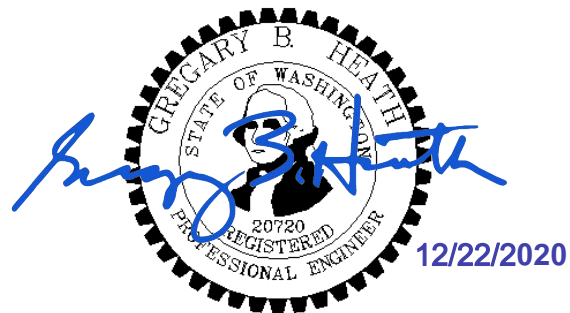




JACKSON VILLAS 4
TRAFFIC IMPACT ANALYSIS

Lewis County, WA



Prepared for: Mr. Aaron Fuller, P.E.
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645 SE Prospect Street
Chehalis, WA 98532

December 2020

JACKSON VILLAS 4
TRAFFIC IMPACT ANALYSIS

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JACKSON VILLAS 4 TRAFFIC IMPACT ANALYSIS

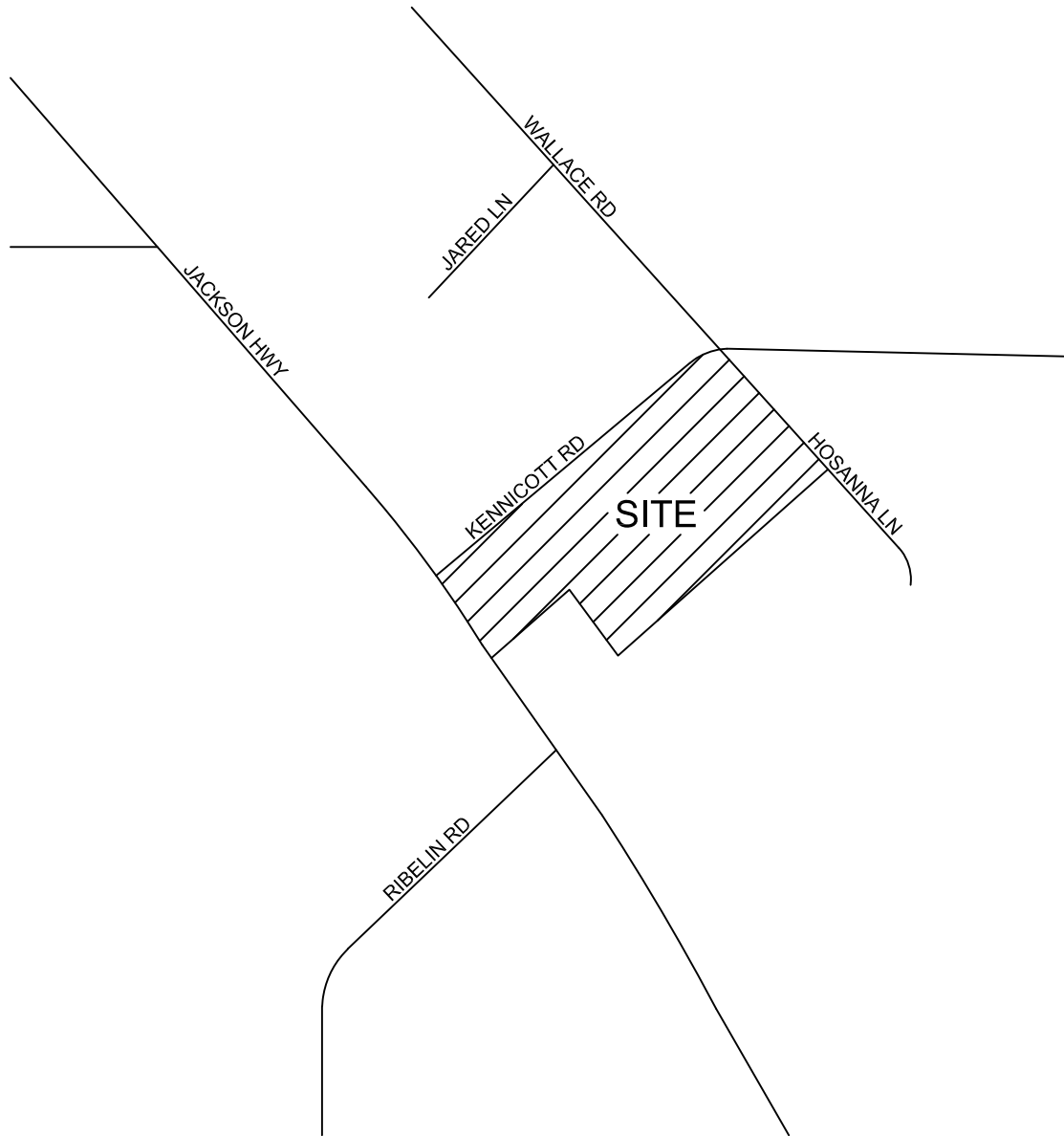
1. INTRODUCTION

The main goals of this study focus on the analysis of existing roadway conditions and forecasts of newly generated project traffic. The first task includes the review of general roadway information on the adjacent street system, baseline vehicular volumes, and entering sight distance data. Forecasts of future traffic and dispersion patterns on the street system are then determined using established trip generation and distribution techniques. As a final step, appropriate conclusions and mitigation measures are defined.

