Jamie Donaldson

From: Mark Lowen <MLowen@livebsl.com>
Sent: Tuesday, February 1, 2022 4:38 PM
To: Jamie Donaldson
Subject: RE: RE: CPC -ZC21-06 Titan Hill - Open Record Submission

Hi Jamie.

The Salem HNA update and Building Permit status documents are being submitted to provide supporting documentation of the ongoing demand for multi-family housing in Salem.

The memo from Transight consulting is being added to the record to further clarify the response to the ODOT letter dated 1/18/22, received after the PC hearing on 1/25/22

Thank you,

Mark Lowen
Project Manager

Bonaventure®
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3425 Boone Road SE | Salem, OR 97317
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From: Mark Lowen
Sent: Tuesday, February 1, 2022 2:51 PM
To: Jamie Donaldson <JDonaldson@cityofsalem.net>
Subject: RE: CPC -ZC21-06 Titan Hill - Open Record Submission

Good afternoon, Jamie.

Please include these attached items in the public record file for, CPC-ZC21-06 - 2100 Block of Doaks Ferry Rd NW;

Thank you,

Mark Lowen
Project Manager

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CITY OF Salem AT YOUR SERVICE

MEMORANDUM

COMMUNITY DEVELOPMENT DEPARTMENT

DATE: **APRIL 20, 2021**

TO: **PLANNING COMMISSION**

FROM: **EUNICE KIM, LONG RANGE PLANNING MANAGER**

SUBJECT: **UPDATE ON MULTIFAMILY DEVELOPMENT**

The City of Salem Planning Division has been working to implement the Salem Housing Needs Analysis (HNA) Work Plan since directed to do so by City Council in 2016. The work plan advances recommendations in the HNA to address the projected 207-acre deficit of multifamily land (2,897 dwelling units) in Salem's portion of the urban growth boundary (UGB). This memorandum outlines what has been accomplished, what is in the works, and what progress has been made toward the projected deficit.

HNA Work Plan Projects

The HNA Work Plan includes three phases of work as shown below.

Phase	Project
Phase 1 – Expand Housing Choices	
	1. Allow accessory dwelling units ✓
	2. Allow more multifamily housing types in single-family zones **In progress**
Phase 2 – Encourage Multifamily Development	
	3. Revise design review process ✓
	4. Revise Planned Unit Development regulations
	5. Identify tools to increase redevelopment ✓
Phase 3 – Redesignate Land	
	6. Redesignate land for multifamily housing **In progress**

Land for Multifamily Housing

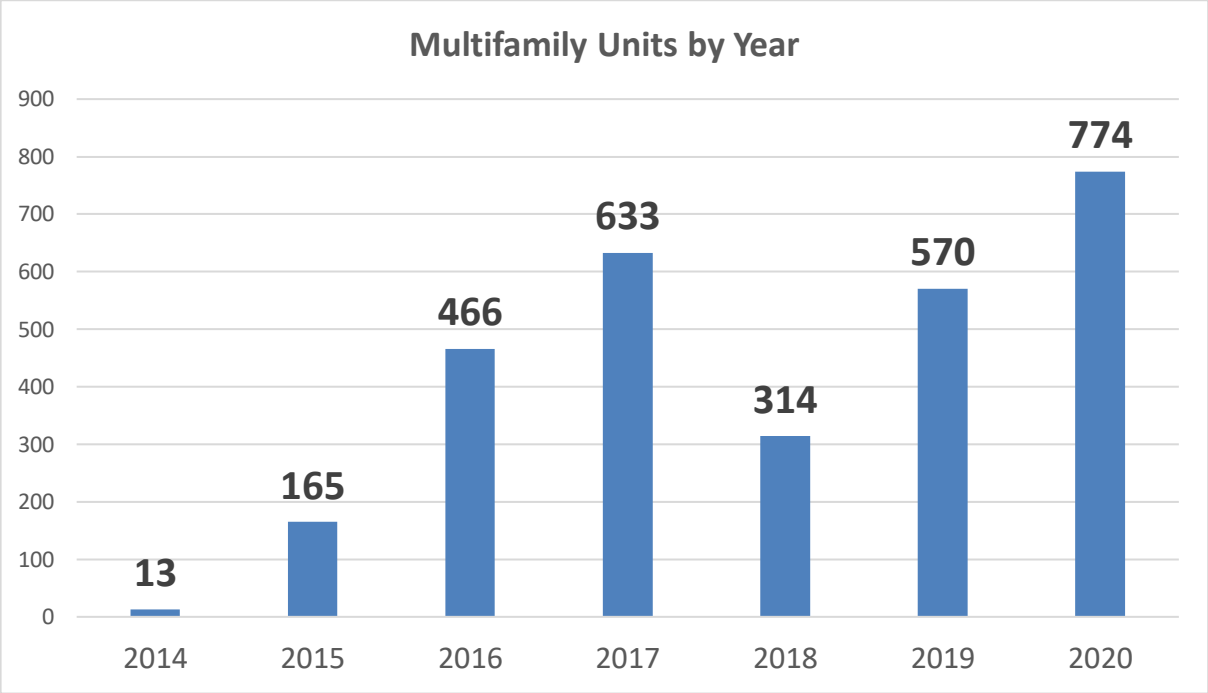
Between January 2014 and March 2020, there has been a net increase of roughly 40 acres of land designated as Multi-Family Residential on the Comprehensive Plan Map. The amount of additional multifamily land does not account for zone changes from Multiple Family-I (RM-I) to Multiple Family-II (RM-II). The HNA – and the projected deficit of multifamily land – is based on Comprehensive Plan designations as opposed to zoning, and land that is zoned RM-I and RM-II generally have a Comprehensive Plan designation of Multi-Family Residential.

