysis includes trip generation, trip distribution, future traffic volume development, and operations analysis for the study intersections.

PROPOSED DEVELOPMENT

The proposed development is a new three-story Lamborghini sales and service center approximately 37,500 square-feet on previously undeveloped land located on SW Parkway Ave in Wilsonville, Oregon. The existing development site contains wetlands. Proposed development occurs outside the wetlands, but portions occur within the Significant Resource Overlay Zone (SROZ).

[4] Highway Capacity Manual, 6th Edition, Transportation Research Board, 2017.

FUTURE ANALYSIS SCENARIOS

Operating conditions were analyzed at the study intersections for the following traffic scenarios. The comparison of the following scenarios enables the assessment of project impacts:

- Existing + Project
- Existing + Stage II
- Existing + Project + Stage II

All future analysis scenarios assume the same traffic control as existing conditions. Stage II represents traffic from other developments that have Stage II approval or are under construction in Wilsonville, which are based on the list of currently approved Stage II developments provided by City staff.[5]

TRIP GENERATION

Trip generation is the method used to estimate the number of vehicles added to site driveways and the adjacent roadway network by a development during a specified period (e.g., PM peak hour). The Institute of Transportation Engineers (ITE) publishes trip generation rates for the various land uses that can be applied to determine estimated traffic volumes.[6]

Shown in Table 4 is the ITE trip generation rate for Automobile Sales (New) (150). New Automobile Sales is described by ITE as a commercial development where the primary business is the sale or leasing of new cars, but also may include automobile servicing. This land use is expected to generate 89 total (36 in, 53 out) PM peak hour trips.

TABLE 4: VEHICLE TRIP GENERATION RATES

DATA SOURCE	SIZE [a]	PM PEAK HOUR TRIP GENERATION RATE	PM PEAK HOUR VEHICLE TRIPS			AVERAGE WEEKDAY TRIPS
			IN	OUT	TOTAL	
AUTOMOBLE SALES (NEW) (ITE CODE 840)	37.5 KSF	2.37 Trips per KSF	36	53	89	1,045

[a] KSF = 1,000 square feet

[5] Provided via email from Daniel Pauly, City of Wilsonville, January 17, 2024

[6] Trip Generation Manual, 11th Edition, Institute of Transportation Engineers, 2021.

VEHICLE TRIP DISTRIBUTION

Vehicle trip distribution provides an estimation of where vehicles would be coming from and going to. It is given as a percentage at key gateways to the study area and is used to route project trips through the study intersections. Figure 3 shows the trip distribution for the proposed site. The trip distribution for the passenger car trips was based on the Wilsonville Travel Demand Model and adjusted based on existing traffic patterns.[7]

- 30% north of the project site via I-5
- 25% south of the project site via I-5
- 20% west of the project site via Elligsen Rd / SW Boones Ferry Rd
- 15% east of the project site via Elligsen Road
- 5% just south of the project site to/from Argyle Square Shopping Center
- 5% southeast of the project site via Canyon Creek Rd

Project Trips Through City of Wilsonville I-5 Interchange Areas

The project trips through the two City of Wilsonville I-5 interchange areas were estimated based on the trip generation and distribution assumptions as discussed prior. Approximately 75% of the project trips (67 PM peak hour trips) are expected to travel through the I-5 / SW Elligsen Rd interchange and 0% of the project trips are expected to travel through the I-5 / Wilsonville Rd interchange area.

FUTURE TRAFFIC VOLUMES

Traffic volumes were estimated at the study intersections for the three future analysis scenarios previously listed using the various combinations of the three traffic types: Existing, Project, and Stage II. Figure 4 shows the Existing + Project, Existing + Stage II, and Existing + Stage II + Project PM peak hour traffic volumes.

[7] 2040 Wilsonville Travel Demand Model, Select Zone Analysis, TAZ 4137.

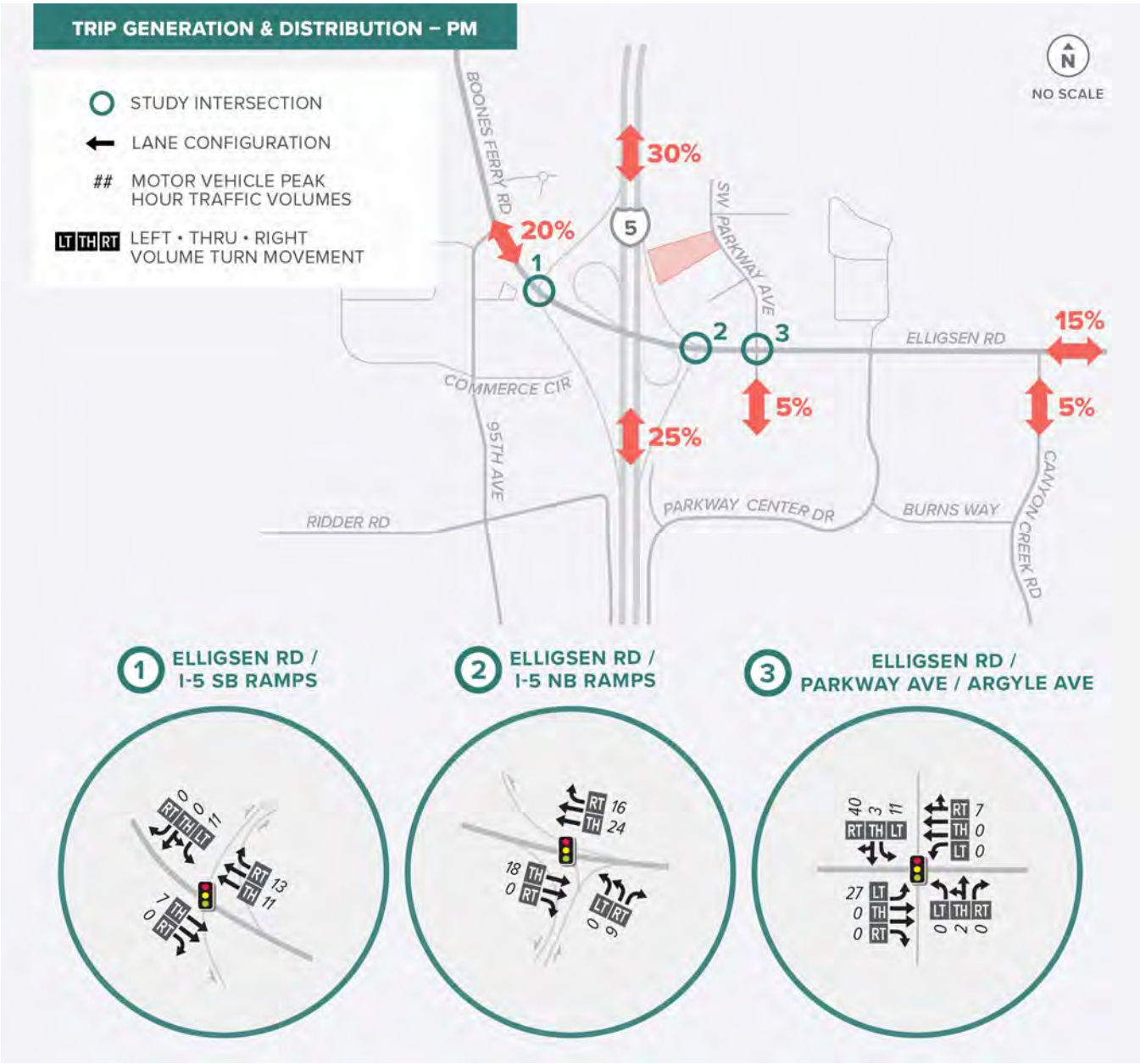

FIGURE 3: PROJECT TRIPS & TRIP DISTRIBUTION

FIGURE 4: ALL FUTURE SCENARIO PM PEAK HOUR TRAFFIC VOLUMES

FUTURE INTERSECTION OPERATIONS

Intersection operations were analyzed for the PM peak hour at all study intersections for the future scenarios using Highway Capacity Manual (HCM) 6th Edition methodology.[8] The volume to capacity (v/c) ratio, delay, and level of service (LOS) of each study intersection are listed in **Error! Reference source not found.**.

As shown, all study intersections meet the applicable operating standards under all future analysis scenarios.

TABLE 5: FUTURE INTERSECTION OPERATIONS (PM PEAK)

INTERSECTION	OPERATING STANDARD	EXISTING + PROJECT			EXISTING + STAGE II			EXISTING + STAGE II + PROJECT		
		V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS
SIGNALIZED										
I-5 SB RAMPS/ELLIGSEN RD	v/c ≤ 0.99 (ODOT)	0.47	14.6	B	0.51	15.5	B	0.52	15.9	B
I-5 NB RAMPS/ELLIGSEN RD	v/c ≤ 0.99 (ODOT)	0.42	8.6	A	0.42	8.9	A	0.43	8.7	A
PARKWAY AVE/ELLIGSEN RD	LOS D (City)	0.51	22.6	C	0.50	21.8	C	0.54	23.9	C

SIGNALIZED INTERSECTION:
Delay = Average Intersection Delay (secs)
v/c = Total Volume-to-Capacity Ratio
LOS = Total Level of Service

TWO-WAY STOP-CONTROLLED INTERSECTION:
Delay = Critical Movement Delay (secs)
v/c = Critical Movement Volume-to-Capacity Ratio
LOS = Critical Levels of Service (Major/Minor Road)

[8] Highway Capacity Manual, 6th Edition, Transportation Research Board, 2017.

SITE PLAN REVIEW

This section reviews the project site plan for consistency with the Wilsonville Transportation System Plan and other applicable transportation standards, including the Wilsonville Development Code and Wilsonville Public Works Standards. The purpose of this review is to help identify any major site plan design concerns that could impact the greater project goals and could necessitate overall site plan changes. The site plan is provided in the appendix.[9]

VEHICULAR SITE ACCESS & ACCESS SPACING

There is one proposed site access (driveway) for the project. This is a new driveway that will be constructed on SW Parkway Ave.

The access point is required to meet the City's access spacing standards for collectors.[10] The access spacing for collectors is to be a minimum of 100 feet between adjacent curb returns, but the desired spacing is 300 feet. The proposed site access is less than 100 feet and does not meet the City's standard. However, the proposed driveway location is placed such that it has the least impact on the SROZ and has been approved by City staff.

DRIVEWAY AISLE LENGTH

The City has minimum driveway aisle length standards.[11] For driveways with more than 100 average daily traffic (ADT), the drive aisle must be clear of parking stalls and intersecting drive aisles within 100 feet from the back of sidewalk.

The nearest intersecting driveway from the site's access point is a proposed parking lot that is approximately 30 feet from the back of the sidewalk. This does not meet the City's standard of 100 feet minimum.

SIGHT DISTANCE

Adequate sight distance should be provided at all intersections and driveways. Objects (e.g., buildings, fences, walls, or vegetation) located near the intersections may inhibit sight distance for drivers attempting to turn out of a minor street onto the major street. Based on a preliminary sight distance evaluation, the sight distance at the proposed driveway on SW Parkway Ave appears to meet sight distance requirements, which is a minimum of 280 feet of visibility for vehicle speeds of 25 mph.

Prior to occupancy, sight distance at any existing or proposed driveways will need to be verified, documented, and stamped by a registered professional Civil Engineer licensed in the State of Oregon to assure that buildings, signs, or landscaping does not restrict sight distance.

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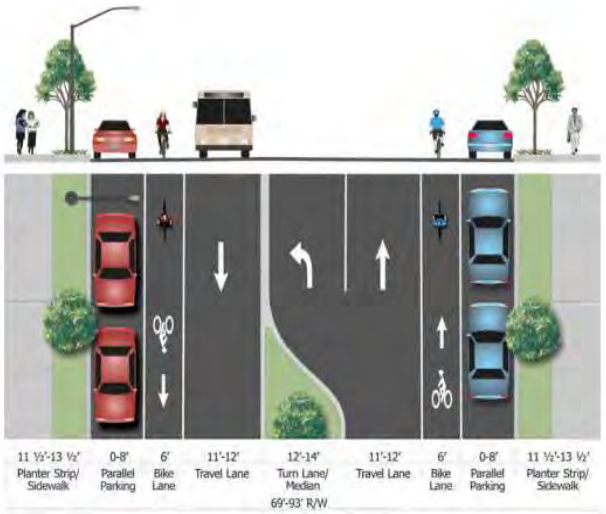
[9] Preliminary Site Plan, Drafted October 10th, 2023

[10] Figure 3-8, Transportation System Plan, City of Wilsonville, Amended November 2020

[11] Section 201.2.23 (Driveways), Public Works Standards, City of Wilsonville, Revised September 2017.

FRONTAGE IMPROVEMENTS

The project site shall provide street frontage improvements on Parkway Avenue that are consistent with the City of Wilsonville's collector cross section standard, for which the roadway is classified as such.[12] Today, SW Parkway Ave fronting the project site has 2 travel lanes, no bike lanes, sidewalk on one side, and unmarked on-street parking on both sides.



COLLECTOR CROSS SECTION STANDARD

The collector cross-section standard shows a center turn lane, bike lanes, planter strips, on-street parking, and sidewalks, however the width of the center turn lane/median and presence of other on-street facilities shall ultimately be approved by the Community Development Director and City Staff along the project frontage.

ON-SITE CIRCULATION

The City requires that all modes of transportation have safe and convenient on-site circulation to the highest degree that the site practically allows.[13] The site plan shows a 20-foot travel lane throughout the parking lot with adequate with for turning and parking maneuvers.

PEDESTRIAN AND BICYCLE FACILITIES

The City provides standards for pedestrian facilities within developments to provide safe and convenient accessibility for all pedestrians.[14] There is a proposed sidewalk that extends from the building to the sidewalk on SW Parkway Ave. Pedestrians and bicyclists can adequately access and utilize the development from SW Parkway Ave.

[12] Figure 3-7, Transportation System Plan, City of Wilsonville, Amended November 2020.
[13] Section 4.421, Wilsonville Development Code, Updated March 2023.
[14] Section 4.154, Wilsonville Development Code, Updated March 2023.

SUMMARY

The key findings of the transportation impact analysis (TIA) are discussed below.

- The proposed project is a specialty automobile sales and service center building that is approximately 37,500 square feet.
- The proposed development is expected to generate 89 total (36 in, 53 out) PM peak hour trips. 75% (67 vehicles) of those trips are expected to travel through the I-5 / Elligsen Rd interchange.
- The traffic operations at the three study intersections are expected to operate within the City's LOS standard and ODOT's mobility targets under all future analysis scenarios.
- Prior to occupancy, sight distance at the proposed project access points will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon.
- The proposed site plan does not meet the City's standards for minimum access spacing, however the proposed access is placed such that it has the least impact on the SROZ and has been approved by City staff.
- The proposed driveway aisle length does not meet the City standard length (100 feet, in this case), which is the distance between the back of the sidewalk to any parking stalls or another driveway aisle.