2. PROJECT DESCRIPTION

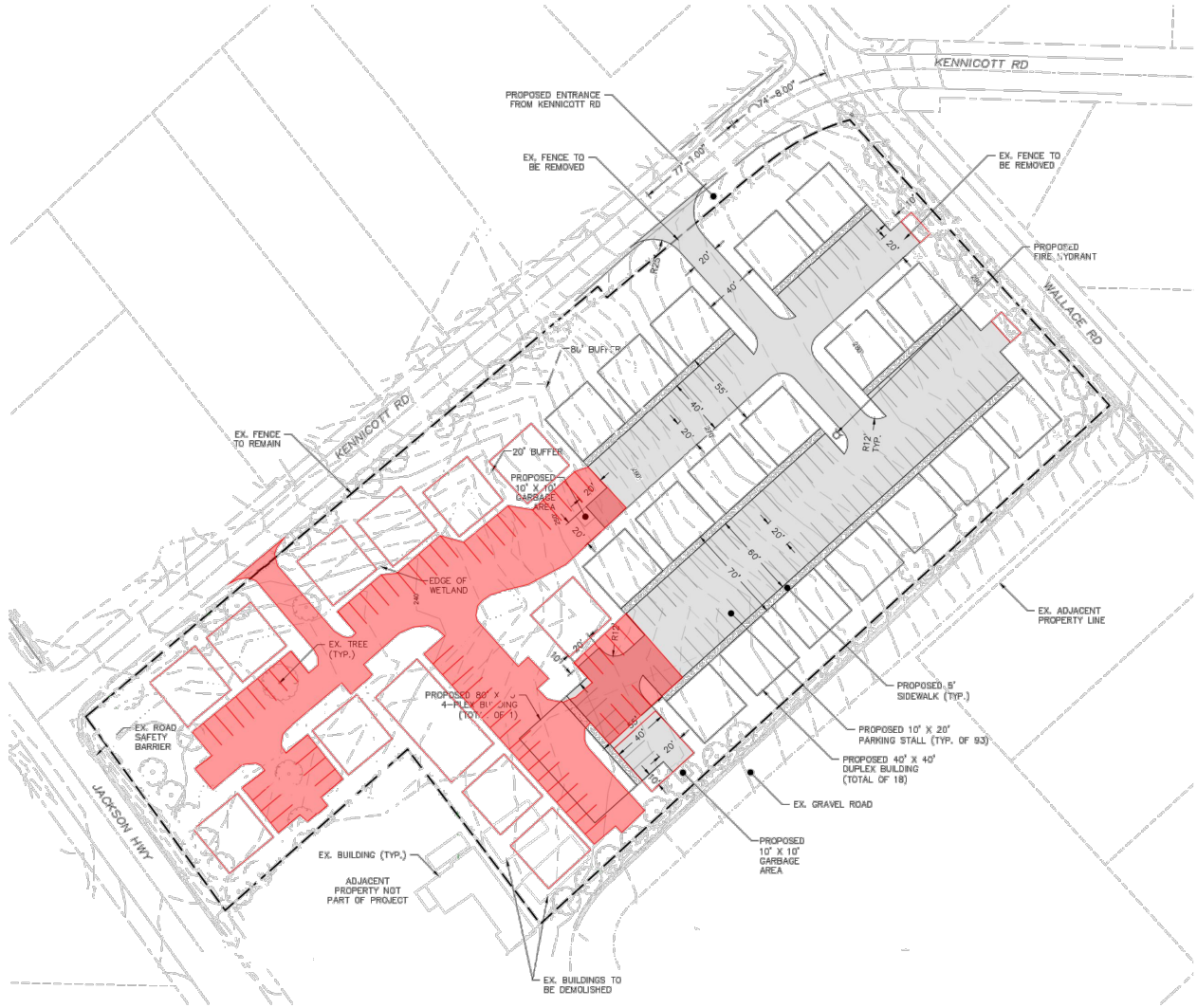
Jackson Villas 4 is a proposed development consisting of up to 69 multi-family dwelling units located in the Chehalis Urban Growth Area of Lewis County. The subject property is situated on the southeast corner of the Jackson Highway & Kennicott Road intersection on 4.32-acre parcel #: 010799001000. The lot is largely undeveloped with the exception of two small shed structures which are to be removed for new construction. Two accesses extending southeast from Kennicott Road are proposed to serve the subject site. Illustrated below is an aerial image demarcating the subject lot boundaries. Figure 1 on the following page identifies the adjacent street system and general project vicinity. A conceptual site plan of the project is presented in Figure 2.





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JACKSON VILLAS 4
VICINITY MAP & ROADWAY SYSTEM
FIGURE 1



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JACKSON VILLAS 4
SITE PLAN
FIGURE 2

3. EXISTING CONDITIONS

3.1 Existing Roadway Characteristics

The major roadways and arterials defined in the study area are listed and described below.

Jackson Highway: is a northwest-southeast, two-lane arterial bordering the subject site to the southwest. Travel lanes are approximately 11-feet in width. Shoulders are composed of paved segments 4- to 8-feet in width. No non-motorist facilities are present in the area. The roadway has a posted speed limit of 35 mph in the vicinity of the subject site.

Kennicott Road: is a northwest-southeast, two-lane local roadway bordering the subject site to the northwest. Travel lanes are approximately 11-feet in width. Vertical curb is present for an approximate 550-foot segment on the north side of the roadway from Jackson Highway. Elsewhere, shoulders are grass/gravel with no non-motorist facilities. The posted speed limit is 25 mph.

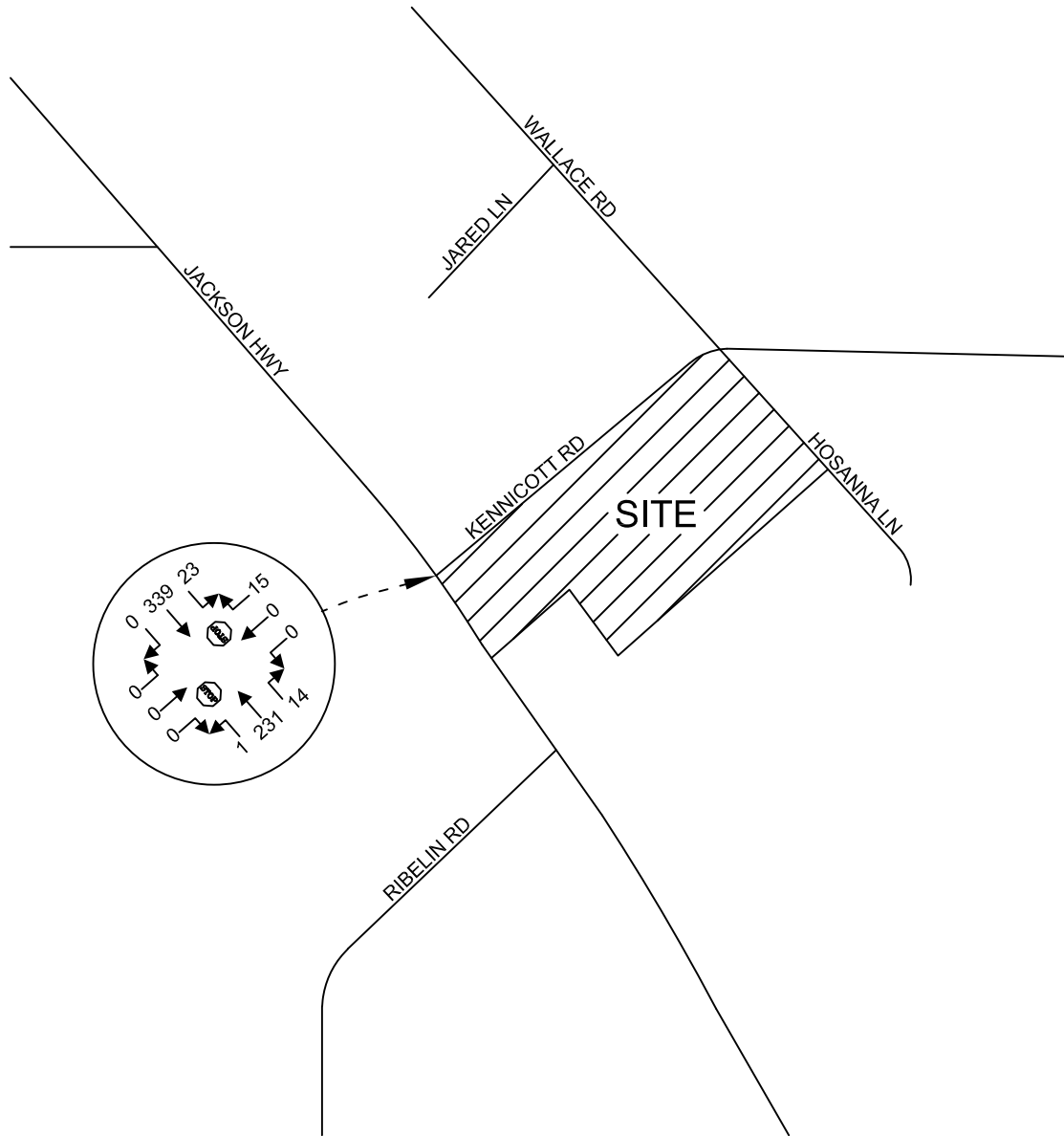
3.2 Pedestrian and Bicycle Activity

During field observations, no non-motorist transport was observed along Jackson Highway or Kennicott Road. The area is rural in nature with limited walkable amenities. No significant increase with respect to non-motorist transport would be expected from the development given the limited non-motorist infrastructure in the vicinity of the subject site.