In addition to the new Multifamily land, there has been a net increase of roughly 102 acres of land designated as Mixed Use on the Comprehensive Plan Map. Much of this land was redesignated to accommodate mixed-use developments that include multifamily housing.

Multifamily Development

Multifamily housing has continued to be developed in Salem since the HNA was completed. The HNA relied on building permit data through February of 2014. Between that time and the end of 2020, building permits have been issued for 2,935 new multifamily units.

Attachment 1 shows that multifamily development has been occurring across Salem. The map shows building permits for multifamily units by year, as does the chart below. The number of building permits for multifamily units hit a high of 774 units last year.



House Bill 2001

In 2019, the State Legislature passed House Bill 2001 to help increase housing choices and housing supply in Oregon. It requires large cities like Salem to allow a duplex on each lot that is zoned for residential use that allows development of a detached single-family dwelling. That means, for example, that a duplex must be allowed on all lots that are at least 4,000 square feet in the Single-Family Residential (RS) zone.

Salem must also allow other types of middle housing – triplexes, quadplexes, townhouses, and cottage clusters – in *areas* zoned for residential use that allow detached single-family dwellings. Specifically, new administrative rules recently adopted by the State include a provision that requires triplexes, quadplexes, and cottage clusters to be allowed in residential areas based on lot size. In Salem, the requirement is:

- A triplex is allowed on a lot that is at least 5,000 square feet in size
- A quadplex is allowed on a lot that is at least 7,000 square feet in size
- A cottage cluster is allowed on a lot that is at least 7,000 square feet in size

The City must comply with HB 2001 and its associated rules by June 30, 2022. Staff is reviewing the rules and plans to propose changes to Salem's zoning code to comply this spring or early summer. In the meantime, staff has created a webpage to answer frequently asked questions about HB 2001.

Our Salem

Staff continues to work on the Our Salem project, which is a multi-year project to update the Salem Area Comprehensive Plan. After a year and a half of community engagement, the City – working with a consultant team – has developed the Our Salem Vision for future growth and development. This vision includes proposed changes to the Comprehensive Plan Map that significantly increase the amount of land designated Multi-Family Residential and Mixed Use. Specifically, the proposed changes redesignate roughly 290 acres to Multi-Family and 1,700 acres to Mixed Use. Both designations allow multifamily housing. The proposed changes will accommodate Salem's projected housing needs as identified in the HNA.

Staff plans to develop and propose Comprehensive Plan policies, zoning map changes, and zoning code changes in line with the Vision later this year. By the end of this year, staff plans to bring all of those proposed changes – including the proposed Comprehensive Plan Map – through the adoption process.