APPENDIX

APPENDIX A: SITE PLAN

APPENDIX B: TRAFFIC COUNT DATA

APPENDIX C: STAGE II LIST

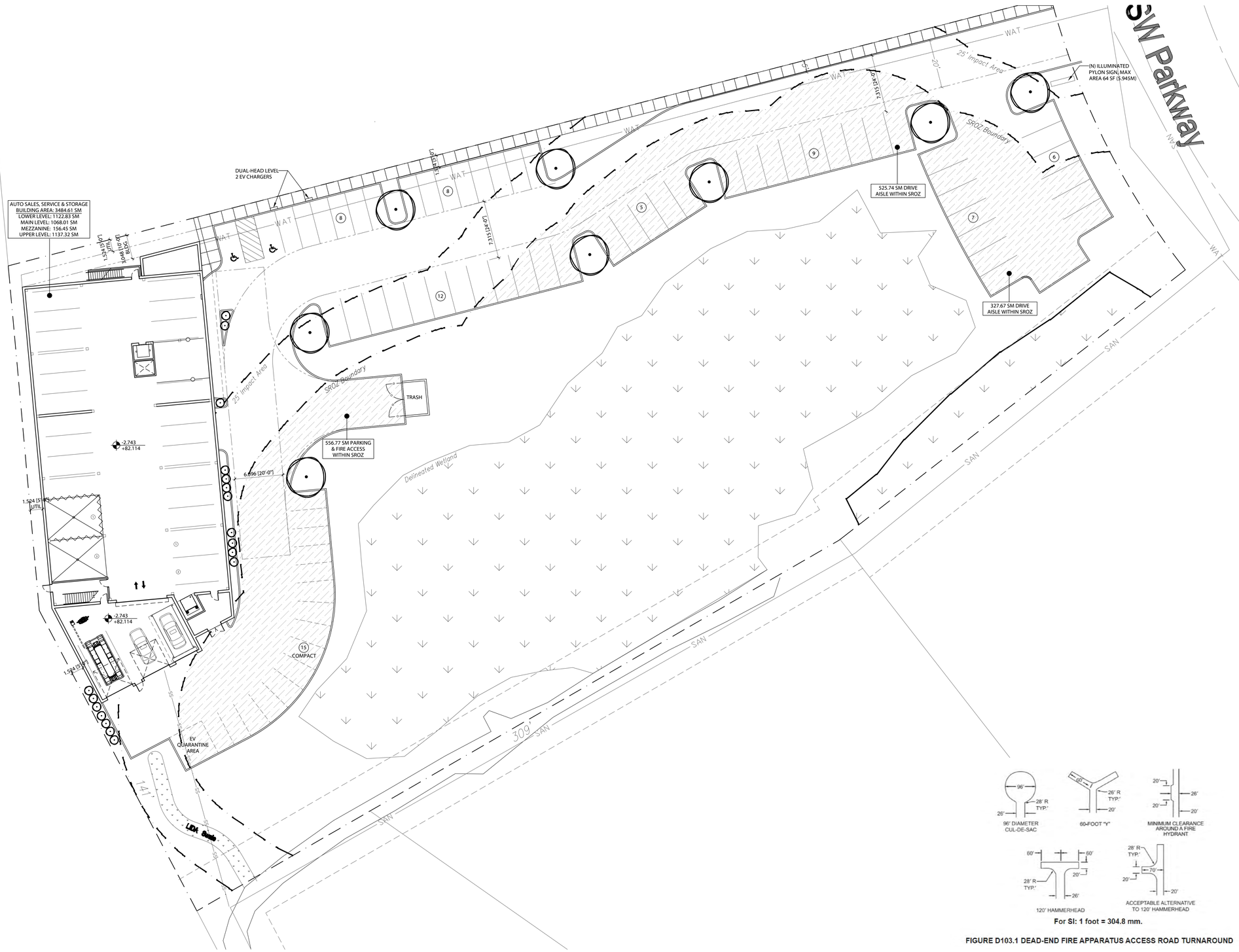
APPENDIX D: HCM REPORT - EXISTING

APPENDIX E: HCM REPORT – EXISTING + PROJECT

APPENDIX F: HCM REPORT – EXISTING + STAGE II

APPENDIX G: HCM REPORT – EXISTING + PROJECT + STAGE II

APPENDIX A: SITE PLAN



1 SITE PLAN @ LOWER LEVEL
SCALE: 1:200

For SI: 1 foot = 304.8 mm.

FIGURE D103.1 DEAD-END FIRE APPARATUS ACCESS ROAD TURNAROUND

DEVELOPMENT CODE SUMMARY:

TAX LOT:
3S-1-32DA TA LOT 1000, SW PARKWAY AVE, WILSONVILLE, OR

JURISDICTION: CLACKAMAS COUNTY, CITY OF WILSONVILLE DEVELOPMENT CODE
ZONING: PLANNED DEVELOPMENT COMMERCIAL (PDC)

CHAPTER 4 - PLANNING AND LAND DEVELOPMENT
SECTION 4.116 STANDARDS APPLYING TO COMMERCIAL DEVELOPMENTS IN ANY ZONE
.05 ALL BUSINESSES, SERVICE OR PROCESSING, SHALL BE CONDUCTED WHOLLY WITHIN A COMPLETELY ENCLOSED BUILDING EXCEPT FOR:
G. EXTERIOR SALES AREAS, COMPLYING WITH THE FOLLOWING:
1. THE SALES AREA SHALL BE ACCESSORY TO AND SHALL NOT EXCEED 5% OF THE FLOOR AREA OF THE PRIMARY RETAIL OPERATION.
2. THE SALES AREA SHALL BE COMPLETELY COVERED BY A PERMANENT STRUCTURE.
.10 COMMERCIAL DEVELOPMENTS (GENERAL)
SETBACKS: NONE REQUIRED, EXCEPT WHERE ABUTTING MORE RESTRICTIVE USE
BUILDING HEIGHT: 35' MAXIMUM

SECTION 4.131 PDC - PLANNED DEVELOPMENT COMMERCIAL ZONE
.01 PERMITTED USES:
1. RETAIL BUSINESS, GOODS AND SALES
2. ANY USE ALLOWED IN PDI ZONE (SERVICE) - WHEN CONDUCTED ENTIRELY WITHIN ENCLOSED BUILDING.
.02 PROHIBITED USES:
1. NO USED CAR SALES SHALL BE PERMITTED, EXCEPT IN CONJUNCTION WITH NEW CAR DEALERSHIPS WITHIN ENCLOSED BUILDINGS.

SECTION 4.139 SIGNIFICANT RESOURCE OVERLAY ZONE (SROZ) ORDINANCE
THE SR IMPACT AREA IS ALWAYS 25 FEET WIDE FROM THE EDGE OF THE SR.

SECTION 4.139.03 ADMINISTRATION
.02 IMPACT AREA. THE IMPACT AREA IS THE AREA ADJACENT TO THE OUTER BOUNDARY OF A SR WITHIN WHICH DEVELOPMENT OR OTHER ALTERATION ACTIVITIES MAY BE PERMITTED THROUGH THE REVIEW OF AN SRIR (SIGNIFICANT RESOURCE IMPACT REPORT)
.04 PROHIBITED ACTIVITIES. NEW STRUCTURES, DEVELOPMENT AND CONSTRUCTION ACTIVITIES SHALL NOT BE PERMITTED WITHIN THE SROZ IF THEY WILL NEGATIVELY IMPACT SIGNIFICANT NATURAL RESOURCES. UNAUTHORIZED LAND CLEARING OR GRADING OF THE SITE TO ALTER SITE CONDITIONS IS NOT ALLOWED.

SECTION 4.139.05 SIGNIFICANT RESOURCE OVERLAY ZONE MAP VERIFICATION
.01 IN ORDER TO CONFIRM THE LOCAITON OF THE SROZ, MAP VERIFICATION SHALL BE REQUIRED OR ALLOWED AS FOLLOWS:
A. DEVELOPMENT THAT IS PROPOSED TO BE EITHER IN THE SROZ OR LESS THAN 100 FEET OUTSIDE OF THE BOUNDARY OF THE SROZ, AS SHOWN ON THE SROZ MAP.

SECTION 4.139.06 SRIR AND REVIEW CRITERIA
AN SRIR IS ONLY REQUIRED FOR NON-EXEMPT DEVELOPMENT THAT IS LOCATED WITHIN THE SROZ AND/OR ITS ASSOCIATED 25 FOOT IMPACT AREA.

SECTION 4.139.09 ACTIVITIES REQUIRING A CLASS II ADMIN REVIEW PROCESS
.01 THE REVIEW OF ANY ACTION REQUIRING AN SRIR

SECTION 4.139.11 SPECIAL PROVISIONS
.01 REDUCED FRONT, REAR AND SIDE YARD SETBACK. APPLICATIONS ON PROPERTIES CONTAINING THE SROZ MAY REDUCE THE FRONT, REAR AND SIDE YARD SETBACK FOR DEVELOPMENTS OR ADDITIONS TO PROTECT THE SR, AS APPROVED BY THE DEVELOPMENT BOARD.

SECTION 4.140 PLANNED DEVELOPMENT REGULATIONS
.05 ALL PARCELS OF LAND EXCEEDING TWO ACRES IN SIZE THAT ARE TO BE USED FOR RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT, SHALL, PRIOR TO THE ISSUANCE OF ANY BUILDING PERMIT:
1. BE ZONED FOR PLANNED DEVELOPMENT
2. OBTAIN A PLANNED DEVELOPMENT PERMIT (PRE-APP, STAGE 1, STAGE 2 PROCESSES)
3. OBTAIN PLANNING DIRECTOR, DEVELOPMENT REVIEW BOARD, OR, ON APPEAL, CITY COUNCIL APPROVAL

SECTION 4.154 ON-SITE PEDESTRIAN ACCESS AND CIRCULATION
.01 ON-SITE PEDESTRIAN ACCESS AND CIRCULATION
B1. CONTINUOUS PATHWAY SYSTEM. A PED PATHWAY SYSTEM SHALL EXTEND THROUGHOUT THE DEVELOPMENT SITE AND CONNECT TO ADJACENT SIDEWALKS. (REQUEST VARIANCE?)
B4. CROSSWALKS. WHERE PATHWAY CROSSES A PARKING AREA OR DRIVEWAY, IT SHALL BE CLEARLY MARKED WITH CONTRASTING PAINT OR PAVING MATERIALS.
B5. PATHWAY WIDTH AND SURFACE. PRIMARY PATHWAY SHALL BE CONSTRUCTED OF CONCRETE, ASPHALT, BRICK/MASONRY PAVERS, NOT LESS THAN 5' WIDE.

SECTION 4.155 GENERAL REGULATIONS - PARKING, LOADING & BICYCLE PARKING
PARKING SPACE = 9' X 18'
COMPACT SPACE = 7'-6" X 15'
BIKE SPACE = 2' X 6' WITH 5' AISLE (LOCATE WITHIN 30' BUILDING ENTRANCE)
LOADING SPACE = 12' X 35' WITH 14' CLEAR HT

.02 GENERAL PROVISIONS
N. UP TO 40% OF THE OFF-STREET SPACES MAY BE COMPACT SPACES.
O. WHERE OFF-STREET PARKING SPACES OVERHANG BEYOND CURBS, LANDSCAPE AREA SHALL BE INCREASED TO MINIMUM OF 7'-0" IN DEPTH.

.03 MINIMUM AND MAXIMUM OFF-STREET PARKING REQUIREMENTS
B. PARKING AREAS OVER 650 SF: LANDSCAPE REQUIREMENTS:
1. LANDSCAPING OF AT LEAST 10% OF THE PARKING AREA. SHALL BE CONSIDERED TO BE PART OF THE 15% TOTAL LANDSCAPING REQUIRED FOR DEVELOPMENT.
2. LANDSCAPE TREE PLANTING AREAS SHALL BE MINIMUM 8'-0" WIDTH AND LENGTH SPACED EVERY 8 PARKING SPACES.
A. TREES SHALL BE PLANTED IN A RATIO OF 1 TREE PER 8 PARKING SPACES.
3E. ALL PARKING LOTS VIEWED FROM PUBLIC R.O.W. SHALL HAVE MINIMUM 12'-0" LANDSCAPED BUFFER EXTENDING FROM EDGE OF PROPERTY LINE AT R.O.W. TO EDGE OF THE PARKING AREA. BUFFER LANDSCAPING TO MEET LOW SCREEN STANDARD.
C. OFF STREET PARKING, PROVIDE 1 ADA SPACE FOR EVERY 50 STANDARD SPACES.

TABLE 5 PARKING STANDARDS

	PARKING MIN	PARKING MAX	BIKE PARKING MIN
SERVICE/REPAIR SHOPS	4.1 PER 1,000 SF	6.2 PER 1,000 SF	1 PER 4,000 SF
RETAIL - AUTOMOTIVE	1.67 PER 1,000 SF	6.2 PER 1,000 SF	1 PER 8,000 SF (MIN 2)

.05 MINIMUM OFF-STREET LOADING REQUIREMENTS
1. COMMERCIAL, INDUSTRIAL, AND PUBLIC UTILITY USES WHICH HAVE GFA OF 5,000 SF OR MORE SHALL PROVIDE TRUCK LOADING PER FOLLOWING:
5,000 - 30,000 SF = 1 LOADING SPACE

SECTION 4.156.08 SIGN REGULATIONS IN PDC, TC, PDI, AND PF ZONES
.01 FREESTANDING AND GROUND MOUNTED SIGNS
A. ONE FREESTANDING OR GROUND MOUNTED SIGN IS ALLOWED FOR FIRST 200 FEET OF SITE FRONTAGE.
B. ALLOWED HEIGHT ABOVE GROUND OF FREESTANDING OR GROUND MOUNTED SIGN IS 20 FEET.
C. MAX ALLOWED SIGN AREA DETERMINED BASED ON GFA.
26,000 SF OR MORE: 64 SF MAX SIGN AREA

2. SIGNS FRONTING INTERSTATE 5:
A. FOR SIGNS ON PROPERTIES OR WITHIN DEVELOPMENTS WITH A SINGLE TENANT OR BUSINESS THE SIGN AREA ALLOWED IS 64 SF.
.02 SIGNS ON BUILDINGS
LINEAR LENGTH OF FACADE: GREATER THAN 72 = 36 SF SIGN AREA ALLOWED PLUS 12 SF FOR EACH 24 LINEAR FEET OR PORTION THEREOF GREATER THAN 72 UP TO A MAXIMUM OF 200 SF.
.03 ADDITIONAL SIGNS
B. PLANNED DEVELOPMENT SIGNS: UP TO 32 SF OF THE ALLOWED SIGN AREA FOR FREESTANDING SIGNS IN A PD MAY BE USED FOR A SEPARATE ON-SITE MONUMENT SIGN OR OFF-SITE MONUMENT SIGN ON AN ADJACENT PARCEL.

SECTION 4.176 LANDSCAPING, SCREENING AND BUFFERING
.03 LANDSCAPE AREA. NOT LESS THAN 15% OF THE TOTAL LOT AREA, SHALL BE LANDSCAPED. 10% PARKING AREA LANDSCAPING IS INCLUDED. LANDSCAPING SHALL BE LOCATED IN AT LEAST THREE SEPARATE AND DISTINCT AREAS OF THE LOT, ONE OF WHICH MUST BE IN THE CONTIGUOUS FRONTAGE AREA.

SECTION 4.179 MIXED SOLID WASTE AND RECYCLABLES STORAGE
.01 REQUIRED FOR ALL SITE PLANS.
.06 SPECIFIC REQUIREMENTS
B. NON-RESIDENTIAL BUILDINGS SHALL PROVIDE MINIMUM STORAGE AREA OF 10 SF PLUS:
2. RETAIL: 10 SF PER 1,000 SF GFA
OTHER: 4 SF PER 1,000 SF GFA

SECTION 4.199 OUTDOOR LIGHTING
SECTION 4.199.30 LIGHTING OVERLAY ZONES
.01 THE DESIGNATED LIGHTING ZONE AS INDICATED ON THE LIGHTING OVERLAY ZONE MAP FOR A COMMERCIAL, INDUSTRIAL, MULTI-FAMILY OR PUBLIC FACILITY PARCEL OR PROJECT SHALL DETERMINE THE LIMITATIONS FOR LIGHTING SYSTEMS AND FIXTURES AS SPECIFIED IN THIS ORDINANCE.
.02 LIGHTING ZONES
B. LZ 2: LOW-DENSITY SUBURBAN NEIGHBORHOODS AND SUBURBAN COMMERCIAL DISTRICTS, INDUSTRIAL PARKS AND DISTRICTS.
SECTION 4.199.40 LIGHTING SYSTEMS STANDARDS FOR APPROVAL
.01 NON-RESIDENTIAL
A. ALL OUTDOOR LIGHTING SHALL COMPLY WITH EITHER PRESCRIPTIVE OR PERFORMANCE OPTIONS.

OREGON FIRE CODE REQUIREMENTS - FIRE APPARATUS ACCESS ROADS
FIRE DEPT ACCESS ROADS MUST BE PROVIDED SO FIRE APPARATUS CAN DRIVE WITHIN 50 FT OF AN EXTERIOR DOOR THAT ALLOWS ACCESS TO THE INTERIOR OF THE BUILDING.

FIRE DEPT ACCESS ROADS NEED TO BE LOCATED SO ANY PORTION OF THE BUILDING IS NOT MORE THAN 150 FEET FROM FIRE DEPT ACCESS ROADS AS MEASURED AROUND PERIMETER OF BUILDING. THIS CAN BE INCREASED TO 450 FEET IN BUILDINGS PROTECTED WITH AUTOMATIC SPRINKLER SYSTEM.

D103.4 DEAD ENDS
DEAD-END FIRE APPARATUS ACCESS ROADS IN EXCESS OF 150 FEET SHALL BE PROVIDED WITH WIDTH AND TURNAROUND PROVISIONS IN ACCORDANCE WITH TABLE D103.4

LENGTH	WIDTH	TURNAROUND REQUIRED
1-150 FT	20 FT	NONE REQUIRED
151-500 SF	20 SF	120-FT HAMMERHEAD, 60-FT 'Y' OR 96-FT DIA CUL-DE-SAC
501-750 SF	26 SF	120-FT HAMMERHEAD, 60-FT 'Y' OR 96-FT DIA CUL-DE-SAC

*BUILDINGS EXCEEDING 30 FT IN HEIGHT REQUIRE MINIMUM OF TWO FIRE ACCESS ROUTES TO STRUCTURE(S), MUST FOLLOW AERIAL FIRE APPARATUS REQUIREMENTS, AND MUST PROVIDE MINIMUM 26 FT WIDE ACCESS ROUTES.