3.3 Existing Peak Hour Volumes and Patterns

Field data for this study was collected in November of 2020. Traffic counts were taken at the intersection of Jackson Highway & Kennicott Road, which would receive the bulk of the anticipated vehicular demands. Data was obtained during evening peak period between the hours of 4:00 PM – 6:00 PM, which generally translates to highest overall roadway volumes in a given 24-hour period. The one hour reflecting highest overall roadway volumes (peak hour) was then derived from these counts.

Additionally, the WSDOT COVID-19 Transportation System Performance Multimodal Executive Summary showed that traffic volumes in the area along state facilities in Lewis County were on average 8% lower than typical baseline conditions on the date the count was taken. To remain conservative in analysis, existing PM peak hour volumes were increased by 10%. Adjusted baseline 2020 PM peak hour volumes at the study intersection are illustrated in Figure 3 on the following page. Full-count sheets have been included in the appendix.



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JACKSON VILLAS 4
BASELINE 2020 PM PEAK HOUR VOLUMES
FIGURE 3

3.4 Public Transit

A review of the Twin Transit regional bus schedule indicates that Route 444 – Downtown Chehalis provides service in the vicinity of the subject site. While the nearest stop in relation to the development is provided at Wallace Road & Jackson Highway (0.40 miles northwest), riders may flag down a bus at any safe and visible area along the route. Weekday service is provided from 7:00 AM – 7:00 PM (60-minute headways) while weekend service is provided from 7:00 AM – 3:00 PM (60-minute headways). Refer to the Twin Transit bus schedule for further details.

3.5 Roadway Improvements

A review of the Lewis County Six-Year (2021-2026) Transportation Improvement Program indicates the following planned projects in the general area.

Rush Road Improvements (Bishop Road to s/o Holloway Drive; Priority #15): This project entails a major widening of the roadway to include curb, gutter sidewalk and more. Local funds allocated to the project total \$2,280,000 and construction is to begin in 2023.

Downie Road Extension (southerly extension; Priority #25): This project entails extending the roadway south to Maurin Road. Federal discretionary funding totals \$1,200,000 and construction is to begin in 2025.

A review of the City of Chehalis Six-Year (2021-2026) Transportation Improvement Program indicates the following planned project in the general area.

Market Blvd – 13th to City Limits: This project entails reconstruction and pedestrian improvements along Market Blvd with a start year of 2023 and a total estimate cost of \$4,600,000.

3.6 Site Access & Driveway Design

As shown in the provided site plan, two accesses extending southeast from Kennicott Road are proposed. The northern driveway has been positioned such that approximately 160 feet of spacing has been provided from centerline-to-centerline with Wallace Road. In addition, field measurements indicate sight lines to measure to 280-285 feet when looking north through the Wallace Road intersection – meeting applicable code standards¹. No sight distance deficiencies are identified with either proposed access driveway.

¹ City of Chehalis Engineering Development Code Chapter 12.04.280 Streets, Section M. Sight Obstruction. Based on 25 mph roadway and two-lane roadway, 255 feet of intersection sight distance is required.

3.7 Level of Service

Baseline intersection delays were determined through the use of the *Highway Capacity Manual* 6th Edition. Capacity analysis is used to determine level of service (LOS) which is an established measure of congestion for transportation facilities. The range¹ for intersection level of service is LOS A to LOS F with the former indicating the best operating conditions with low control delays and the latter indicating the worst conditions with heavy control delays. Detailed descriptions of intersection LOS are given in the 2016 Highway Capacity Manual. Level of service calculations were made through the use of the *Synchro 10* analysis program. For side-street, stop-controlled intersections, LOS is determined by the approach with the highest delay. Table 1 below presents baseline 2020 PM peak hour LOS delays for the key intersection of study.

Table 1: Baseline 2020 PM Peak Hour Level of Service

Delays given in seconds per vehicle

Intersection	Control	Movement	LOS	Delay
Jackson Highway & Kennicott Road	Stop	SWB	A	9.7

SWB: Southwest-bound

Existing PM peak hour conditions are shown to operate with minimal delays at LOS A indicating stable operations during the critical PM peak hour of travel.

¹ *Signalized Intersections - Level of Service*

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

Stop Controlled Intersections – Level of Service

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

Highway Capacity Manual, 6th Edition

4. FUTURE TRAFFIC CONDITIONS

4.1 Trip Generation

Trip generation is used to determine the magnitude of project impacts on the surrounding street system. This is usually denoted by the quantity or specific number of new trips that enter and exit a project during a designated time period, such as a specific peak hour (AM or PM) or an entire day. Data presented in this report was taken from the Institute of Transportation Engineer's publication *Trip Generation*, 10th Edition. The designated land use for this project is defined as Multifamily Housing Low-Rise (LUC 220). Table 2 below summarizes the estimated project trip generation using ITE rates. Included are the average weekday daily traffic (AWDT) and the AM and PM peak hours. Refer to the appendix for trip generation output.

Table 2: Project Trip Generation

Land Use	Size	AWDT	AM Peak-Hour Trips			PM Peak-Hour Trips		
			In	Out	Total	In	Out	Total
Multi-Family Low-Rise	69 units	505	7	25	32	24	15	39

Based on ITE data, the project is anticipated to generate 505 new daily weekday trips with 32 trips occurring in the AM peak hour and 39 in the PM peak hour.