Design Review

The City has updated Salem's design regulations on multifamily housing as a result of the Multifamily Housing Design project. The updated regulations help meet our community's housing needs by removing barriers to the development of multifamily housing and ensuring that new development is compatible with our neighborhoods. The City Council approved the changes in February 2020.

Effective in March 2020, the changes:
- Provide greater flexibility in how multifamily design standards can be met
- Reduce the number of design standards for small multifamily housing projects
- Simplify the regulations for three and four-unit projects
- Reduce parking requirements for multifamily projects of all sizes

Details can be found on the Multifamily Housing Design Standards webpage.

Tools to Increase Redevelopment

The City has implemented several tools to increase redevelopment (and infill development) for housing in recent years. As mentioned above, the City waived SDCs for ADUs for five years.

As part of the Multifamily Housing Design code amendment, the City simplified the approval process for multifamily housing development. Specifically, if multifamily housing projects cannot meet all of the City's design standards, those projects can now apply for an adjustment, which is an administrative approval. Prior to the code amendment, such projects had to go through a public hearing process at the Planning Commission.

The City also decreased parking requirements for housing to spur redevelopment and infill housing development.

- Off-street parking is no longer required for multifamily projects that are either located in the Central Salem Development Program area downtown or within a quarter-mile of Cherriots' Core Network. The Core Network consists of corridors throughout Salem where Cherriots has committed to providing frequent transit service.
- The parking requirement for housing projects with three to 12 units has been reduced to 1 space per unit.
- The parking requirement for affordable housing units (e.g., 80 percent of family median income) has been reduced by 25 percent.
- The City has provided other options for reducing parking requirements for multifamily housing projects. For example, such projects can provide additional covered bicycle parking or on-site shared vans to reduce their parking requirement.

In addition, the City has initiated and adopted Comprehensive Plan Map changes to land along State Street and in West Salem from Commercial to Mixed Use in recent years. These redesignations of land have simplified the approval process for multifamily housing to spur housing redevelopment and infill development. In particular, multifamily housing is now a permitted use in the Mixed Use areas, where previously a conditional use permit was required (e.g., public hearing process).

Last year, the City created a new tax increment financing (TIF) district to incent additional affordable housing in a residential development on the former North Campus of the State Hospital site. This is a new tool that the City has implemented to help increase the supply of affordable housing in Salem.

Accessory Dwelling Units

In 2017, City Council approved a code amendment to allow accessory dwelling units (ADUs), and it became effective on August 9, 2017. As of the end of 2020, 77 building permits have been approved for ADUs in Salem.

Since July 1, 2019, the system development charges (SDCs) for ADUs have been waived for five years. This amounts to more than $4,000 in cost savings per new ADU. The waiver will continue until June 30, 2024. It is the result of a City Council vote on February 25, 2019 to update the methodologies used to determine SDCs for parks, transportation, water, wastewater, and stormwater infrastructure.