PRELIMINARY NOT FOR CONSTRUCTION

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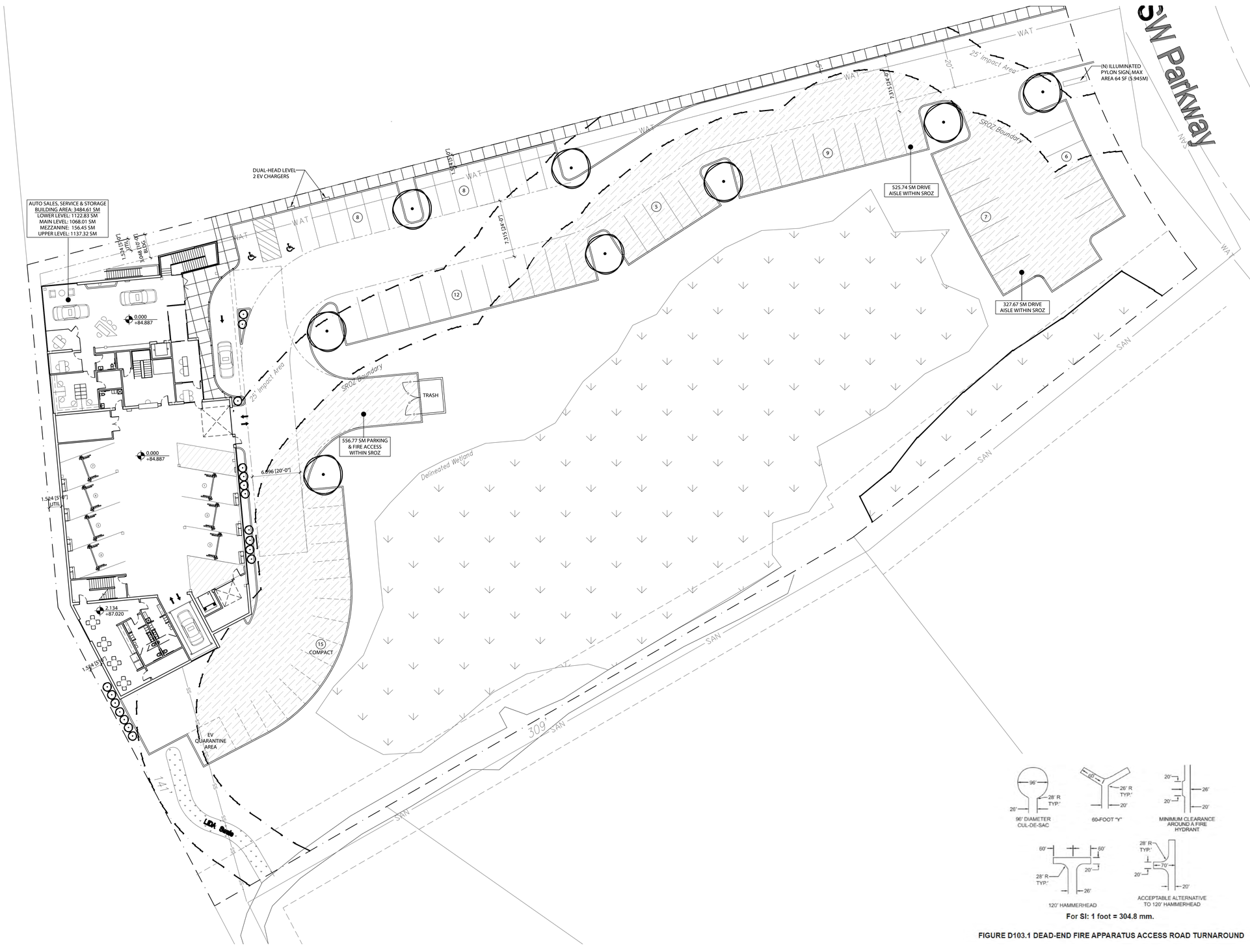
TONKIN LAMBORGHINI
3S-1-32DA TAX LOT 1000, SW PARKWAY AVE
WILSONVILLE, OR 97070

REVISIONS

No.	Description	Date

DRAWN BY: KJK
CHECKED BY: TRB
JOB NO: 22-033
DATE: 10/04/2023
ISSUED FOR: PRELIMINARY
SHEET TITLE
SITE PLAN @ LOWER LEVEL
SHEET NO.
A-101

C:\Users\kendrak\appdata\local\temp\AcPublish_24180\22-033 Base Site Plan.dwg @ Plot Date: Nov 13 23 @ Time: 11:18 AM



1 SITE PLAN @ MAIN LEVEL
SCALE: 1:200

FIGURE D103.1 DEAD-END FIRE APPARATUS ACCESS ROAD TURNAROUND

DEVELOPMENT CODE SUMMARY:

TAX LOT:
3S-1-32DA TA LOT 1000, SW PARKWAY AVE, WILSONVILLE, OR

JURISDICTION: CLACKAMAS COUNTY, CITY OF WILSONVILLE DEVELOPMENT CODE
ZONING: PLANNED DEVELOPMENT COMMERCIAL (PDC)

CHAPTER 4 - PLANNING AND LAND DEVELOPMENT
SECTION 4.116 STANDARDS APPLYING TO COMMERCIAL DEVELOPMENTS IN ANY ZONE
.05 ALL BUSINESSES, SERVICE OR PROCESSING, SHALL BE CONDUCTED WHOLLY WITHIN A COMPLETELY ENCLOSED BUILDING EXCEPT FOR:
G. EXTERIOR SALES AREAS, COMPLYING WITH THE FOLLOWING:
1. THE SALES AREA SHALL BE ACCESSORY TO AND SHALL NOT EXCEED 5% OF THE FLOOR AREA OF THE PRIMARY RETAIL OPERATION.
2. THE SALES AREA SHALL BE COMPLETELY COVERED BY A PERMANENT STRUCTURE.
.10 COMMERCIAL DEVELOPMENTS (GENERAL)
SETBACKS: NONE REQUIRED, EXCEPT WHERE ABUTTING MORE RESTRICTIVE USE
BUILDING HEIGHT: 35' MAXIMUM

SECTION 4.131 PDC - PLANNED DEVELOPMENT COMMERCIAL ZONE
.01 PERMITTED USES:
1. RETAIL BUSINESS, GOODS AND SALES
2. ANY USE ALLOWED IN PDI ZONE (SERVICE) - WHEN CONDUCTED ENTIRELY WITHIN ENCLOSED BUILDING.
.02 PROHIBITED USES:
1. NO USED CAR SALES SHALL BE PERMITTED, EXCEPT IN CONJUNCTION WITH NEW CAR DEALERSHIPS WITHIN ENCLOSED BUILDINGS.

SECTION 4.139 SIGNIFICANT RESOURCE OVERLAY ZONE (SROZ) ORDINANCE
THE SR IMPACT AREA IS ALWAYS 25 FEET WIDE FROM THE EDGE OF THE SR.

SECTION 4.139.03 ADMINISTRATION
.02 IMPACT AREA. THE IMPACT AREA IS THE AREA ADJACENT TO THE OUTER BOUNDARY OF A SR WITHIN WHICH DEVELOPMENT OR OTHER ALTERATION ACTIVITIES MAY BE PERMITTED THROUGH THE REVIEW OF AN SRIR (SIGNIFICANT RESOURCE IMPACT REPORT)
.04 PROHIBITED ACTIVITIES. NEW STRUCTURES, DEVELOPMENT AND CONSTRUCTION ACTIVITIES SHALL NOT BE PERMITTED WITHIN THE SROZ IF THEY WILL NEGATIVELY IMPACT SIGNIFICANT NATURAL RESOURCES. UNAUTHORIZED LAND CLEARING OR GRADING OF THE SITE TO ALTER SITE CONDITIONS IS NOT ALLOWED.

SECTION 4.139.05 SIGNIFICANT RESOURCE OVERLAY ZONE MAP VERIFICATION
.01 IN ORDER TO CONFIRM THE LOCAITON OF THE SROZ, MAP VERIFICATION SHALL BE REQUIRED OR ALLOWED AS FOLLOWS:
A. DEVELOPMENT THAT IS PROPOSED TO BE EITHER IN THE SROZ OR LESS THAN 100 FEET OUTSIDE OF THE BOUNDARY OF THE SROZ, AS SHOWN ON THE SROZ MAP.

SECTION 4.139.06 SRIR AND REVIEW CRITERIA
AN SRIR IS ONLY REQUIRED FOR NON-EXEMPT DEVELOPMENT THAT IS LOCATED WITHIN THE SROZ AND/OR ITS ASSOCIATED 25 FOOT IMPACT AREA.

SECTION 4.139.09 ACTIVITIES REQUIRING A CLASS II ADMIN REVIEW PROCESS
.01 THE REVIEW OF ANY ACTION REQUIRING AN SRIR

SECTION 4.139.11 SPECIAL PROVISIONS
.01 REDUCED FRONT, REAR AND SIDE YARD SETBACK. APPLICATIONS ON PROPERTIES CONTAINING THE SROZ MAY REDUCE THE FRONT, REAR AND SIDE YARD SETBACK FOR DEVELOPMENTS OR ADDITIONS TO PROTECT THE SR, AS APPROVED BY THE DEVELOPMENT BOARD.

SECTION 4.140 PLANNED DEVELOPMENT REGULATIONS
.05 ALL PARCELS OF LAND EXCEEDING TWO ACRES IN SIZE THAT ARE TO BE USED FOR RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT, SHALL, PRIOR TO THE ISSUANCE OF ANY BUILDING PERMIT:
1. BE ZONED FOR PLANNED DEVELOPMENT
2. OBTAIN A PLANNED DEVELOPMENT PERMIT (PRE-APP, STAGE 1, STAGE 2 PROCESSES)
3. OBTAIN PLANNING DIRECTOR, DEVELOPMENT REVIEW BOARD, OR, ON APPEAL, CITY COUNCIL APPROVAL

SECTION 4.154 ON-SITE PEDESTRIAN ACCESS AND CIRCULATION
.01 ON-SITE PEDESTRIAN ACCESS AND CIRCULATION
B1. CONTINUOUS PATHWAY SYSTEM. A PED PATHWAY SYSTEM SHALL EXTEND THROUGHOUT THE DEVELOPMENT SITE AND CONNECT TO ADJACENT SIDEWALKS. (REQUEST VARIANCE?)
B4. CROSSWALKS. WHERE PATHWAY CROSSES A PARKING AREA OR DRIVEWAY, IT SHALL BE CLEARLY MARKED WITH CONTRASTING PAINT OR PAVING MATERIALS.
B5. PATHWAY WIDTH AND SURFACE. PRIMARY PATHWAY SHALL BE CONSTRUCTED OF CONCRETE, ASPHALT, BRICK/MASONRY PAVERS, NOT LESS THAN 5' WIDE.

SECTION 4.155 GENERAL REGULATIONS - PARKING, LOADING & BICYCLE PARKING
PARKING SPACE = 9' X 18'
COMPACT SPACE = 7'-6" X 15'
BIKE SPACE = 2' X 6' WITH 5' AISLE (LOCATE WITHIN 30' BUILDING ENTRANCE)
LOADING SPACE = 12' X 35' WITH 14' CLEAR HT

.02 GENERAL PROVISIONS
N. UP TO 40% OF THE OFF-STREET SPACES MAY BE COMPACT SPACES.
O. WHERE OFF-STREET PARKING SPACES OVERHANG BEYOND CURBS, LANDSCAPE AREA SHALL BE INCREASED TO MINIMUM OF 7'-0" IN DEPTH.

.03 MINIMUM AND MAXIMUM OFF-STREET PARKING REQUIREMENTS
B. PARKING AREAS OVER 650 SF; LANDSCAPE REQUIREMENTS:
1. LANDSCAPING OF AT LEAST 10% OF THE PARKING AREA, SHALL BE CONSIDERED TO BE PART OF THE 15% TOTAL LANDSCAPING REQUIRED FOR DEVELOPMENT.
2. LANDSCAPE TREE PLANTING AREAS SHALL BE MINIMUM 8'-0" WIDTH AND LENGTH SPACED EVERY 8 PARKING SPACES.
A. TREES SHALL BE PLANTED IN A RATIO OF 1 TREE PER 8 PARKING SPACES.
3E. ALL PARKING LOTS VIEWED FROM PUBLIC R.O.W. SHALL HAVE MINIMUM 12'-0" LANDSCAPED BUFFER EXTENDING FROM EDGE OF PROPERTY LINE AT R.O.W. TO EDGE OF THE PARKING AREA. BUFFER LANDSCAPING TO MEET LOW SCREEN STANDARD.
C. OFF STREET PARKING. PROVIDE 1 ADA SPACE FOR EVERY 50 STANDARD SPACES.

TABLE 5 PARKING STANDARDS

	PARKING MIN	PARKING MAX	BIKE PARKING MIN
SERVICE/REPAIR SHOPS	4.1 PER 1,000 SF	6.2 PER 1,000 SF	1 PER 4,000 SF
RETAIL - AUTOMOTIVE	1.67 PER 1,000 SF	6.2 PER 1,000 SF	1 PER 8,000 SF (MIN 2)

.05 MINIMUM OFF-STREET LOADING REQUIREMENTS
1. COMMERCIAL, INDUSTRIAL, AND PUBLIC UTILITY USES WHICH HAVE GFA OF 5,000 SF OR MORE SHALL PROVIDE TRUCK LOADING PER FOLLOWING:
5,000 - 30,000 SF = 1 LOADING SPACE

SECTION 4.156.08 SIGN REGULATIONS IN PDC, TC, PDI, AND PF ZONES
.01 FREESTANDING AND GROUND MOUNTED SIGNS
A. ONE FREESTANDING OR GROUND MOUNTED SIGN IS ALLOWED FOR FIRST 200 FEET OF SITE FRONTAGE.
B. ALLOWED HEIGHT ABOVE GROUND OF FREESTANDING OR GROUND MOUNTED SIGN IS 20 FEET.
C. MAX ALLOWED SIGN AREA DETERMINED BASED ON GFA.
26,000 SF OR MORE: 64 SF MAX SIGN AREA

2. SIGNS FRONTING INTERSTATE 5:
A. FOR SIGNS ON PROPERTIES OR WITHIN DEVELOPMENTS WITH A SINGLE TENANT OR BUSINESS THE SIGN AREA ALLOWED IS 64 SF.
.02 SIGNS ON BUILDINGS
LINEAR LENGTH OF FACADE: GREATER THAN 72 = 36 SF SIGN AREA ALLOWED PLUS 12 SF FOR EACH 24 LINEAR FEET OR PORTION THEREOF GREATER THAN 72 UP TO A MAXIMUM OF 200 SF.
.03 ADDITIONAL SIGNS
B. PLANNED DEVELOPMENT SIGNS: UP TO 32 SF OF THE ALLOWED SIGN AREA FOR FREESTANDING SIGNS IN A PD MAY BE USED FOR A SEPARATE ON-SITE MONUMENT SIGN OR OFF-SITE MONUMENT SIGN ON AN ADJACENT PARCEL.

SECTION 4.176 LANDSCAPING, SCREENING AND BUFFERING
.03 LANDSCAPE AREA. NOT LESS THAN 15% OF THE TOTAL LOT AREA, SHALL BE LANDSCAPED. 10% PARKING AREA LANDSCAPING IS INCLUDED. LANDSCAPING SHALL BE LOCATED IN AT LEAST THREE SEPARATE AND DISTINCT AREAS OF THE LOT, ONE OF WHICH MUST BE IN THE CONTIGUOUS FRONTAGE AREA.

SECTION 4.179 MIXED SOLID WASTE AND RECYCLABLES STORAGE
.01 REQUIRED FOR ALL SITE PLANS.
.06 SPECIFIC REQUIREMENTS
B. NON-RESIDENTIAL BUILDINGS SHALL PROVIDE MINIMUM STORAGE AREA OF 10 SF PLUS:
2. RETAIL: 10 SF PER 1,000 SF GFA
OTHER: 4 SF PER 1,000 SF GFA

SECTION 4.199 OUTDOOR LIGHTING
SECTION 4.199.30 LIGHTING OVERLAY ZONES
.01 THE DESIGNATED LIGHTING ZONE AS INDICATED ON THE LIGHTING OVERLAY ZONE MAP FOR A COMMERCIAL, INDUSTRIAL, MULTI-FAMILY OR PUBLIC FACILITY PARCEL OR PROJECT SHALL DETERMINE THE LIMITATIONS FOR LIGHTING SYSTEMS AND FIXTURES AS SPECIFIED IN THIS ORDINANCE.
.02 LIGHTING ZONES
B. LZ 2: LOW-DENSITY SUBURBAN NEIGHBORHOODS AND SUBURBAN COMMERCIAL DISTRICTS, INDUSTRIAL PARKS AND DISTRICTS.
SECTION 4.199.40 LIGHTING SYSTEMS STANDARDS FOR APPROVAL
.01 NON-RESIDENTIAL
A. ALL OUTDOOR LIGHTING SHALL COMPLY WITH EITHER PRESCRIPTIVE OR PERFORMANCE OPTIONS.

OREGON FIRE CODE REQUIREMENTS - FIRE APPARATUS ACCESS ROADS
FIRE DEPT ACCESS ROADS MUST BE PROVIDED SO FIRE APPARATUS CAN DRIVE WITHIN 50 FT OF AN EXTERIOR DOOR THAT ALLOWS ACCESS TO THE INTERIOR OF THE BUILDING.