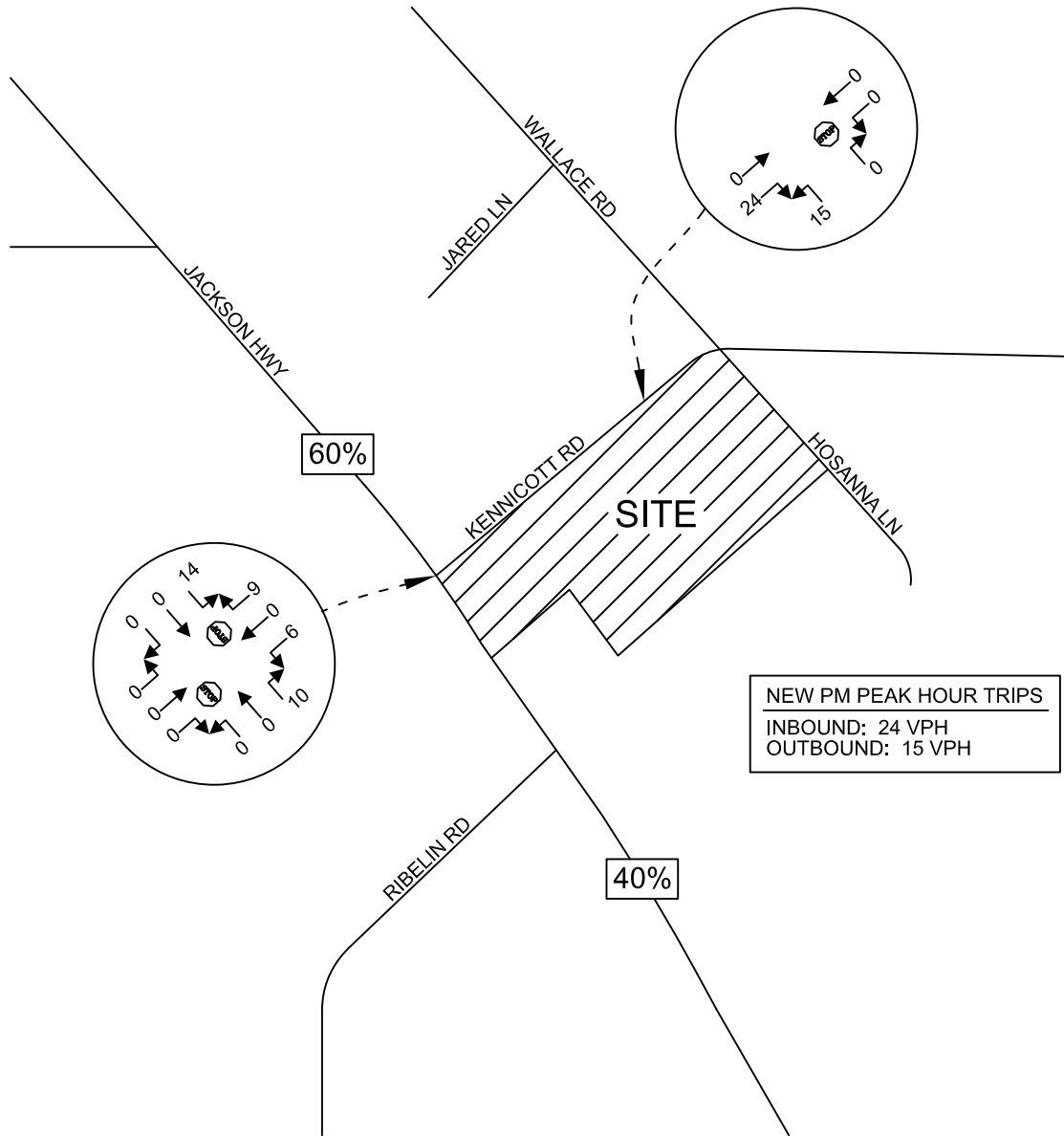
4.2 Trip Distribution and Assignment

Trip distribution describes the process by which project generated trips are dispersed on the street network surrounding the site. PM peak hour trips generated by the project are expected to follow the general trip pattern as shown on Figure 4 on the following page. Percentages are generally based on the existing travel patterns identified in the field counts and location of the nearby roadway network. All project generated traffic was consolidated to a single access to remain conservative in analysis.

4.3 Future Peak Hour Volumes

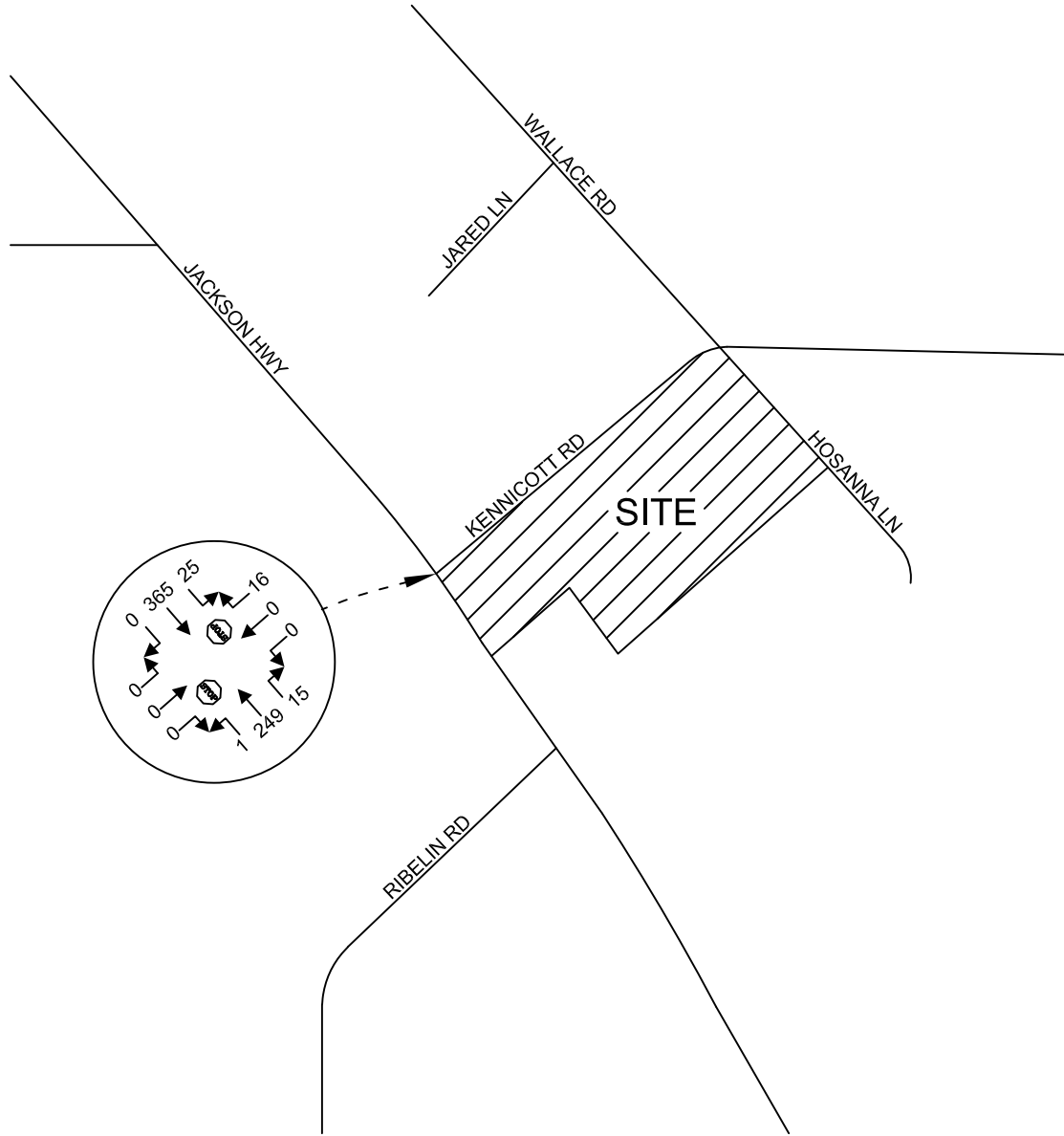
A 5-year horizon of 2025 was used for future traffic delay analysis. The proposed development is located within the Chehalis Urban Growth Area of Lewis County. The City is forecasted to grow at an annual rate of 1.50%² according to the Chehalis Comprehensive Plan (2017). Therefore, forecast 2025 background traffic volumes were derived by applying a 1.5 percent compound annual growth rate to the baseline 2020 PM peak hour volumes shown in Figure 3. Forecast 2025 PM peak hour volumes without and with the addition of project-generated traffic are shown in Figures 5 and 6, respectively.