FIRE DEPT ACCESS ROADS NEED TO BE LOCATED SO ANY PORTION OF THE BUILDING IS NOT MORE THAN 150 FEET FROM FIRE DEPT ACCESS ROADS AS MEASURED AROUND PERIMETER OF BUILDING. THIS CAN BE INCREASED TO 450 FEET IN BUILDINGS PROTECTED WITH AUTOMATIC SPRINKLER SYSTEM.

D103.4 DEAD ENDS
DEAD-END FIRE APPARATUS ACCESS ROADS IN EXCESS OF 150 FEET SHALL BE PROVIDED WITH WIDTH AND TURNAROUND PROVISIONS IN ACCORDANCE WITH TABLE D103.4

LENGTH	WIDTH	TURNAROUND REQUIRED
1-150 FT	20 FT	NONE REQUIRED
151-500 SF	20 SF	120-FT HAMMERHEAD, 60-FT "Y" OR 96-FT DIA CUL-DE-SAC
501-750 SF	26 SF	120-FT HAMMERHEAD, 60-FT "Y" OR 96-FT DIA CUL-DE-SAC

*BUILDINGS EXCEEDING 30 FT IN HEIGHT REQUIRE MINIMUM OF TWO FIRE ACCESS ROUTES TO STRUCTURE(S), MUST FOLLOW AERIAL FIRE APPARATUS REQUIREMENTS, AND MUST PROVIDE MINIMUM 26 FT WIDE ACCESS ROUTES.

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TONKIN LAMBORGHINI
3S-1-32DA TAX LOT 1000, SW PARKWAY AVE
WILSONVILLE, OR 97070

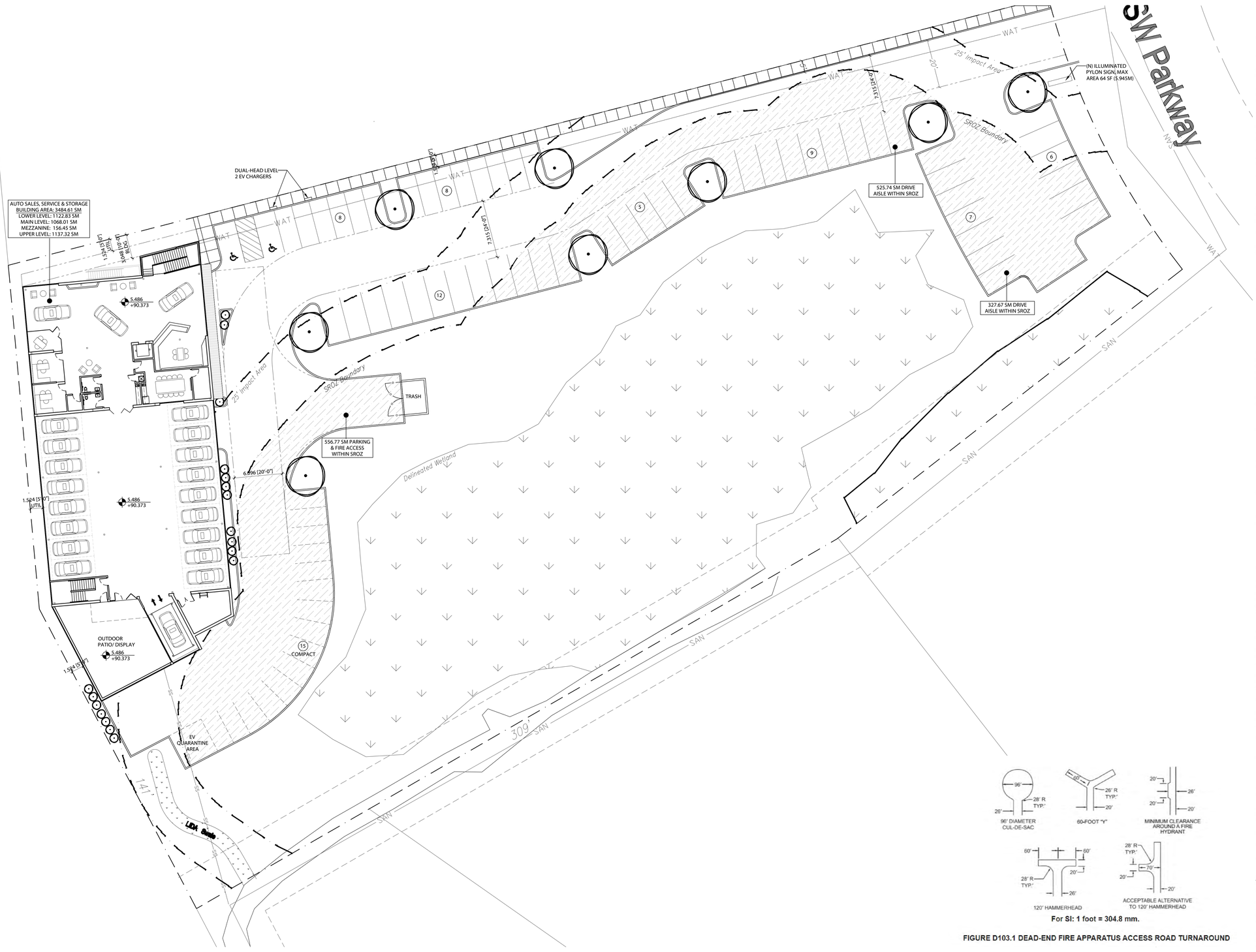
REVISIONS

No.	Description	Date

DRAWN BY: KJK
CHECKED BY: TRB
JOB NO: 22-033
DATE: 10/04/2023
ISSUED FOR: PRELIMINARY

SHEET TITLE
SITE PLAN @ MAIN LEVEL

SHEET NO.
A-102



For SI: 1 foot = 304.8 mm.

FIGURE D103.1 DEAD-END FIRE APPARATUS ACCESS ROAD TURNAROUND

1 SITE PLAN @ UPPER LEVEL
SCALE: 1:200

N

DEVELOPMENT CODE SUMMARY:

TAX LOT:
3S-1-32DA TA LOT 1000, SW PARKWAY AVE, WILSONVILLE, OR

JURISDICTION: CLACKAMAS COUNTY, CITY OF WILSONVILLE DEVELOPMENT CODE
ZONING: PLANNED DEVELOPMENT COMMERCIAL (PDC)

CHAPTER 4 - PLANNING AND LAND DEVELOPMENT
SECTION 4.116 STANDARDS APPLYING TO COMMERCIAL DEVELOPMENTS IN ANY ZONE
.05 ALL BUSINESSES, SERVICE OR PROCESSING, SHALL BE CONDUCTED WHOLLY WITHIN A COMPLETELY ENCLOSED BUILDING EXCEPT FOR:
G. EXTERIOR SALES AREAS, COMPLYING WITH THE FOLLOWING:
1. THE SALES AREA SHALL BE ACCESSORY TO AND SHALL NOT EXCEED 5% OF THE FLOOR AREA OF THE PRIMARY RETAIL OPERATION.
2. THE SALES AREA SHALL BE COMPLETELY COVERED BY A PERMANENT STRUCTURE.
.10 COMMERCIAL DEVELOPMENTS (GENERAL)
SETBACKS: NONE REQUIRED, EXCEPT WHERE ABUTTING MORE RESTRICTIVE USE
BUILDING HEIGHT: 35' MAXIMUM

SECTION 4.131 PDC - PLANNED DEVELOPMENT COMMERCIAL ZONE
.01 PERMITTED USES:
1. RETAIL BUSINESS, GOODS AND SALES
2. ANY USE ALLOWED IN PDI ZONE (SERVICE) - WHEN CONDUCTED ENTIRELY WITHIN ENCLOSED BUILDING.
.02 PROHIBITED USES:
1. NO USED CAR SALES SHALL BE PERMITTED, EXCEPT IN CONJUNCTION WITH NEW CAR DEALERSHIPS WITHIN ENCLOSED BUILDINGS.

SECTION 4.139 SIGNIFICANT RESOURCE OVERLAY ZONE (SROZ) ORDINANCE
THE SR IMPACT AREA IS ALWAYS 25 FEET WIDE FROM THE EDGE OF THE SR.

SECTION 4.139.03 ADMINISTRATION
.02 IMPACT AREA. THE IMPACT AREA IS THE AREA ADJACENT TO THE OUTER BOUNDARY OF A SR WITHIN WHICH DEVELOPMENT OR OTHER ALTERATION ACTIVITIES MAY BE PERMITTED THROUGH THE REVIEW OF AN SRIR (SIGNIFICANT RESOURCE IMPACT REPORT)
.04 PROHIBITED ACTIVITIES. NEW STRUCTURES, DEVELOPMENT AND CONSTRUCTION ACTIVITIES SHALL NOT BE PERMITTED WITHIN THE SROZ IF THEY WILL NEGATIVELY IMPACT SIGNIFICANT NATURAL RESOURCES. UNAUTHORIZED LAND CLEARING OR GRADING OF THE SITE TO ALTER SITE CONDITIONS IS NOT ALLOWED.

SECTION 4.139.05 SIGNIFICANT RESOURCE OVERLAY ZONE MAP VERIFICATION
.01 IN ORDER TO CONFIRM THE LOCAITON OF THE SROZ, MAP VERIFICATION SHALL BE REQUIRED OR ALLOWED AS FOLLOWS:
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AN SRIR IS ONLY REQUIRED FOR NON-EXEMPT DEVELOPMENT THAT IS LOCATED WITHIN THE SROZ AND/OR ITS ASSOCIATED 25 FOOT IMPACT AREA.

SECTION 4.139.09 ACTIVITIES REQUIRING A CLASS II ADMIN REVIEW PROCESS
.01 THE REVIEW OF ANY ACTION REQUIRING AN SRIR

SECTION 4.139.11 SPECIAL PROVISIONS
.01 REDUCED FRONT, REAR AND SIDE YARD SETBACK. APPLICATIONS ON PROPERTIES CONTAINING THE SROZ MAY REDUCE THE FRONT, REAR AND SIDE YARD SETBACK FOR DEVELOPMENTS OR ADDITIONS TO PROTECT THE SR, AS APPROVED BY THE DEVELOPMENT BOARD.

SECTION 4.140 PLANNED DEVELOPMENT REGULATIONS
.05 ALL PARCELS OF LAND EXCEEDING TWO ACRES IN SIZE THAT ARE TO BE USED FOR RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT, SHALL, PRIOR TO THE ISSUANCE OF ANY BUILDING PERMIT:
1. BE ZONED FOR PLANNED DEVELOPMENT
2. OBTAIN A PLANNED DEVELOPMENT PERMIT (PRE-APP, STAGE 1, STAGE 2 PROCESSES)
3. OBTAIN PLANNING DIRECTOR, DEVELOPMENT REVIEW BOARD, OR, ON APPEAL, CITY COUNCIL APPROVAL

SECTION 4.154 ON-SITE PEDESTRIAN ACCESS AND CIRCULATION
.01 ON-SITE PEDESTRIAN ACCESS AND CIRCULATION
B1. CONTINUOUS PATHWAY SYSTEM. A PED PATHWAY SYSTEM SHALL EXTEND THROUGHOUT THE DEVELOPMENT SITE AND CONNECT TO ADJACENT SIDEWALKS. (REQUEST VARIANCE?)
B4. CROSSWALKS. WHERE PATHWAY CROSSES A PARKING AREA OR DRIVEWAY, IT SHALL BE CLEARLY MARKED WITH CONTRASTING PAINT OR PAVING MATERIALS.
B5. PATHWAY WIDTH AND SURFACE. PRIMARY PATHWAY SHALL BE CONSTRUCTED OF CONCRETE, ASPHALT, BRICK/MASONRY PAVERS, NOT LESS THAN 5' WIDE.

SECTION 4.155 GENERAL REGULATIONS - PARKING, LOADING & BICYCLE PARKING
PARKING SPACE = 9' X 18'
COMPACT SPACE = 7'-6" X 15'
BIKE SPACE = 2' X 6' WITH 5' AISLE (LOCATE WITHIN 30' BUILDING ENTRANCE)
LOADING SPACE = 12' X 35' WITH 14' CLEAR HT

.02 GENERAL PROVISIONS
N. UP TO 40% OF THE OFF-STREET SPACES MAY BE COMPACT SPACES.
O. WHERE OFF-STREET PARKING SPACES OVERHANG BEYOND CURBS, LANDSCAPE AREA SHALL BE INCREASED TO MINIMUM OF 7'-0" IN DEPTH.

.03 MINIMUM AND MAXIMUM OFF-STREET PARKING REQUIREMENTS
B. PARKING AREAS OVER 650 SF: LANDSCAPE REQUIREMENTS:
1. LANDSCAPING OF AT LEAST 10% OF THE PARKING AREA. SHALL BE CONSIDERED TO BE PART OF THE 15% TOTAL LANDSCAPING REQUIRED FOR DEVELOPMENT.
2. LANDSCAPE TREE PLANTING AREAS SHALL BE MINIMUM 8'-0" WIDTH AND LENGTH SPACED EVERY 8 PARKING SPACES.
A. TREES SHALL BE PLANTED IN A RATIO OF 1 TREE PER 8 PARKING SPACES.
3E. ALL PARKING LOTS VIEWED FROM PUBLIC R.O.W. SHALL HAVE MINIMUM 12'-0" LANDSCAPED BUFFER EXTENDING FROM EDGE OF PROPERTY LINE AT R.O.W. TO EDGE OF THE PARKING AREA. BUFFER LANDSCAPING TO MEET LOW SCREEN STANDARD.
C. OFF STREET PARKING. PROVIDE 1 ADA SPACE FOR EVERY 50 STANDARD SPACES.

TABLE 5 PARKING STANDARDS

	PARKING MIN	PARKING MAX	BIKE PARKING MIN
SERVICE/REPAIR SHOPS	4.1 PER 1,000 SF	6.2 PER 1,000 SF	1 PER 4,000 SF
RETAIL - AUTOMOTIVE	1.67 PER 1,000 SF	6.2 PER 1,000 SF	1 PER 8,000 SF (MIN 2)

.05 MINIMUM OFF-STREET LOADING REQUIREMENTS
1. COMMERCIAL, INDUSTRIAL, AND PUBLIC UTILITY USES WHICH HAVE GFA OF 5,000 SF OR MORE SHALL PROVIDE TRUCK LOADING PER FOLLOWING:
5,000 - 30,000 SF = 1 LOADING SPACE

SECTION 4.156.08 SIGN REGULATIONS IN PDC, TC, PDI, AND PF ZONES
.01 FREESTANDING AND GROUND MOUNTED SIGNS
A. ONE FREESTANDING OR GROUND MOUNTED SIGN IS ALLOWED FOR FIRST 200 FEET OF SITE FRONTAGE.
B. ALLOWED HEIGHT ABOVE GROUND OF FREESTANDING OR GROUND MOUNTED SIGN IS 20 FEET.
C. MAX ALLOWED SIGN AREA DETERMINED BASED ON GFA.
26,000 SF OR MORE: 64 SF MAX SIGN AREA

2. SIGNS FRONTING INTERSTATE 5:
A. FOR SIGNS ON PROPERTIES OR WITHIN DEVELOPMENTS WITH A SINGLE TENANT OR BUSINESS THE SIGN AREA ALLOWED IS 64 SF.
.02 SIGNS ON BUILDINGS
LINEAR LENGTH OF FACADE: GREATER THAN 72 = 36 SF SIGN AREA ALLOWED PLUS 12 SF FOR EACH 24 LINEAR FEET OR PORTION THEREOF GREATER THAN 72 UP TO A MAXIMUM OF 200 SF.
.03 ADDITIONAL SIGNS
B. PLANNED DEVELOPMENT SIGNS: UP TO 32 SF OF THE ALLOWED SIGN AREA FOR FREESTANDING SIGNS IN A PD MAY BE USED FOR A SEPARATE ON-SITE MONUMENT SIGN OR OFF-SITE MONUMENT SIGN ON AN ADJACENT PARCEL.

SECTION 4.176 LANDSCAPING, SCREENING AND BUFFERING
.03 LANDSCAPE AREA: NOT LESS THAN 15% OF THE TOTAL LOT AREA, SHALL BE LANDSCAPED. 10% PARKING AREA LANDSCAPING IS INCLUDED. LANDSCAPING SHALL BE LOCATED IN AT LEAST THREE SEPARATE AND DISTINCT AREAS OF THE LOT, ONE OF WHICH MUST BE IN THE CONTIGUOUS FRONTAGE AREA.

SECTION 4.179 MIXED SOLID WASTE AND RECYCLABLES STORAGE
.01 REQUIRED FOR ALL SITE PLANS.
.06 SPECIFIC REQUIREMENTS
B. NON-RESIDENTIAL BUILDINGS SHALL PROVIDE MINIMUM STORAGE AREA OF 10 SF PLUS:
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OTHER: 4 SF PER 1,000 SF GFA

SECTION 4.199 OUTDOOR LIGHTING
SECTION 4.199.30 LIGHTING OVERLAY ZONES
.01 THE DESIGNATED LIGHTING ZONE AS INDICATED ON THE LIGHTING OVERLAY ZONE MAP FOR A COMMERCIAL, INDUSTRIAL, MULTI-FAMILY OR PUBLIC FACILITY PARCEL OR PROJECT SHALL DETERMINE THE LIMITATIONS FOR LIGHTING SYSTEMS AND FIXTURES AS SPECIFIED IN THIS ORDINANCE.
.02 LIGHTING ZONES
B. LZ 2: LOW-DENSITY SUBURBAN NEIGHBORHOODS AND SUBURBAN COMMERCIAL DISTRICTS, INDUSTRIAL PARKS AND DISTRICTS.
SECTION 4.199.40 LIGHTING SYSTEMS STANDARDS FOR APPROVAL
.01 NON-RESIDENTIAL
A. ALL OUTDOOR LIGHTING SHALL COMPLY WITH EITHER PRESCRIPTIVE OR PERFORMANCE OPTIONS.

OREGON FIRE CODE REQUIREMENTS - FIRE APPARATUS ACCESS ROADS
FIRE DEPT ACCESS ROADS MUST BE PROVIDED SO FIRE APPARATUS CAN DRIVE WITHIN 50 FT OF AN EXTERIOR DOOR THAT ALLOWS ACCESS TO THE INTERIOR OF THE BUILDING.

FIRE DEPT ACCESS ROADS NEED TO BE LOCATED SO ANY PORTION OF THE BUILDING IS NOT MORE THAN 150 FEET FROM FIRE DEPT ACCESS ROADS AS MEASURED AROUND PERIMETER OF BUILDING. THIS CAN BE INCREASED TO 450 FEET IN BUILDINGS PROTECTED WITH AUTOMATIC SPRINKLER SYSTEM.

D103.4 DEAD ENDS
DEAD-END FIRE APPARATUS ACCESS ROADS IN EXCESS OF 150 FEET SHALL BE PROVIDED WITH WIDTH AND TURNAROUND PROVISIONS IN ACCORDANCE WITH TABLE D103.4

LENGTH	WIDTH	TURNAROUND REQUIRED
1-150 FT	20 FT	NONE REQUIRED
151-500 SF	20 SF	120-FT HAMMERHEAD, 60-FT 'Y' OR 96-FT DIA CUL-DE-SAC
501-750 SF	26 SF	120-FT HAMMERHEAD, 60-FT 'Y' OR 96-FT DIA CUL-DE-SAC

*BUILDINGS EXCEEDING 30 FT IN HEIGHT REQUIRE MINIMUM OF TWO FIRE ACCESS ROUTES TO STRUCTURE(S), MUST FOLLOW AERIAL FIRE APPARATUS REQUIREMENTS, AND MUST PROVIDE MINIMUM 26 FT WIDE ACCESS ROUTES.

PRELIMINARY NOT FOR CONSTRUCTION

AXIS DESIGNGROUP
ARCHITECTURE & ENGINEERING, INC.
11104 S.E. STARK STREET
PORTLAND, OR 97216
T: 503.284.0988 | F: 503.546.9276

TONKIN LAMBORGHINI
3S-1-32DA TAX LOT 1000, SW PARKWAY AVE
WILSONVILLE, OR 97070

REVISIONS

No.	Description	Date

DRAWN BY: KJK
CHECKED BY: TRB
JOB NO: 22-033
DATE: 10/04/2023
ISSUED FOR: PRELIMINARY

SHEET TITLE
SITE PLAN @ UPPER LEVEL

SHEET NO.
A-103

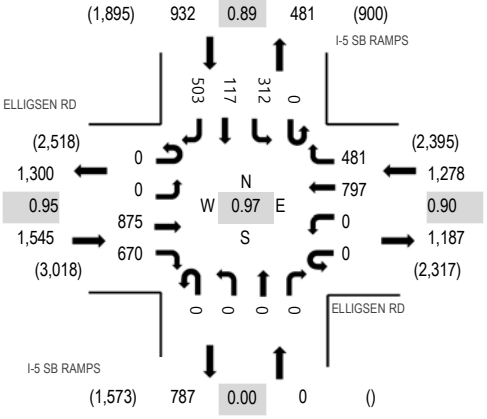
APPENDIX B: TRAFFIC COUNT DATA

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

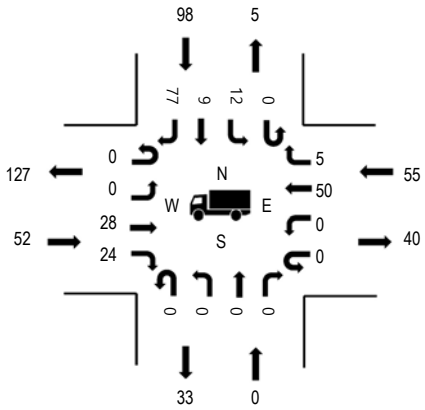
Location: 1 I-5 SB RAMPS & ELLIGSEN RD PM
Date: Tuesday, April 4, 2023
Peak Hour: 04:05 PM - 05:05 PM
Peak 15-Minutes: 04:15 PM - 04:30 PM

Peak Hour

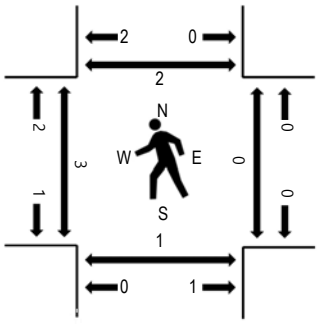
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	3.4%	0.95
WB	4.3%	0.90
NB	0.0%	0.00
SB	10.5%	0.89
All	5.5%	0.97

Traffic Counts - Motorized Vehicles

Interval Start Time	ELLIGSEN RD Eastbound				ELLIGSEN RD Westbound				I-5 SB RAMPS Northbound				I-5 SB RAMPS Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	0	80	61	0	0	94	29	0	0	0	0	0	32	1	37	334	3,751
4:05 PM	0	0	72	54	0	0	68	23	0	0	0	0	0	17	9	49	292	3,755
4:10 PM	0	0	74	56	0	0	81	36	0	0	0	0	0	30	1	41	319	3,755
4:15 PM	0	0	67	65	0	0	66	24	0	0	0	0	0	46	3	47	318	3,740
4:20 PM	0	0	71	59	0	0	73	25	0	0	0	0	0	30	4	46	308	3,753
4:25 PM	0	0	80	54	0	0	69	36	0	0	0	0	0	41	13	53	346	3,740
4:30 PM	0	0	86	56	0	0	63	33	0	0	0	0	0	23	10	44	315	3,675
4:35 PM	0	0	68	51	0	0	59	52	0	0	0	0	0	15	15	34	294	3,645
4:40 PM	0	0	53	52	0	0	68	44	0	0	0	0	0	21	12	41	291	3,638
4:45 PM	0	0	96	55	0	0	85	57	0	0	0	0	0	16	15	34	358	3,630
4:50 PM	0	0	53	55	0	0	56	45	0	0	0	0	0	36	9	34	288	3,550
4:55 PM	0	0	80	52	0	0	46	43	0	0	0	0	0	16	9	42	288	3,563
5:00 PM	0	0	75	61	0	0	63	63	0	0	0	0	0	21	17	38	338	3,557
5:05 PM	0	0	70	53	0	0	63	48	0	0	0	0	0	20	8	30	292	
5:10 PM	0	0	65	55	0	0	63	51	0	0	0	0	0	17	11	42	304	
5:15 PM	0	0	85	60	0	0	51	55	0	0	0	0	0	27	8	45	331	
5:20 PM	0	0	48	57	0	0	59	32	0	0	0	0	0	31	15	53	295	
5:25 PM	0	0	76	48	0	1	51	29	0	0	0	0	0	29	9	38	281	
5:30 PM	0	0	54	55	0	0	58	36	0	0	0	0	0	27	10	45	285	
5:35 PM	0	0	57	51	0	0	71	29	0	0	0	0	0	23	11	45	287	
5:40 PM	0	0	67	55	0	0	61	24	0	0	0	0	0	21	11	44	283	
5:45 PM	0	0	58	59	0	0	50	22	0	0	0	0	0	31	11	47	278	
5:50 PM	0	0	66	57	0	0	42	33	0	0	0	0	0	39	8	56	301	
5:55 PM	0	0	71	65	0	0	34	31	0	0	0	0	0	36	6	39	282	
Count Total	0	0	1,672	1,346	0	1	1,494	900	0	0	0	0	0	645	226	1,024	7,308	
Peak Hour	0	0	875	670	0	0	797	481	0	0	0	0	0	312	117	503	3,755	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

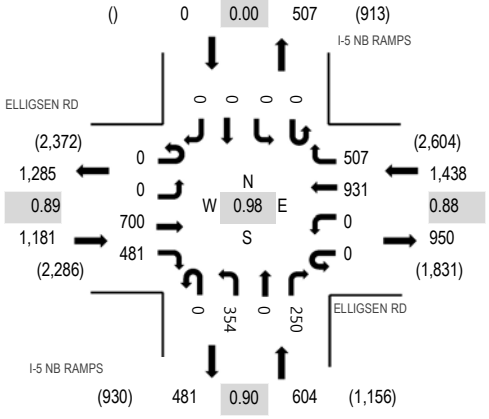
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	9	0	4	7	20	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	2	0	3	5	10	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	5	0	6	8	19	4:10 PM	0	0	0	0	0	4:10 PM	1	0	0	0	1
4:15 PM	7	0	2	6	15	4:15 PM	0	0	0	0	0	4:15 PM	1	1	0	1	3
4:20 PM	7	0	11	9	27	4:20 PM	1	0	0	0	1	4:20 PM	0	0	0	0	0
4:25 PM	2	0	3	4	9	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	5	0	5	5	15	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	4	0	6	8	18	4:35 PM	0	0	0	0	0	4:35 PM	1	0	0	0	1
4:40 PM	4	0	5	14	23	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	7	0	6	14	27	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	3	0	3	9	15	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	1	1
4:55 PM	4	0	1	8	13	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	2	0	4	8	14	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	3	0	2	1	6	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	7	0	0	12	19	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	3	0	3	7	13	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	3	0	5	6	14	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	5	0	6	2	13	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	6	0	5	11	22	5:30 PM	0	0	0	0	0	5:30 PM	1	0	0	0	1
5:35 PM	3	0	2	3	8	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	3	0	1	6	10	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	1	0	7	6	14	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	1	0	2	4	7	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	1	0	4	3	8	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	97	0	96	166	359	Count Total	1	0	0	0	1	Count Total	4	1	0	2	7
Peak Hour	52	0	55	98	205	Peak Hour	1	0	0	0	1	Peak Hour	3	1	0	2	6

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

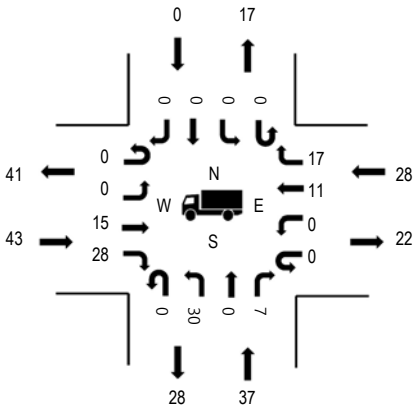
Location: 2 I-5 NB RAMPS & ELLIGSEN RD PM
Date: Tuesday, April 4, 2023
Peak Hour: 04:10 PM - 05:10 PM
Peak 15-Minutes: 04:20 PM - 04:35 PM

Peak Hour

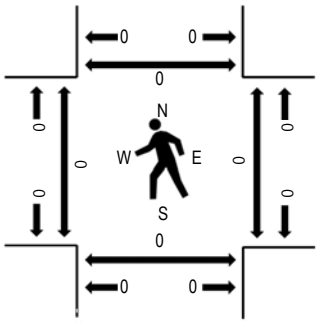
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	3.6%	0.89
WB	1.9%	0.88
NB	6.1%	0.90
SB	0.0%	0.00
All	3.4%	0.98

Traffic Counts - Motorized Vehicles

Interval Start Time	ELLIGSEN RD Eastbound				ELLIGSEN RD Westbound				I-5 NB RAMPS Northbound				I-5 NB RAMPS Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	0	69	40	0	0	83	24	0	40	0	32	0	0	0	0	288	3,201
4:05 PM	0	0	54	37	0	0	58	46	0	34	0	18	0	0	0	0	247	3,179
4:10 PM	0	0	68	37	0	0	84	47	0	31	0	21	0	0	0	0	288	3,223
4:15 PM	0	0	66	46	0	0	68	29	0	21	0	24	0	0	0	0	254	3,174
4:20 PM	0	0	73	32	0	0	67	46	0	30	0	27	0	0	0	0	275	3,181
4:25 PM	0	0	77	40	0	0	66	28	0	39	0	24	0	0	0	0	274	3,135
4:30 PM	0	0	58	48	0	0	58	52	0	37	0	21	0	0	0	0	274	3,095
4:35 PM	0	0	42	34	0	0	83	44	0	28	0	21	0	0	0	0	252	3,045
4:40 PM	0	0	35	27	0	0	77	45	0	32	0	20	0	0	0	0	236	3,023
4:45 PM	0	0	59	63	0	0	102	33	0	38	0	23	0	0	0	0	318	3,018
4:50 PM	0	0	63	25	0	0	78	40	0	24	0	24	0	0	0	0	254	2,910
4:55 PM	0	0	57	45	0	0	66	38	0	22	0	13	0	0	0	0	241	2,862
5:00 PM	0	0	49	46	0	0	94	30	0	29	0	18	0	0	0	0	266	2,845
5:05 PM	0	0	53	38	0	0	88	75	0	23	0	14	0	0	0	0	291	
5:10 PM	0	0	37	40	0	0	94	31	0	20	0	17	0	0	0	0	239	
5:15 PM	0	0	56	48	0	0	80	36	0	26	0	15	0	0	0	0	261	
5:20 PM	0	0	43	37	0	0	60	41	0	30	0	18	0	0	0	0	229	
5:25 PM	0	0	69	38	0	0	55	31	0	22	0	19	0	0	0	0	234	
5:30 PM	0	0	48	39	0	0	68	29	0	22	0	18	0	0	0	0	224	
5:35 PM	1	0	43	32	0	0	67	25	0	33	0	29	0	0	0	0	230	
5:40 PM	0	0	45	42	0	0	50	41	0	36	0	17	0	0	0	0	231	
5:45 PM	0	0	64	29	0	0	42	34	0	27	0	14	0	0	0	0	210	
5:50 PM	0	0	58	24	0	0	55	33	0	21	0	15	0	0	0	0	206	
5:55 PM	0	0	69	43	0	0	48	35	0	15	0	14	0	0	0	0	224	
Count Total	1	0	1,355	930	0	0	1,691	913	0	680	0	476	0	0	0	0	6,046	
Peak Hour	0	0	700	481	0	0	931	507	0	354	0	250	0	0	0	0	3,223	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

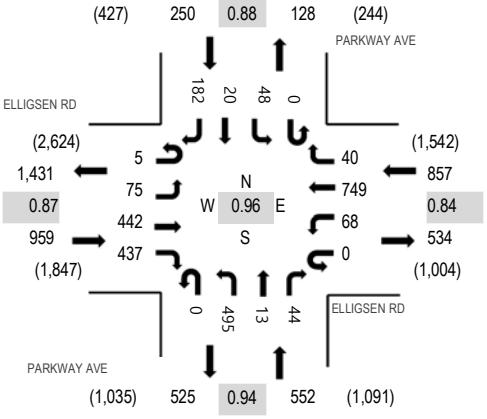
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	4	5	0	0	9	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	3	1	0	4	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	4	2	2	0	8	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	4	1	1	0	6	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	5	7	7	0	19	4:20 PM	1	0	0	0	1	4:20 PM	0	0	0	0	0
4:25 PM	3	4	2	0	9	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	5	5	1	0	11	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	2	4	4	0	10	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	4	1	3	0	8	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	3	6	2	0	11	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	3	3	3	0	9	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	5	0	0	0	5	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	1	2	1	0	4	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	4	2	2	0	8	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	7	0	0	0	7	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	3	2	3	0	8	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	4	1	0	5	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	2	4	3	0	9	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	4	1	4	0	9	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	3	2	2	0	7	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	2	1	1	0	4	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	2	3	3	0	8	5:45 PM	0	0	1	0	1	5:45 PM	0	0	0	0	0
5:50 PM	1	1	3	0	5	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	1	2	2	0	5	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	72	65	51	0	188	Count Total	1	0	1	0	2	Count Total	0	0	0	0	0
Peak Hour	43	37	28	0	108	Peak Hour	1	0	0	0	1	Peak Hour	0	0	0	0	0