² Chehalis Comprehensive Plan 2017: Chapter 3 Land Use, pg. 4



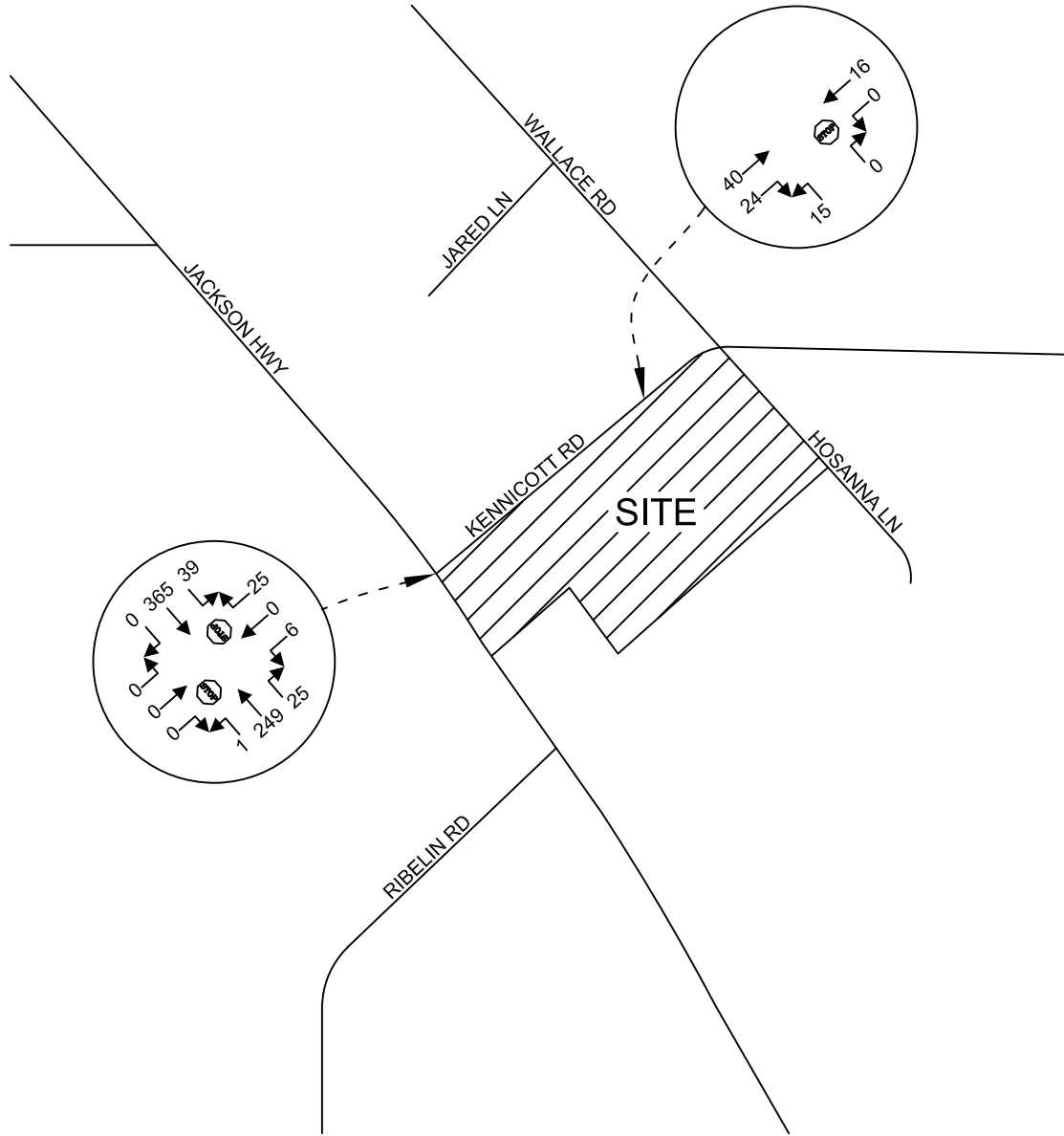
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JACKSON VILLAS 4
PM PEAK HOUR TRIP DISTRIBUTION & ASSIGNMENT
FIGURE 4



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TRAFFIC AND CIVIL ENGINEERING

JACKSON VILLAS 4
FORECAST 2025 PM PEAK HOUR BACKGROUND VOLUMES
FIGURE 5



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JACKSON VILLAS 4
FORECAST 2025 PM PEAK HOUR VOLUMES WITH PROJECT
FIGURE 6

4.4 Future Level of Service

Level of service analyses were made of the future PM peak hour volumes without (background) and with project related trips added to the key roadways and intersections. This analysis once again involved the use of the *Synchro 10* analysis program. Delays for the study and access intersections under future conditions are shown below in Table 3.

Table 3: Forecast 2025 PM Peak Hour Level of Service

Delays given in seconds per vehicle

Intersection	Control	Movement	<u>Background</u>		<u>With Project</u>	
			LOS	Delay	LOS	Delay
Jackson Highway & Kennicott Road	Stop	SWB	A	9.8	B	11.3
Project Access & Kennicott Road	Stop	NWB	-	-	A	8.9

SWB: Southwest-bound NWB: Northwest-bound

Forecast 2025 PM peak hour Level of Service at the proposed access and study intersection are shown to operate at LOS B or better. No operational deficiencies are identified as a result of the proposed development.

4.5 Left Turn Lane Warrants

Left turn lanes are a means of providing necessary storage space for left turning vehicles at intersections. For this impact study, procedures described by the WSDOT Design Manual Exhibit 1310-7a were used to ascertain storage requirements at the study intersection of Jackson Highway & Kennicott Road. Requirements are based on a function of vehicular volumes, number of left-turning vehicles from the major roadway, and posted speed limits. Based on forecast 2025 PM peak hour volumes with project traffic, a left turn lane *would not be warranted*. Refer to the appendix for the warrant nomographs.

5. SUMMARY

Jackson Villas 4 is a proposed 69-unit multi-family development located in the Chehalis Urban Growth Area of Lewis County. The subject site is located on 4.32-acre tax parcel #: 010799001000. Access to the site is to be provided via two driveways extending southeast from Kennicott Road as shown in the site plan on Figure 2. Based on ITE data the project would be anticipated to generate 32 new AM peak hour trips (7 in / 25 out) and 39 new PM peak hour trips (24 in / 15 out).

Existing level of service (LOS) is summarized in Table 1 and indicates Jackson Highway & Kennicott Road operating with delays of LOS A. For forecast analyses, a five-year horizon was evaluated to assess impacts under future conditions. Table 3 summarizes forecast 2025 PM peak hour LOS delays without and with the project. Forecast 2025 conditions are shown to operate satisfactorily with LOS B or better conditions indicating no operational deficiencies.

Based on the analysis above, no mitigation is identified at this time.

Please feel free to contact me should you have further questions or concerns.

JACKSON VILLAS 4
TRAFFIC IMPACT ANALYSIS

APPENDIX

LEVEL OF SERVICE

The following are excerpts from the *2016 Highway Capacity Manual - Transportation Research Board Special Report 209*.

Six LOS are defined for each type of facility that has analysis procedures available. Letters designate each level, from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each level of service represents a range of operating conditions and the driver's perception of those conditions.

Level-of-Service definitions

Level of service A represents primarily free-flow operations at average travel speeds, usually about 90 percent of the free-flow speed for the arterial classification. Vehicles are seldom impeded in their ability to maneuver in the traffic stream. Delay at signalized intersections is minimal.

Level of service B represents reasonably unimpeded operations at average travel speeds, usually about 70 percent of the free-flow speed for the arterial classification. The ability to maneuver in the traffic stream is only slightly restricted and delays are not bothersome.

Level of service C represents stable operations; however, ability to maneuver and change lanes in midblock locations may be more restricted than in LOS B, and longer queues, adverse signal coordination, or both may contribute to lower average travel speeds of about 50 percent of the average free-flow speed for the arterial classification.

Level of service D borders on a range in which small increases in flow may cause substantial increases in approach delay and hence decreases in arterial speed. LOS D may be due to adverse signal progression, inappropriate signal timing, high volumes, or some combination of these. Average travel speeds are about 40 percent of free-flow speed.

Level of service E is characterized by significant delays and average travel speeds of one-third the free-flow speed or less. Such operations are caused by some combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.

Level of service F characterizes arterial flow at extremely low speeds, from less than one-third to one-quarter of the free-flow speed. Intersection congestion is likely at critical signalized locations, with long delays and extensive queuing.