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

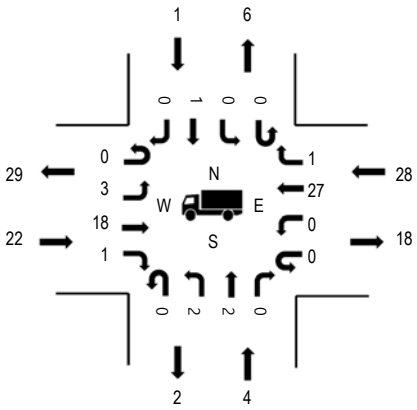
Location: 3 PARKWAY AVE & ELLIGSEN RD PM
Date: Tuesday, April 4, 2023
Peak Hour: 04:10 PM - 05:10 PM
Peak 15-Minutes: 04:55 PM - 05:10 PM

Peak Hour

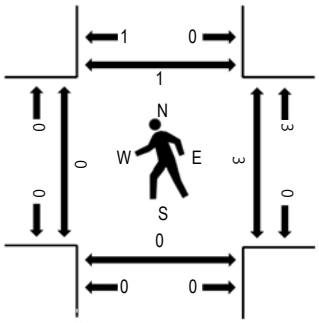
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	2.3%	0.87
WB	3.3%	0.84
NB	0.7%	0.94
SB	0.4%	0.88
All	2.1%	0.96

Traffic Counts - Motorized Vehicles

Interval Start Time	ELLIGSEN RD Eastbound				ELLIGSEN RD Westbound				PARKWAY AVE Northbound				PARKWAY AVE Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	4	55	40	0	3	56	3	0	43	1	7	0	5	3	18	238	2,573
4:05 PM	1	6	43	25	0	0	48	5	0	36	4	1	0	5	2	15	191	2,534
4:10 PM	0	4	47	42	0	5	64	0	0	42	1	0	0	4	1	24	234	2,618
4:15 PM	1	12	42	37	0	5	39	4	0	39	1	2	0	4	1	10	197	2,567
4:20 PM	0	6	37	48	0	0	60	6	0	46	3	2	0	3	0	11	222	2,589
4:25 PM	0	9	49	45	0	11	55	7	0	33	1	4	0	3	3	10	230	2,546
4:30 PM	0	7	36	36	0	4	51	2	0	43	2	5	0	3	1	12	202	2,500
4:35 PM	0	4	32	32	0	5	58	1	0	44	0	3	0	2	2	23	206	2,484
4:40 PM	1	5	19	30	0	5	73	4	0	32	0	7	0	5	4	11	196	2,457
4:45 PM	1	7	34	39	0	2	58	2	0	57	2	4	0	5	2	17	230	2,438
4:50 PM	0	6	42	39	0	7	62	3	0	37	1	4	0	5	1	12	219	2,385
4:55 PM	1	7	33	34	0	14	58	2	0	36	1	6	0	2	3	11	208	2,356
5:00 PM	1	4	26	23	0	6	70	1	0	47	1	0	0	4	2	14	199	2,334
5:05 PM	0	4	45	32	0	4	101	8	0	39	0	7	0	8	0	27	275	
5:10 PM	1	1	17	26	0	1	53	3	0	52	1	5	0	7	4	12	183	
5:15 PM	0	4	43	36	0	12	74	1	0	31	2	3	0	0	0	13	219	
5:20 PM	1	8	23	31	0	8	49	4	0	43	0	6	0	0	1	5	179	
5:25 PM	1	5	29	43	0	7	40	4	0	40	5	0	0	1	3	6	184	
5:30 PM	3	5	25	37	0	6	53	3	0	33	1	5	0	3	2	10	186	
5:35 PM	2	6	27	36	0	7	40	2	0	45	1	2	0	3	1	7	179	
5:40 PM	1	1	30	34	0	4	40	1	0	44	5	3	0	2	0	12	177	
5:45 PM	2	8	34	32	0	3	46	2	0	28	2	6	0	3	1	10	177	
5:50 PM	0	5	30	42	0	6	52	2	0	35	0	4	0	3	1	10	190	
5:55 PM	0	4	35	46	0	7	37	3	0	37	4	4	0	1	0	8	186	
Count Total	17	132	833	865	0	132	1,337	73	0	962	39	90	0	81	38	308	4,907	
Peak Hour	5	75	442	437	0	68	749	40	0	495	13	44	0	48	20	182	2,618	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	3	0	1	0	4	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	1	1	2	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	2	0	3	0	5	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	1	0	1	0	2	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	2	1	7	0	10	4:20 PM	1	0	0	0	1	4:20 PM	0	0	0	0	0
4:25 PM	2	0	2	0	4	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	1	1	1	1	4	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	1	0	3	0	4	4:35 PM	0	0	0	0	0	4:35 PM	0	0	2	0	2
4:40 PM	2	0	3	0	5	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	3	0	2	0	5	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	2	0	3	0	5	4:50 PM	0	0	0	0	0	4:50 PM	0	0	1	0	1
4:55 PM	3	2	1	0	6	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	0	1	0	1	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	1	1
5:05 PM	3	0	1	0	4	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	3	0	0	0	3	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	1	0	2	0	3	5:15 PM	0	0	0	0	0	5:15 PM	0	0	3	1	4
5:20 PM	0	0	1	0	1	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	3	0	3	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	3	0	5	0	8	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	2	0	2	1	5	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	1	1	0	0	2	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	1	0	4	0	5	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	1	1	2	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	1	0	1	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	36	5	49	4	94	Count Total	1	0	0	0	1	Count Total	0	0	6	2	8
Peak Hour	22	4	28	1	55	Peak Hour	1	0	0	0	1	Peak Hour	0	0	3	1	4

APPENDIX C: STAGE II LIST

Updated by D. Pauly 08.09.23

Stage II Approved

Project	Land Use	Status	Size	Total PM Peak Trips	Trip Allocation Percentage		Net New (Primary + Diverted) PM Peak Hour Trips not yet active		
					Internal	Pass-By	In	Out	Total
Hydro-Temp: Recent agreement with the City, the project is vested and so are the traffic trips	Office/Flex-Space	Not built	60.8 KSF				44	46	90
Mercedes Benz (Phase 2)	Auto Dealership	Not built					20	26	46
Town Center Ph III *and trip dedication to Miller Paint store Uses marked with "*" have not been built and PM peak hr trip sum exceeds remaining vested trip level by 2 trips. It has yet to be determined how to allocate trips between remaining buildings.*	*High Turnover Restaurant (Pad 1)	Not built	7.5 KSF				24	17	47*
	Remaining Approved Total								47
Wilsonville Road Business Park Phase II	Phase 2 - office (2-story building on west parcel)	Partially Built	21.7 KSF				15	71	86
Frog Pond Ridge	Residential	12 homes built and occupied	71 units				35	24	59
Frog Pond Crossing	Residential	Under construction, no homes occupied	29 units				19	9	28
Frog Pond Estates	Residential	Approved	17 units				11	7	18
Frog Pond Oaks	Residential	Under construction, no homes occupied	41 units				27	14	41
Frog Pond Vista	Residential	Under construction, no homes occupied	38 units				27	17	44
Frog Pond Overlook	Residential	Approved	12 Units				8	5	13
Frog Pond Terrace	Residential	Approved	19 Units				12	8	20
Canyon Creek III	Residential	Under Construction	5 units (traffic study was for 11)				2	3	5
Boones Ferry Gas Station/Convenience Store	Commercail	Under Construction	3,460 sf store, 12 gas pumps	240		134	53	53	106
Frog Pond Primary School	Public	Under Construction	550 students	88			39	48	87
Delta Logistics	Industrial	Under Construction	56,100 sf wharehouse	33			9	24	33
Building W5 Boeckman and Kinsman	Industrial	Approved	80,000 sf manufacturing	54			17	37	54
Precision Countertops	Industrial	Approved	65800 square feet	43			13	30	43
Town Center Mixed Use	Mixed Use Residential/Commercial	Approved	114 units, 4,000 square feet retail	55			31	24	55
Frog Pond Cottage Park Place	Residential	Approved	34 attached units	16			8	7	15
Frog Pond Petras	Residential	Approved	22 attached units	9			5	4	9

Stage II Approved – Villebois

Project	Phase	Status	Land Use					Total PM Peak Trips	Trip Allocation Percentage		Net New (Primary + Diverted) PM Peak Hour Trips not yet active		
			SF	Town.	Apt.	Retail	School		Internal	Pass-By	In	Out	Total
North (Entirety)	Residential	Partially built, 383 homes sold and occupied	451								41	27	68
Central	Residential	Partially Built, 991 homes (102 single family, 319 condo/row homes, 365 apartments) occupied	102	391	510						60	30	90
FOR REFERENCE SAP EAST		560	537	42									

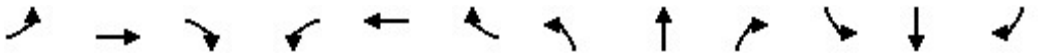
FOR REFERENCE SAP SOUTH (Includes PDP 7 Grande Pointe)

Pending Projects for Which Traffic Analysis has been completed

Project	Land Use	Status	Size	Total PM Peak T	Trip Allocation Percentage			Net New (Primary) PM Peak Hour Trips		
					Internal	Pass-By	Diverted	In	Out	Total
Parkway Woods Expansion	Public	under review	80,000 sf manufac	52				16	36	52
CIS Oregon	Industrial	under review	Need to fill in							

Intersection	Count Date ak Hr S	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Stage II Trips													
I-5 SB Ramps/Elligsen Rd		0	0	0	18	0	30	0	33	13	0	22	5
I-5 NB Ramps/Elligsen Rd		19	0	4	0	0	0	0	25	26	0	8	21
Parkway Ave/Elligsen Rd		0	1	8	1	1	24	18	11	0	6	5	1

APPENDIX D: HCM REPORT - EXISTING



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰	↰	↱
Traffic Volume (veh/h)	0	877	704	0	798	505	0	0	0	328	123	528
Future Volume (veh/h)	0	877	704	0	798	505	0	0	0	328	123	528
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1841	0	1811	1885				1841	1781	1678
Adj Flow Rate, veh/h	0	904	0	0	823	0				232	275	148
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	3	4	0	6	1				4	8	15
Cap, veh/h	0	2590		0	2528					315	320	254
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00				0.18	0.18	0.18
Sat Flow, veh/h	0	3618	1560	0	3532	1598				1753	1781	1415
Grp Volume(v), veh/h	0	904	0	0	823	0				232	275	148
Grp Sat Flow(s),veh/h/ln	0	1763	1560	0	1721	1598				1753	1781	1415
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0				13.1	15.7	10.1
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0				13.1	15.7	10.1
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2590		0	2528					315	320	254
V/C Ratio(X)	0.00	0.35		0.00	0.33					0.74	0.86	0.58
Avail Cap(c_a), veh/h	0	2590		0	2528					417	424	337
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.84	0.00	0.00	0.89	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				40.7	41.8	39.4
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.3	0.0				3.5	11.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	0.1	0.0				5.8	7.6	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.3	0.0	0.0	0.3	0.0				44.2	53.1	40.7
LnGrp LOS	A	A		A	A					D	D	D
Approach Vol, veh/h		904			823						655	
Approach Delay, s/veh		0.3			0.3						47.2	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		81.1		23.9		81.1						
Change Period (Y+Rc), s		5.0		5.0		5.0						
Max Green Setting (Gmax), s		70.0		25.0		42.0						
Max Q Clear Time (g_c+I1), s		2.0		17.7		2.0						
Green Ext Time (p_c), s		8.5		1.2		7.2						

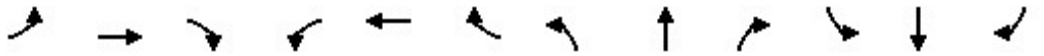
Intersection Summary		
HCM 6th Ctrl Delay		13.2
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

User approved changes to right turn type.

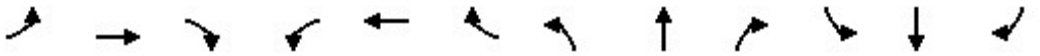
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	700	505	0	931	532	372	0	263	0	0	0
Future Volume (veh/h)	0	700	505	0	931	532	372	0	263	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1870	1811	0	1885	1856	1781	0	1856			
Adj Flow Rate, veh/h	0	714	0	0	950	0	380	0	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	0	2	6	0	1	3	8	0	3			
Cap, veh/h	0	2729		0	2750		466	0				
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00	0.14	0.00	0.00			
Sat Flow, veh/h	0	3647	1535	0	3676	1572	3291	0	1572			
Grp Volume(v), veh/h	0	714	0	0	950	0	380	0	0			
Grp Sat Flow(s),veh/h/ln	0	1777	1535	0	1791	1572	1646	0	1572			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2729		0	2750		466	0				
V/C Ratio(X)	0.00	0.26		0.00	0.35		0.81	0.00				
Avail Cap(c_a), veh/h	0	2729		0	2750		1113	0				
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.90	0.00	0.00	0.89	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	43.7	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.3	0.0	2.2	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	0.1	0.0	4.8	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	0.0	0.0	0.3	0.0	45.9	0.0	0.0			
LnGrp LOS	A	A		A	A		D	A				
Approach Vol, veh/h		714			950			380				
Approach Delay, s/veh		0.2			0.3			45.9				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		85.6				85.6		19.4				
Change Period (Y+Rc), s		5.0				5.0		4.5				
Max Green Setting (Gmax), s		60.0				60.0		35.5				
Max Q Clear Time (g_c+I1), s		2.0				2.0		13.8				
Green Ext Time (p_c), s		6.1				9.1		1.1				
Intersection Summary												
HCM 6th Ctrl Delay			8.8									
HCM 6th LOS			A									

Notes

Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	451	437	68	786	40	495	13	44	48	20	182
Future Volume (veh/h)	75	451	437	68	786	40	495	13	44	48	20	182
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1900	1900	1841	1870	1900	1678	1900	1900	1826	1900
Adj Flow Rate, veh/h	78	470	304	71	819	38	526	0	7	50	21	6
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	4	0	0	4	2	0	15	0	0	5	0
Cap, veh/h	100	1928	1144	91	2680	124	619	0	274	75	57	16
Arrive On Green	0.02	0.18	0.18	0.10	1.00	1.00	0.17	0.00	0.17	0.04	0.04	0.04
Sat Flow, veh/h	1753	3497	1575	1810	4922	228	3619	0	1602	1810	1358	388
Grp Volume(v), veh/h	78	470	304	71	557	300	526	0	7	50	0	27
Grp Sat Flow(s),veh/h/ln	1753	1749	1575	1810	1675	1799	1810	0	1602	1810	0	1746
Q Serve(g_s), s	4.7	12.1	11.0	4.0	0.0	0.0	14.8	0.0	0.4	2.9	0.0	1.6
Cycle Q Clear(g_c), s	4.7	12.1	11.0	4.0	0.0	0.0	14.8	0.0	0.4	2.9	0.0	1.6
Prop In Lane	1.00		1.00	1.00		0.13	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	100	1928	1144	91	1824	980	619	0	274	75	0	73
V/C Ratio(X)	0.78	0.24	0.27	0.78	0.31	0.31	0.85	0.00	0.03	0.66	0.00	0.37
Avail Cap(c_a), veh/h	175	1928	1144	181	1824	980	1034	0	458	259	0	249
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	0.90	0.90	0.90	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.9	24.2	10.1	46.7	0.0	0.0	42.2	0.0	36.2	49.6	0.0	49.0
Incr Delay (d2), s/veh	4.6	0.3	0.5	4.8	0.4	0.7	1.5	0.0	0.0	3.7	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	5.7	7.6	1.8	0.1	0.2	6.8	0.0	0.2	1.4	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	24.5	10.7	51.5	0.4	0.7	43.7	0.0	36.2	53.2	0.0	50.1
LnGrp LOS	E	C	B	D	A	A	D	A	D	D	A	D
Approach Vol, veh/h		852			928			533			77	
Approach Delay, s/veh		22.4			4.4			43.6			52.2	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	62.9		9.4	10.5	62.2		23.0				
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0				
Max Green Setting (Gmax), s	10.5	30.0		15.0	10.5	30.0		30.0				
Max Q Clear Time (g_c+I1), s	6.0	14.1		4.9	6.7	2.0		16.8				
Green Ext Time (p_c), s	0.0	2.0		0.0	0.0	2.2		0.7				

Intersection Summary		
HCM 6th Ctrl Delay		21.1
HCM 6th LOS		C

Notes

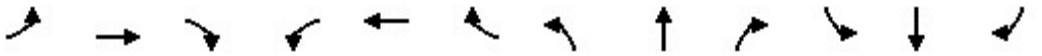
User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.