Heath & Associates

2214 Tacoma Rd E
Puyallup, WA 98371

File Name : 4528a
Site Code : 00004528
Start Date : 11/10/2020
Page No : 1

Groups Printed- Class 1

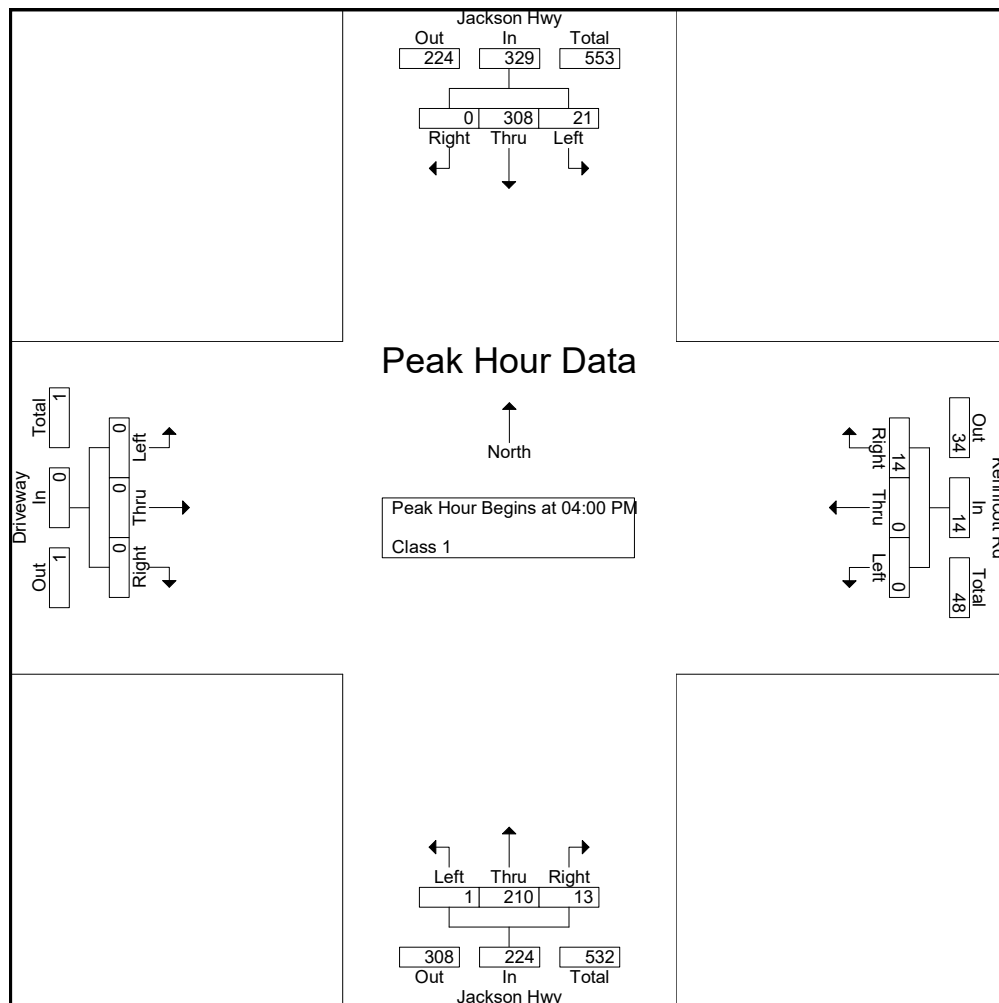
Start Time	Jackson Hwy Southbound				Kennicott Rd Westbound				Jackson Hwy Northbound				Driveway Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
04:00 PM	0	60	3	63	3	0	0	3	4	78	1	83	0	0	0	0	149
04:15 PM	0	71	3	74	5	0	0	5	3	51	0	54	0	0	0	0	133
04:30 PM	0	85	7	92	2	0	0	2	2	40	0	42	0	0	0	0	136
04:45 PM	0	92	8	100	4	0	0	4	4	41	0	45	0	0	0	0	149
Total	0	308	21	329	14	0	0	14	13	210	1	224	0	0	0	0	567
05:00 PM	0	86	2	88	3	0	0	3	1	39	0	40	0	0	0	0	131
05:15 PM	0	87	5	92	1	0	3	4	2	28	0	30	1	0	0	1	127
05:30 PM	0	62	3	65	4	0	2	6	2	31	0	33	0	0	0	0	104
05:45 PM	0	43	3	46	2	0	5	7	4	30	0	34	0	0	0	0	87
Total	0	278	13	291	10	0	10	20	9	128	0	137	1	0	0	1	449
Grand Total	0	586	34	620	24	0	10	34	22	338	1	361	1	0	0	1	1016
Apprch %	0	94.5	5.5		70.6	0	29.4		6.1	93.6	0.3		100	0	0		
Total %	0	57.7	3.3	61	2.4	0	1	3.3	2.2	33.3	0.1	35.5	0.1	0	0	0.1	

Heath & Associates

2214 Tacoma Rd E
Puyallup, WA 98371

File Name : 4528a
Site Code : 00004528
Start Date : 11/10/2020
Page No : 2

Start Time	Jackson Hwy Southbound				Kennicott Rd Westbound				Jackson Hwy Northbound				Driveway Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	60	3	63	3	0	0	3	4	78	1	83	0	0	0	0	149
04:15 PM	0	71	3	74	5	0	0	5	3	51	0	54	0	0	0	0	133
04:30 PM	0	85	7	92	2	0	0	2	2	40	0	42	0	0	0	0	136
04:45 PM	0	92	8	100	4	0	0	4	4	41	0	45	0	0	0	0	149
Total Volume	0	308	21	329	14	0	0	14	13	210	1	224	0	0	0	0	567
% App. Total	0	93.6	6.4		100	0	0		5.8	93.8	0.4		0	0	0		
PHF	.000	.837	.656	.823	.700	.000	.000	.700	.813	.673	.250	.675	.000	.000	.000	.000	.951



Multifamily Housing (Low-Rise) (220)