Intersection ID and Name	NB PhasingType	SB PhasingType	EB PhasingType	WB PhasingType	Cycle Leng	Lost Time	Use Overlap Calculator
1: I-5 SB Ramp & Boones Ferry Rd/Elligsen Rd		Split			105	14	
2: I-5 NB Ramp & Elligsen Rd	Protected				105	10	
3: Parkway Ave & Elligsen Rd	Split	Split	Protected	Protected	105	19.5	

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		WBL/EBT	EBL/WBT	NBL/SBT	SBL/NBT	V/S E/W	V/S N/S
Adj Flow Rate, veh/l	0	904	0	0	823	0	0	0	0	232	275	148	Protected	0.25	0.23	0.15	0.13		
Sat Flow, veh/h	0	3618	1560	0	3532	1598	0	0	0	1753	1781	1415	Permitted or Split	0.25	0.23	0.15	0.00		
V/S	0.00	0.25	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.13	0.15	0.10	selected phasing	0.25	0.23	0.15	0.00	0.25	0.15
Adj Flow Rate, veh/l	0	714	0	0	950	0	380	0	0	0	0	0	Protected	0.20	0.26	0.12	0.00		
Sat Flow, veh/h	0	3647	1535	0	3676	1572	3291	0	1572	0	0	0	Permitted or Split	0.20	0.26	0.00	0.12		
V/S	0.00	0.20	0.00	0.00	0.26	0.00	0.12	0.00	0.00	0.00	0.00	0.00	selected phasing	0.20	0.26	0.12	0.12	0.26	0.12
Adj Flow Rate, veh/l	78	470	304	71	819	38	526	0	7	50	21	6	Protected	0.23	0.21	0.16	0.03		
Sat Flow, veh/h	1753	3497	1575	1810	4922	228	3619	0	1602	1810	1358	388	Permitted or Split	0.19	0.17	0.03	0.15		
V/S	0.04	0.13	0.19	0.04	0.17	0.17	0.15	0.00	0.00	0.03	0.02	0.02	selected phasing	0.23	0.21	0.03	0.15	0.23	0.17

Overlap Critical Flow Calculator													
	NBR OV	NB OV V/S	SBR OV	SB OV V/S	EBR OV	EB OV V/S	WBR OV	WB OV V/S	V/S Overlap	Intersection V/	HCM 6th Ctrl Dela	HCM 6th LOS	Synchro ID
Right Turn Overlap	No	0.00	No	0.00	No	0.00	No	0.00	0.00				
Right Turn Approach Phasing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	No OV				
Overlap Approach Phasing	0.00	0.25	0.00	0.25	0.00	0.15	0.00	0.15	N/A	**0.46**	**13**	**B**	1
Right Turn Overlap	No	0.00	No	0.00	No	0.00	No	0.00	0.00				
Right Turn Approach Phasing	Protected	0.12	Protected	0.12	0.00	0.00	0.00	0.00	No OV				
Overlap Approach Phasing	0.00	0.26	0.00	0.26	Protected	0.00	Protected	0.00	N/A	**0.41**	**9**	**A**	2
Right Turn Overlap	No	0.00	No	0.00	No	0.00	No	0.00	0.00				
Right Turn Approach Phasing	Split	0.03	Split	0.15	Protected	0.04	Protected	0.04	No OV				
Overlap Approach Phasing	Protected	0.19	Protected	0.19	Split	0.03	Split	0.15	N/A	**0.50**	**21**	**C**	3

APPENDIX E: HCM REPORT – EXISTING + PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰	↰	↱
Traffic Volume (veh/h)	0	884	704	0	809	518	0	0	0	339	123	528
Future Volume (veh/h)	0	884	704	0	809	518	0	0	0	339	123	528
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1841	0	1811	1885				1841	1781	1678
Adj Flow Rate, veh/h	0	911	0	0	834	0				238	282	205
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	3	4	0	6	1				4	8	15
Cap, veh/h	0	2573		0	2511					323	329	261
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00				0.18	0.18	0.18
Sat Flow, veh/h	0	3618	1560	0	3532	1598				1753	1781	1415
Grp Volume(v), veh/h	0	911	0	0	834	0				238	282	205
Grp Sat Flow(s),veh/h/ln	0	1763	1560	0	1721	1598				1753	1781	1415
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0				13.5	16.1	14.5
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0				13.5	16.1	14.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2573		0	2511					323	329	261
V/C Ratio(X)	0.00	0.35		0.00	0.33					0.74	0.86	0.79
Avail Cap(c_a), veh/h	0	2573		0	2511					417	424	337
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.83	0.00	0.00	0.88	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				40.4	41.5	40.8
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.3	0.0				3.8	11.7	7.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	0.1	0.0				5.9	7.9	11.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.3	0.0	0.0	0.3	0.0				44.2	53.2	48.3
LnGrp LOS	A	A		A	A					D	D	D
Approach Vol, veh/h		911			834						725	
Approach Delay, s/veh		0.3			0.3						48.9	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		80.6		24.4		80.6						
Change Period (Y+Rc), s		5.0		5.0		5.0						
Max Green Setting (Gmax), s		70.0		25.0		42.0						
Max Q Clear Time (g_c+I1), s		2.0		18.1		2.0						
Green Ext Time (p_c), s		8.6		1.3		7.4						

Intersection Summary		
HCM 6th Ctrl Delay		14.6
HCM 6th LOS		B

Notes

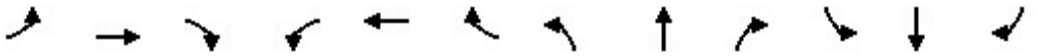
User approved volume balancing among the lanes for turning movement.

User approved changes to right turn type.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
2: I-5 NB Ramp & Elligsen Rd

Existing + Project - PM Peak

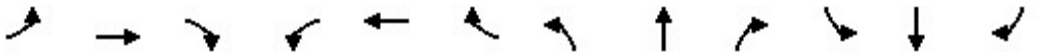


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	718	505	0	955	548	372	0	272	0	0	0
Future Volume (veh/h)	0	718	505	0	955	548	372	0	272	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1870	1811	0	1885	1856	1781	0	1856			
Adj Flow Rate, veh/h	0	733	0	0	974	0	380	0	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	0	2	6	0	1	3	8	0	3			
Cap, veh/h	0	2729		0	2750		466	0				
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00	0.14	0.00	0.00			
Sat Flow, veh/h	0	3647	1535	0	3676	1572	3291	0	1572			
Grp Volume(v), veh/h	0	733	0	0	974	0	380	0	0			
Grp Sat Flow(s),veh/h/ln	0	1777	1535	0	1791	1572	1646	0	1572			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2729		0	2750		466	0				
V/C Ratio(X)	0.00	0.27		0.00	0.35		0.81	0.00				
Avail Cap(c_a), veh/h	0	2729		0	2750		1113	0				
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.90	0.00	0.00	0.87	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	43.7	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.3	0.0	2.2	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	0.1	0.0	4.8	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	0.0	0.0	0.3	0.0	45.9	0.0	0.0			
LnGrp LOS	A	A		A	A		D	A				
Approach Vol, veh/h		733			974			380				
Approach Delay, s/veh		0.2			0.3			45.9				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		85.6				85.6		19.4				
Change Period (Y+Rc), s		5.0				5.0		4.5				
Max Green Setting (Gmax), s		60.0				60.0		35.5				
Max Q Clear Time (g_c+I1), s		2.0				2.0		13.8				
Green Ext Time (p_c), s		6.4				9.4		1.1				

Intersection Summary	
HCM 6th Ctrl Delay	8.6
HCM 6th LOS	A

Notes

Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	451	437	68	786	47	495	15	44	59	23	222
Future Volume (veh/h)	102	451	437	68	786	47	495	15	44	59	23	222
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1900	1900	1841	1870	1900	1678	1900	1900	1826	1900
Adj Flow Rate, veh/h	106	470	300	71	819	45	527	0	6	61	24	42
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	4	0	0	4	2	0	15	0	0	5	0
Cap, veh/h	133	1869	1118	91	2481	136	620	0	275	105	34	60
Arrive On Green	0.02	0.18	0.18	0.10	1.00	1.00	0.17	0.00	0.17	0.06	0.06	0.06
Sat Flow, veh/h	1753	3497	1575	1810	4875	267	3619	0	1602	1810	589	1032
Grp Volume(v), veh/h	106	470	300	71	562	302	527	0	6	61	0	66
Grp Sat Flow(s),veh/h/ln	1753	1749	1575	1810	1675	1792	1810	0	1602	1810	0	1621
Q Serve(g_s), s	6.3	12.2	11.1	4.0	0.0	0.0	14.8	0.0	0.3	3.4	0.0	4.2
Cycle Q Clear(g_c), s	6.3	12.2	11.1	4.0	0.0	0.0	14.8	0.0	0.3	3.4	0.0	4.2
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		0.64
Lane Grp Cap(c), veh/h	133	1869	1118	91	1705	912	620	0	275	105	0	94
V/C Ratio(X)	0.80	0.25	0.27	0.78	0.33	0.33	0.85	0.00	0.02	0.58	0.00	0.70
Avail Cap(c_a), veh/h	175	1869	1118	181	1705	912	1034	0	458	259	0	232
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	0.88	0.88	0.88	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.4	25.1	10.9	46.7	0.0	0.0	42.2	0.0	36.2	48.2	0.0	48.5
Incr Delay (d2), s/veh	12.0	0.3	0.5	4.7	0.5	0.9	1.6	0.0	0.0	1.9	0.0	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	5.7	7.5	1.8	0.1	0.2	6.8	0.0	0.1	1.6	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.4	25.4	11.5	51.4	0.5	0.9	43.8	0.0	36.2	50.0	0.0	52.0
LnGrp LOS	E	C	B	D	A	A	D	A	D	D	A	D
Approach Vol, veh/h		876			935			533			127	
Approach Delay, s/veh		25.1			4.5			43.7			51.0	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	61.1		11.1	12.5	58.4		23.0				
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0				
Max Green Setting (Gmax), s	10.5	30.0		15.0	10.5	30.0		30.0				
Max Q Clear Time (g_c+I1), s	6.0	14.2		6.2	8.3	2.0		16.8				
Green Ext Time (p_c), s	0.0	1.9		0.1	0.0	2.2		0.7				

Intersection Summary		
HCM 6th Ctrl Delay		22.6
HCM 6th LOS		C

Notes

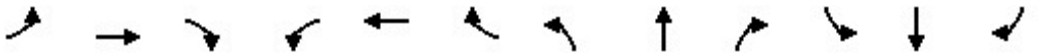
User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.

Intersection ID and Name	NB PhasingType	SB PhasingType	EB PhasingType	WB PhasingType	Cycle Leng	Lost Time	Use Overlap Calculator
1: I-5 SB Ramp & Boones Ferry Rd/Elligsen Rd		Split			105	14	
2: I-5 NB Ramp & Elligsen Rd	Protected				105	10	
3: Parkway Ave & Elligsen Rd	Split	Split	Protected	Protected	105	19.5	

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		WBL/EBT	EBL/WBT	NBL/SBT	SBL/NBT	V/S E/W	V/S N/S
Adj Flow Rate, veh/l	0	911	0	0	834	0	0	0	0	238	282	205	Protected	0.25	0.24	0.16	0.14		
Sat Flow, veh/h	0	3618	1560	0	3532	1598	0	0	0	1753	1781	1415	Permitted or Split	0.25	0.24	0.16	0.00		
V/S	0.00	0.25	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.14	0.16	0.14	selected phasing	0.25	0.24	0.16	0.00	0.25	0.16
Adj Flow Rate, veh/l	0	733	0	0	974	0	380	0	0	0	0	0	Protected	0.20	0.26	0.12	0.00		
Sat Flow, veh/h	0	3647	1535	0	3676	1572	3291	0	1572	0	0	0	Permitted or Split	0.20	0.26	0.00	0.12		
V/S	0.00	0.20	0.00	0.00	0.26	0.00	0.12	0.00	0.00	0.00	0.00	0.00	selected phasing	0.20	0.26	0.12	0.12	0.26	0.12
Adj Flow Rate, veh/l	106	470	300	71	819	45	527	0	6	61	24	42	Protected	0.23	0.23	0.19	0.04		
Sat Flow, veh/h	1753	3497	1575	1810	4875	267	3619	0	1602	1810	589	1032	Permitted or Split	0.19	0.17	0.04	0.15		
V/S	0.06	0.13	0.19	0.04	0.17	0.17	0.15	0.00	0.00	0.03	0.04	0.04	selected phasing	0.23	0.23	0.04	0.15	0.23	0.19

	NBR OV	NB OV V/S	SBR OV	SB OV V/S	EBR OV	EB OV V/S	WBR OV	WB OV V/S	V/S Overlap	Intersection V/	HCM 6th Ctrl Dela	HCM 6th LOS	Synchro ID
Right Turn Overlap	No	0.00	No	0.00	No	0.00	No	0.00	0.00				
Right Turn Approach Phasing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	No OV				
Overlap Approach Phasing	0.00	0.25	0.00	0.25	0.00	0.16	0.00	0.16	N/A	**0.47**	**15**	**B**	1
Right Turn Overlap	No	0.00	No	0.00	No	0.00	No	0.00	0.00				
Right Turn Approach Phasing	Protected	0.12	Protected	0.12	0.00	0.00	0.00	0.00	No OV				
Overlap Approach Phasing	0.00	0.26	0.00	0.26	Protected	0.00	Protected	0.00	N/A	**0.42**	**9**	**A**	2
Right Turn Overlap	No	0.00	No	0.00	No	0.00	No	0.00	0.00				
Right Turn Approach Phasing	Split	0.04	Split	0.15	Protected	0.06	Protected	0.06	No OV				
Overlap Approach Phasing	Protected	0.19	Protected	0.19	Split	0.04	Split	0.15	N/A	**0.51**	**23**	**C**	3

APPENDIX F: HCM REPORT – EXISTING + STAGE II



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰	↰	↱
Traffic Volume (veh/h)	0	910	717	0	820	510	0	0	0	346	123	558
Future Volume (veh/h)	0	910	717	0	820	510	0	0	0	346	123	558
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1841	0	1811	1885				1841	1781	1678
Adj Flow Rate, veh/h	0	938	0	0	845	0				242	288	265
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	3	4	0	6	1				4	8	15
Cap, veh/h	0	2482		0	2422					369	375	298
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00				0.21	0.21	0.21
Sat Flow, veh/h	0	3618	1560	0	3532	1598				1753	1781	1416
Grp Volume(v), veh/h	0	938	0	0	845	0				242	288	265
Grp Sat Flow(s),veh/h/ln	0	1763	1560	0	1721	1598				1753	1781	1416
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0				13.3	16.0	19.1
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0				13.3	16.0	19.1
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2482		0	2422					369	375	298
V/C Ratio(X)	0.00	0.38		0.00	0.35					0.66	0.77	0.89
Avail Cap(c_a), veh/h	0	2482		0	2422					417	424	337
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.81	0.00	0.00	0.88	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				38.0	39.1	40.3
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.3	0.0				2.5	6.6	21.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	0.1	0.0				5.7	7.4	15.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.4	0.0	0.0	0.3	0.0				40.5	45.7	61.7
LnGrp LOS	A	A		A	A					D	D	E
Approach Vol, veh/h		938			845						795	
Approach Delay, s/veh		0.4			0.3						49.5	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		77.9		27.1		77.9						
Change Period (Y+Rc), s		5.0		5.0		5.0						
Max Green Setting (Gmax), s		70.0		25.0		42.0						
Max Q Clear Time (g_c+I1), s		2.0		21.1		2.0						
Green Ext Time (p_c), s		9.0		1.0		7.5						

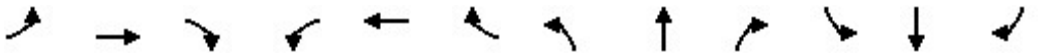
Intersection Summary		
HCM 6th Ctrl Delay		15.5
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

User approved changes to right turn type.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

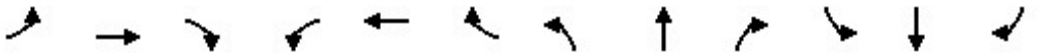


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	725	531	0	939	553	391	0	267	0	0	0
Future Volume (veh/h)	0	725	531	0	939	553	391	0	267	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1870	1811	0	1885	1856	1781	0	1856			
Adj Flow Rate, veh/h	0	740	0	0	958	0	399	0	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	0	2	6	0	1	3	8	0	3			
Cap, veh/h	0	2707		0	2728		486	0				
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00	0.15	0.00	0.00			
Sat Flow, veh/h	0	3647	1535	0	3676	1572	3291	0	1572			
Grp Volume(v), veh/h	0	740	0	0	958	0	399	0	0			
Grp Sat Flow(s),veh/h/ln	0	1777	1535	0	1791	1572	1646	0	1572			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	12.3	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	12.3	0.0	0.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2707		0	2728		486	0				
V/C Ratio(X)	0.00	0.27		0.00	0.35		0.82	0.00				
Avail Cap(c_a), veh/h	0	2707		0	2728		1113	0				
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.89	0.00	0.00	0.88	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	43.4	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.3	0.0	2.2	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	0.1	0.0	5.0	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	0.0	0.0	0.3	0.0	45.6	0.0	0.0			
LnGrp LOS	A	A		A	A		D	A				
Approach Vol, veh/h		740			958			399				
Approach Delay, s/veh		0.2			0.3			45.6				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		85.0				85.0		20.0				
Change Period (Y+Rc), s		5.0				5.0		4.5				
Max Green Setting (Gmax), s		60.0				60.0		35.5				
Max Q Clear Time (g_c+I1), s		2.0				2.0		14.3				
Green Ext Time (p_c), s		6.4				9.2		1.2				