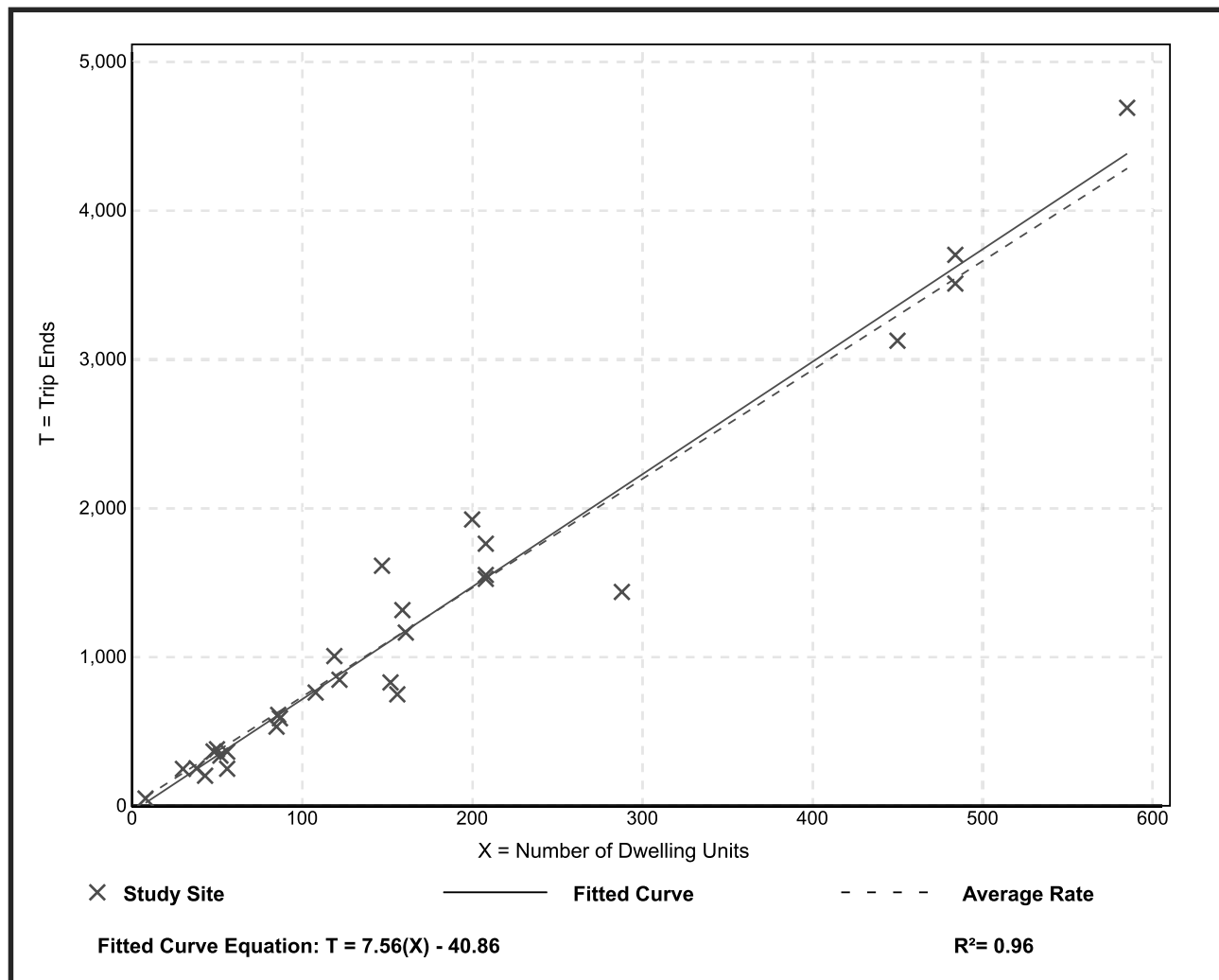
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 29
Avg. Num. of Dwelling Units: 168
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.32	4.45 - 10.97	1.31

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

Multifamily Housing (Low-Rise) (220)

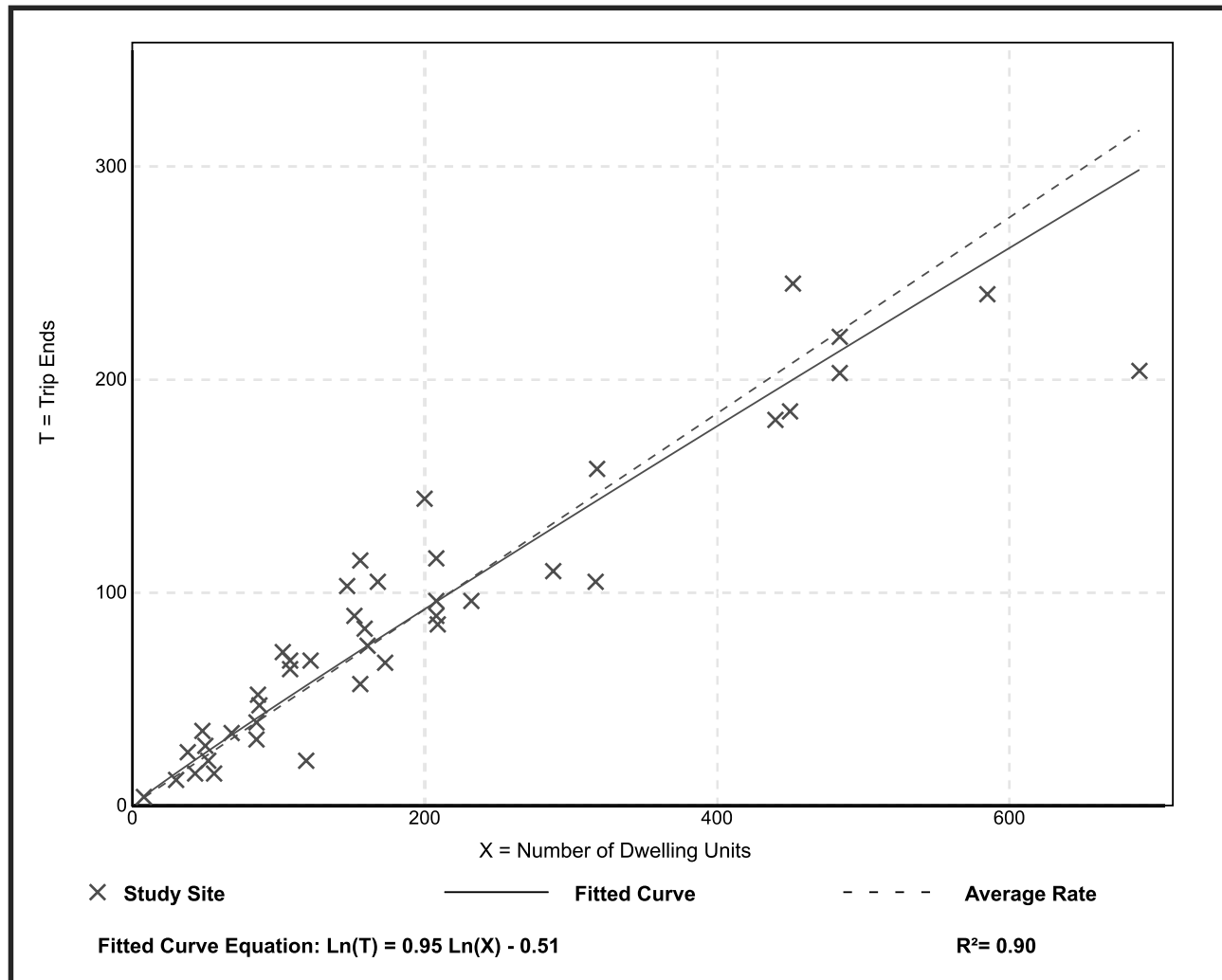
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban
 Number of Studies: 42
 Avg. Num. of Dwelling Units: 199
 Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.18 - 0.74	0.12

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

Multifamily Housing (Low-Rise) (220)

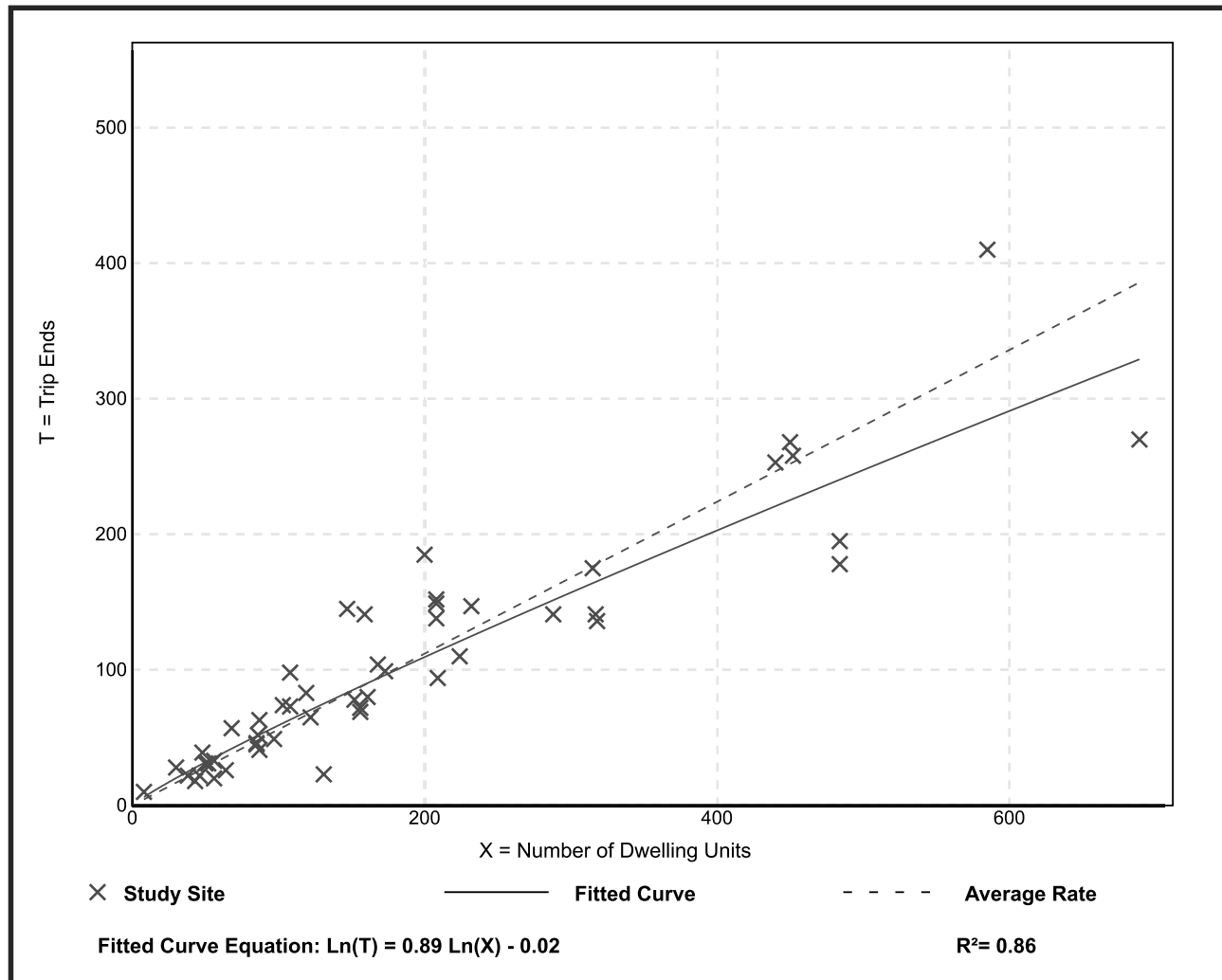
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban
 Number of Studies: 50
 Avg. Num. of Dwelling Units: 187
 Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.56	0.18 - 1.25	0.16

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

Intersection												
Int Delay, s/veh	0.5											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	23	339	0	1	231	14	0	0	0	0	0	15
Future Vol, veh/h	23	339	0	1	231	14	0	0	0	0	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	357	0	1	243	15	0	0	0	0	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	258	0	0	357	0	0	666	665	357	658	658	251
Stage 1	-	-	-	-	-	-	405	405	-	253	253	-
Stage 2	-	-	-	-	-	-	261	260	-	405	405	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1307	-	-	1202	-	-	373	381	687	378	384	788
Stage 1	-	-	-	-	-	-	622	598	-	751	698	-
Stage 2	-	-	-	-	-	-	744	693	-	622	598	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	1307	-	-	1202	-	-	359	372	687	371	375	788
Mov Cap-2 Maneuver	-	-	-	-	-	-	359	372	-	371	375	-
Stage 1	-	-	-	-	-	-	608	584	-	734	697	-
Stage 2	-	-	-	-	-	-	728	692	-	608	584	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.5	0	0	9.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	-	1202	-	-	1307	-	788
HCM Lane V/C Ratio	-	0.001	-	-	0.019	-	0.02
HCM Control Delay (s)	0	8	0	-	7.8	0	9.7
HCM Lane LOS	A	A	A	-	A	A	A
HCM 95th %tile Q(veh)	-	0	-	-	0.1	-	0.1

Intersection												
Int Delay, s/veh	0.5											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	365	0	1	249	15	0	0	0	0	0	16
Future Vol, veh/h	25	365	0	1	249	15	0	0	0	0	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	384	0	1	262	16	0	0	0	0	0	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	278	0	0	384	0	0	717	716	384	708	708	270
Stage 1	-	-	-	-	-	-	436	436	-	272	272	-
Stage 2	-	-	-	-	-	-	281	280	-	436	436	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1285	-	-	1174	-	-	345	356	664	350	360	769
Stage 1	-	-	-	-	-	-	599	580	-	734	685	-
Stage 2	-	-	-	-	-	-	726	679	-	599	580	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1285	-	-	1174	-	-	331	346	664	343	350	769
Mov Cap-2 Maneuver	-	-	-	-	-	-	331	346	-	343	350	-
Stage 1	-	-	-	-	-	-	583	565	-	715	684	-
Stage 2	-	-	-	-	-	-	709	678	-	583	565	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.5	0	0	9.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	-	1174	-	-	1285	-	769
HCM Lane V/C Ratio	-	0.001	-	-	0.02	-	0.022
HCM Control Delay (s)	0	8.1	0	-	7.9	0	9.8
HCM Lane LOS	A	A	A	-	A	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0.1	-	0.1

Intersection												
Int Delay, s/veh	0.9											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	39	365	0	1	249	25	0	0	0	6	0	25
Future Vol, veh/h	39	365	0	1	249	25	0	0	0	6	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	384	0	1	262	26	0	0	0	6	0	26

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	288	0	0	384	0	0	756	756	384	743	743	275
Stage 1	-	-	-	-	-	-	466	466	-	277	277	-
Stage 2	-	-	-	-	-	-	290	290	-	466	466	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1274	-	-	1174	-	-	325	337	664	331	343	764
Stage 1	-	-	-	-	-	-	577	562	-	729	681	-
Stage 2	-	-	-	-	-	-	718	672	-	577	562	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	1274	-	-	1174	-	-	304	323	664	320	329	764
Mov Cap-2 Maneuver	-	-	-	-	-	-	304	323	-	320	329	-
Stage 1	-	-	-	-	-	-	553	539	-	699	680	-
Stage 2	-	-	-	-	-	-	693	671	-	553	539	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.8	0	0	11.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1
Capacity (veh/h)	-	1174	-	-	1274	-	602
HCM Lane V/C Ratio	-	0.001	-	-	0.032	-	0.054
HCM Control Delay (s)	0	8.1	0	-	7.9	0	11.3
HCM Lane LOS	A	A	A	-	A	A	B
HCM 95th %tile Q(veh)	-	0	-	-	0.1	-	0.2

Intersection						
Int Delay, s/veh	1.4					
Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	15	0	40	24	0	16
Future Vol, veh/h	15	0	40	24	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	0	43	26	0	17

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	73	56	0	0	69	0
Stage 1	56	-	-	-	-	-
Stage 2	17	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	931	1011	-	-	1532	-
Stage 1	967	-	-	-	-	-
Stage 2	1006	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	931	1011	-	-	1532	-
Mov Cap-2 Maneuver	931	-	-	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	1006	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NET	NERNWLn1	SWL	SWT
Capacity (veh/h)	-	-	931	1532
HCM Lane V/C Ratio	-	-	0.018	-
HCM Control Delay (s)	-	-	8.9	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Exhibit 1310-7a Left-Turn Storage Guidelines: Two-Lane, Unsignalized