Intersection Summary	
HCM 6th Ctrl Delay	8.9
HCM 6th LOS	A

Notes

Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	462	437	74	791	41	495	14	52	49	21	206
Future Volume (veh/h)	93	462	437	74	791	41	495	14	52	49	21	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1900	1900	1841	1870	1900	1678	1900	1900	1826	1900
Adj Flow Rate, veh/h	97	481	298	77	824	39	527	0	12	51	22	12
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	4	0	0	4	2	0	15	0	0	5	0
Cap, veh/h	123	1907	1135	98	2604	123	620	0	275	78	48	26
Arrive On Green	0.02	0.18	0.18	0.11	1.00	1.00	0.17	0.00	0.17	0.04	0.04	0.04
Sat Flow, veh/h	1753	3497	1575	1810	4917	232	3619	0	1602	1810	1102	601
Grp Volume(v), veh/h	97	481	298	77	561	302	527	0	12	51	0	34
Grp Sat Flow(s),veh/h/ln	1753	1749	1575	1810	1675	1799	1810	0	1602	1810	0	1703
Q Serve(g_s), s	5.8	12.4	10.8	4.4	0.0	0.0	14.8	0.0	0.7	2.9	0.0	2.0
Cycle Q Clear(g_c), s	5.8	12.4	10.8	4.4	0.0	0.0	14.8	0.0	0.7	2.9	0.0	2.0
Prop In Lane	1.00		1.00	1.00		0.13	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	123	1907	1135	98	1775	953	620	0	275	78	0	74
V/C Ratio(X)	0.79	0.25	0.26	0.78	0.32	0.32	0.85	0.00	0.04	0.65	0.00	0.46
Avail Cap(c_a), veh/h	175	1907	1135	181	1775	953	1034	0	458	259	0	243
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	0.89	0.89	0.89	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.5	24.7	10.4	46.2	0.0	0.0	42.2	0.0	36.3	49.4	0.0	49.0
Incr Delay (d2), s/veh	8.5	0.3	0.5	4.5	0.4	0.8	1.6	0.0	0.0	3.4	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	5.8	7.4	2.0	0.1	0.2	6.8	0.0	0.3	1.4	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.0	25.0	10.9	50.7	0.4	0.8	43.7	0.0	36.3	52.8	0.0	50.7
LnGrp LOS	E	C	B	D	A	A	D	A	D	D	A	D
Approach Vol, veh/h		876			940			539			85	
Approach Delay, s/veh		23.9			4.7			43.6			52.0	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.2	62.3		9.5	11.8	60.6		23.0				
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0				
Max Green Setting (Gmax), s	10.5	30.0		15.0	10.5	30.0		30.0				
Max Q Clear Time (g_c+I1), s	6.4	14.4		4.9	7.8	2.0		16.8				
Green Ext Time (p_c), s	0.0	2.0		0.0	0.0	2.2		0.7				

Intersection Summary		
HCM 6th Ctrl Delay		21.8
HCM 6th LOS		C

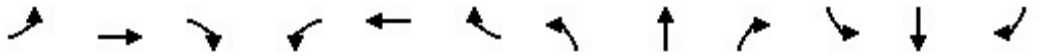
Notes
User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.

Intersection ID and Name	NB PhasingType	SB PhasingType	EB PhasingType	WB PhasingType	Cycle Leng	Lost Time	Use Overlap Calculator
1: I-5 SB Ramp & Boones Ferry Rd/Elligsen Rd		Split			105	14	
2: I-5 NB Ramp & Elligsen Rd	Protected				105	10	
3: Parkway Ave & Elligsen Rd	Split	Split	Protected	Protected	105	19.5	

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		WBL/EBT	EBL/WBT	NBL/SBT	SBL/NBT	V/S E/W	V/S N/S
Adj Flow Rate, veh/l	0	938	0	0	845	0	0	0	0	242	288	265	Protected	0.26	0.24	0.19	0.14		
Sat Flow, veh/h	0	3618	1560	0	3532	1598	0	0	0	1753	1781	1416	Permitted or Split	0.26	0.24	0.19	0.00		
V/S	0.00	0.26	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.14	0.16	0.19	selected phasing	0.26	0.24	0.19	0.00	0.26	0.19
Adj Flow Rate, veh/l	0	740	0	0	958	0	399	0	0	0	0	0	Protected	0.20	0.26	0.12	0.00		
Sat Flow, veh/h	0	3647	1535	0	3676	1572	3291	0	1572	0	0	0	Permitted or Split	0.20	0.26	0.00	0.12		
V/S	0.00	0.20	0.00	0.00	0.26	0.00	0.12	0.00	0.00	0.00	0.00	0.00	selected phasing	0.20	0.26	0.12	0.12	0.26	0.12
Adj Flow Rate, veh/l	97	481	298	77	824	39	527	0	12	51	22	12	Protected	0.23	0.22	0.17	0.04		
Sat Flow, veh/h	1753	3497	1575	1810	4917	232	3619	0	1602	1810	1102	601	Permitted or Split	0.19	0.17	0.03	0.15		
V/S	0.06	0.14	0.19	0.04	0.17	0.17	0.15	0.00	0.01	0.03	0.02	0.02	selected phasing	0.23	0.22	0.03	0.15	0.23	0.17

	NBR OV	NB OV V/S	SBR OV	SB OV V/S	EBR OV	EB OV V/S	WBR OV	WB OV V/S	V/S Overlap	Intersection V/	HCM 6th Ctrl Dela	HCM 6th LOS	Synchro ID
Right Turn Overlap	No	0.00	No	0.00	No	0.00	No	0.00	0.00				
Right Turn Approach Phasing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	No OV				
Overlap Approach Phasing	0.00	0.26	0.00	0.26	0.00	0.19	0.00	0.19	N/A	**0.51**	**16**	**B**	1
Right Turn Overlap	No	0.00	No	0.00	No	0.00	No	0.00	0.00				
Right Turn Approach Phasing	Protected	0.12	Protected	0.12	0.00	0.00	0.00	0.00	No OV				
Overlap Approach Phasing	0.00	0.26	0.00	0.26	Protected	0.00	Protected	0.00	N/A	**0.42**	**9**	**A**	2
Right Turn Overlap	No	0.00	No	0.00	No	0.00	No	0.00	0.00				
Right Turn Approach Phasing	Split	0.03	Split	0.15	Protected	0.06	Protected	0.06	No OV				
Overlap Approach Phasing	Protected	0.19	Protected	0.19	Split	0.03	Split	0.15	N/A	**0.50**	**22**	**C**	3

APPENDIX G: HCM REPORT – EXISTING + PROJECT + STAGE II



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰	↰	↱
Traffic Volume (veh/h)	0	917	717	0	831	523	0	0	0	357	123	558
Future Volume (veh/h)	0	917	717	0	831	523	0	0	0	357	123	558
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1841	0	1811	1885				1841	1781	1678
Adj Flow Rate, veh/h	0	945	0	0	857	0				248	296	276
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	3	4	0	6	1				4	8	15
Cap, veh/h	0	2459		0	2400					380	386	307
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00				0.22	0.22	0.22
Sat Flow, veh/h	0	3618	1560	0	3532	1598				1753	1781	1416
Grp Volume(v), veh/h	0	945	0	0	857	0				248	296	276
Grp Sat Flow(s),veh/h/ln	0	1763	1560	0	1721	1598				1753	1781	1416
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0				13.5	16.4	19.9
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0				13.5	16.4	19.9
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2459		0	2400					380	386	307
V/C Ratio(X)	0.00	0.38		0.00	0.36					0.65	0.77	0.90
Avail Cap(c_a), veh/h	0	2459		0	2400					417	424	337
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.81	0.00	0.00	0.88	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				37.5	38.6	40.0
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.4	0.0				2.6	6.8	23.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	0.1	0.0				5.8	7.6	16.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.4	0.0	0.0	0.4	0.0				40.1	45.4	63.5
LnGrp LOS	A	A		A	A					D	D	E
Approach Vol, veh/h		945			857						820	
Approach Delay, s/veh		0.4			0.4						49.9	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		77.2		27.8		77.2						
Change Period (Y+Rc), s		5.0		5.0		5.0						
Max Green Setting (Gmax), s		70.0		25.0		42.0						
Max Q Clear Time (g_c+I1), s		2.0		21.9		2.0						
Green Ext Time (p_c), s		9.1		0.9		7.6						

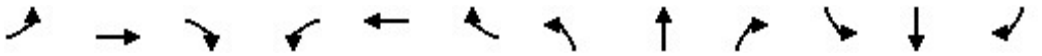
Intersection Summary		
HCM 6th Ctrl Delay		15.9
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

User approved changes to right turn type.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

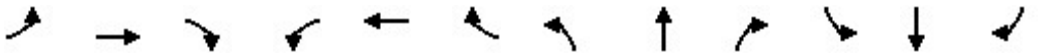


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	743	531	0	963	569	391	0	276	0	0	0
Future Volume (veh/h)	0	743	531	0	963	569	391	0	276	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1870	1811	0	1885	1856	1781	0	1856			
Adj Flow Rate, veh/h	0	758	0	0	983	0	399	0	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	0	2	6	0	1	3	8	0	3			
Cap, veh/h	0	2707		0	2728		486	0				
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00	0.15	0.00	0.00			
Sat Flow, veh/h	0	3647	1535	0	3676	1572	3291	0	1572			
Grp Volume(v), veh/h	0	758	0	0	983	0	399	0	0			
Grp Sat Flow(s),veh/h/ln	0	1777	1535	0	1791	1572	1646	0	1572			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	12.3	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	12.3	0.0	0.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2707		0	2728		486	0				
V/C Ratio(X)	0.00	0.28		0.00	0.36		0.82	0.00				
Avail Cap(c_a), veh/h	0	2707		0	2728		1113	0				
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.89	0.00	0.00	0.86	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	43.4	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.3	0.0	2.2	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	0.1	0.0	5.0	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	0.0	0.0	0.3	0.0	45.6	0.0	0.0			
LnGrp LOS	A	A		A	A		D	A				
Approach Vol, veh/h		758			983			399				
Approach Delay, s/veh		0.2			0.3			45.6				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		85.0				85.0		20.0				
Change Period (Y+Rc), s		5.0				5.0		4.5				
Max Green Setting (Gmax), s		60.0				60.0		35.5				
Max Q Clear Time (g_c+I1), s		2.0				2.0		14.3				
Green Ext Time (p_c), s		6.6				9.6		1.2				

Intersection Summary	
HCM 6th Ctrl Delay	8.7
HCM 6th LOS	A

Notes

Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	462	437	74	791	48	495	16	52	60	24	246
Future Volume (veh/h)	120	462	437	74	791	48	495	16	52	60	24	246
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1900	1900	1841	1870	1900	1678	1900	1900	1826	1900
Adj Flow Rate, veh/h	125	481	300	77	824	46	528	0	12	62	25	54
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	4	0	0	4	2	0	15	0	0	5	0
Cap, veh/h	154	1824	1098	98	2377	132	621	0	275	121	34	74
Arrive On Green	0.03	0.17	0.17	0.11	0.98	0.98	0.17	0.00	0.17	0.07	0.07	0.07
Sat Flow, veh/h	1753	3497	1575	1810	4871	271	3619	0	1602	1810	510	1101
Grp Volume(v), veh/h	125	481	300	77	566	304	528	0	12	62	0	79
Grp Sat Flow(s),veh/h/ln	1753	1749	1575	1810	1675	1792	1810	0	1602	1810	0	1610
Q Serve(g_s), s	7.4	12.5	11.3	4.4	0.6	0.6	14.9	0.0	0.7	3.5	0.0	5.1
Cycle Q Clear(g_c), s	7.4	12.5	11.3	4.4	0.6	0.6	14.9	0.0	0.7	3.5	0.0	5.1
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		0.68
Lane Grp Cap(c), veh/h	154	1824	1098	98	1635	874	621	0	275	121	0	108
V/C Ratio(X)	0.81	0.26	0.27	0.78	0.35	0.35	0.85	0.00	0.04	0.51	0.00	0.73
Avail Cap(c_a), veh/h	175	1824	1098	181	1635	874	1034	0	458	259	0	230
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	0.88	0.88	0.88	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.1	26.0	11.6	46.2	0.7	0.7	42.2	0.0	36.3	47.3	0.0	48.1
Incr Delay (d2), s/veh	18.3	0.3	0.6	4.5	0.5	1.0	1.6	0.0	0.0	1.2	0.0	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	5.9	7.6	2.0	0.3	0.4	6.8	0.0	0.3	1.6	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.5	26.3	12.1	50.7	1.2	1.6	43.8	0.0	36.3	48.6	0.0	51.6
LnGrp LOS	E	C	B	D	A	A	D	A	D	D	A	D
Approach Vol, veh/h		906			947			540			141	
Approach Delay, s/veh		27.4			5.3			43.6			50.3	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.2	59.8		12.0	13.7	56.2		23.0				
Change Period (Y+Rc), s	4.5	5.0		5.0	4.5	5.0		5.0				
Max Green Setting (Gmax), s	10.5	30.0		15.0	10.5	30.0		30.0				
Max Q Clear Time (g_c+I1), s	6.4	14.5		7.1	9.4	2.6		16.9				
Green Ext Time (p_c), s	0.0	2.0		0.1	0.0	2.2		0.7				

Intersection Summary		
HCM 6th Ctrl Delay	23.9	
HCM 6th LOS	C	

Notes

User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.

Intersection ID and Name	NB PhasingType	SB PhasingType	EB PhasingType	WB PhasingType	Cycle Leng	Lost Time	Use Overlap Calculator
1: I-5 SB Ramp & Boones Ferry Rd/Elligsen Rd		Split			105	14	
2: I-5 NB Ramp & Elligsen Rd	Protected				105	10	
3: Parkway Ave & Elligsen Rd	Split	Split	Protected	Protected	105	19.5	

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		WBL/EBT	EBL/WBT	NBL/SBT	SBL/NBT	V/S E/W	V/S N/S
Adj Flow Rate, veh/l	0	945	0	0	857	0	0	0	0	248	296	276	Protected	0.26	0.24	0.19	0.14		
Sat Flow, veh/h	0	3618	1560	0	3532	1598	0	0	0	1753	1781	1416	Permitted or Split	0.26	0.24	0.19	0.00		
V/S	0.00	0.26	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.14	0.17	0.19	selected phasing	0.26	0.24	0.19	0.00	0.26	0.19
Adj Flow Rate, veh/l	0	758	0	0	983	0	399	0	0	0	0	0	Protected	0.21	0.27	0.12	0.00		
Sat Flow, veh/h	0	3647	1535	0	3676	1572	3291	0	1572	0	0	0	Permitted or Split	0.21	0.27	0.00	0.12		
V/S	0.00	0.21	0.00	0.00	0.27	0.00	0.12	0.00	0.00	0.00	0.00	0.00	selected phasing	0.21	0.27	0.12	0.12	0.27	0.12
Adj Flow Rate, veh/l	125	481	300	77	824	46	528	0	12	62	25	54	Protected	0.23	0.24	0.19	0.04		
Sat Flow, veh/h	1753	3497	1575	1810	4871	271	3619	0	1602	1810	510	1101	Permitted or Split	0.19	0.17	0.05	0.15		
V/S	0.07	0.14	0.19	0.04	0.17	0.17	0.15	0.00	0.01	0.03	0.05	0.05	selected phasing	0.23	0.24	0.05	0.15	0.24	0.19

	NBR OV	NB OV V/S	SBR OV	SB OV V/S	EBR OV	EB OV V/S	WBR OV	WB OV V/S	V/S Overlap		Intersection V/	HCM 6th Ctrl Dela	HCM 6th LOS	Synchro ID
Right Turn Overlap	No	0.00	No	0.00	No	0.00	No	0.00		0.00				
Right Turn Approach Phasing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	No OV					
Overlap Approach Phasing	0.00	0.26	0.00	0.26	0.00	0.19	0.00	0.19	N/A		**0.52**	**16**	**B**	1
Right Turn Overlap	No	0.00	No	0.00	No	0.00	No	0.00		0.00				
Right Turn Approach Phasing	Protected	0.12	Protected	0.12	0.00	0.00	0.00	0.00	No OV					
Overlap Approach Phasing	0.00	0.27	0.00	0.27	Protected	0.00	Protected	0.00	N/A		**0.43**	**9**	**A**	2
Right Turn Overlap	No	0.00	No	0.00	No	0.00	No	0.00		0.00				
Right Turn Approach Phasing	Split	0.05	Split	0.15	Protected	0.07	Protected	0.07	No OV					
Overlap Approach Phasing	Protected	0.19	Protected	0.19	Split	0.05	Split	0.15	N/A		**0.54**	**24**	**C**	3