Background

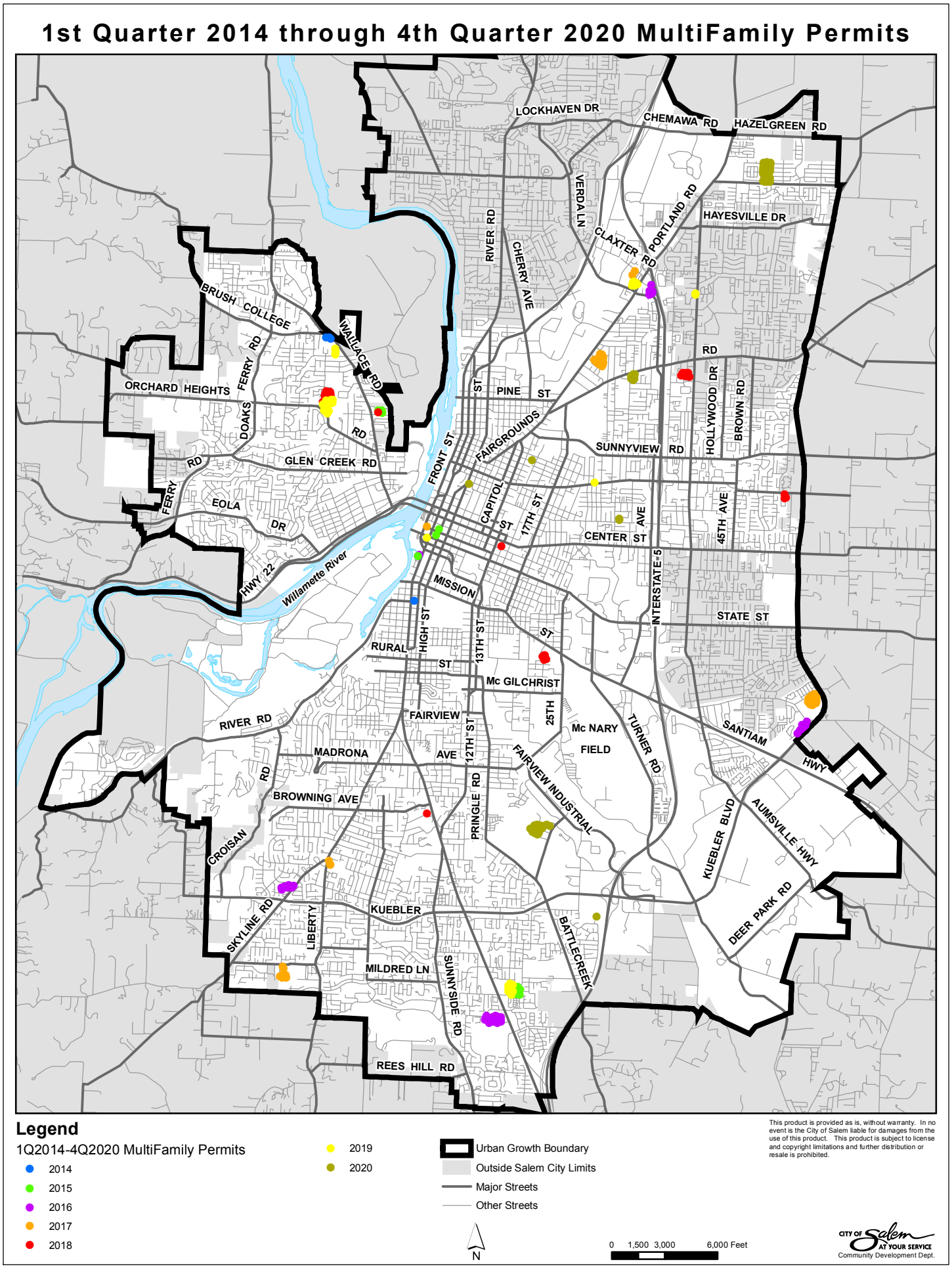
The City of Salem completed the HNA in December 2014. The purpose was to develop strategies to provide enough land to meet Salem's housing needs over the next 20 years and to inform policy decisions related to residential land. The HNA, in conjunction with the Salem Economic Opportunities Analysis, validated that the existing UGB does not need to be expanded to meet Salem's land needs.

The HNA found that Salem's portion of the UGB has a projected 1,975-acre surplus of land for single-family housing (9,131 units) and a projected 207-acre deficit of land designated for multifamily housing (2,897 units). Under state law, the City cannot adopt the HNA without also addressing this deficit. Staff is working to do this through the HNA Work Plan described earlier as well as the Our Salem project.

Attachment:

1. Map of Multifamily Housing Building Permits

Attachment 1: Map of Multifamily Housing Building Permits



CITY OF SALEM STRUCTURAL BUILDING PERMIT AND VALUATION TOTALS (ACTIVITY LEVEL) - FISCAL YEAR

2021-22

	NEW Dwelling (SFD/DPLX)				Accessory Dwelling Units (ADU)							SFD/DPLX/ADU Alterations / Additions *		NEW MultiFamily			Multifamily Alterations / Additions *		NEW Commercial/Industrial		Commercial/Industrial Alterations / Additions *		Other (fences, signs)		Demolition	Manf. Dwell.	MONTHLY TOTAL PERMITS AND VALUATION		YTD TOTAL PERMITS AND VALUATION	
	SFD Permits	DPLX Permits	SFD/ DPLX Units	SFD/DPLX Value	New ADU Detached Permits !	New ADU Detached Addition Permits !!	New ADU Detached Alteration Permits !!!	New ADU Attached Addition Permits !!!!	New ADU Attached Alteration !!!!!	Total ADU permits	Value	Permits	Value	Permits	Units	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Permits	PERMITS	VALUE	PERMITS	VALUE
July	21	1	23	$ 5,877,687	1	1				2	$ 133,238	45	$ 1,319,525	0		$ -	3	$ 40,923	8	$ 9,443,639	31	$ 40,342,259	2	$ 465,000	1	1	115	57,622,271	115	$ 57,622,271
August	23		23	6,468,529	1					1	100,000	66	1,310,268	0			5	305,000	7	7,884,200	22	5,795,402	5	959,900	1	3	133	22,823,299	248	80,445,570
September	19		19	5,672,776				4		4	576,000	60	1,479,844	0			5	13,261,825	12	39,552,749	33	3,066,019	6	628,361	2	1	142	64,237,574	390	144,683,144
October	50		50	13,641,479	1					1	97,817	60	1,314,561	0			7	93,682	6	15,890,338	40	3,943,054	4	144,881	1	0	169	35,125,813	559	179,808,957
November	56	0	56	15,111,957	2					2	176,096	45	1,064,836	0			15	861,142	9	32,291,517	24	10,640,348	4	1,211,000	1	0	156	61,356,896	715	241,165,853
December	26	1	28	8,771,997		1				1	67,591	41	1,561,739	5	126	12,557,447	18	4,805,373	5	1,253,221	19	1,523,526	9	705,200	5	1	131	31,246,094	846	272,411,948
January			0							0																	0	-	846	272,411,948
February			0							0																	0	-	846	272,411,948
March			0							0																	0	-	846	272,411,948
April			0							0																	0	-	846	272,411,948
May			0							0																	0	-	846	272,411,948
June			0							0																	0	-		
TOTAL	**195**	**2**	**199**	**$55,544,425**	**5**	**2**	**0**	**4**	**0**	**11**	**$ 1,150,743**	**317**	**$8,050,774**	**5**	**126**	**$12,557,447**	**53**	**$19,367,945**	**47**	**$106,315,664**	**169**	**$65,310,608**	**30**	**$4,114,342**	**11**	**6**	**846**	**$272,411,948**	846	272,411,948

2020-21

	NEW Dwelling (SFD/DPLX)				Accessory Dwelling Units (ADU)							SFD/DPLX/ADU Alterations / Additions *		NEW MultiFamily			Multifamily Alterations / Additions *		NEW Commercial/Industrial		Commercial/Industrial Alterations / Additions *		Other (fences, signs)		Demolition	Manf. Dwell.	MONTHLY TOTAL PERMITS AND VALUATION		YTD TOTAL PERMITS AND VALUATION	
	SFD Permits	DPLX Permits	SFD/ DPLX Units	SFD/DPLX Value	New ADU Detached Permits !	New ADU Detached Addition Permits !!	New ADU Detached Alteration Permits !!!	New ADU Attached Addition Permits !!!!	New ADU Attached Alteration !!!!!	Total ADU permits	Value	Permits	Value	Permits	Units	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Permits	PERMITS	VALUE	PERMITS	VALUE
July	49		49	$ 14,811,855	1					1	$ 49,425	30	$ 1,004,454				28	$ 122,400	12	$ 12,450,874	26	$ 8,069,285	53	$ 2,415,268	0	0	199	38,923,561	199	$ 38,923,561
August	48	1	50	14,329,708	4	1		2	1	8	666,041	46	978,312	1	142	25,000,000	5	82,900	5	6,550,703	48	6,413,506	53	4,070,199	6	2	223	58,091,368	422	97,014,930
September	54	1	56	13,253,072	1			1		2	210,831	37	625,486	1	23	2,750,000	5	934,100	2	1	41	36,740,683	27	1,414,183	3	2	175	55,928,357	597	152,943,287
October	49	0	49	10,409,210	1			14	1	16	1,754,795	41	1,051,865	0			11	399,446	9	24,047,040	38	7,700,391	34	1,525,351	4	1	203	46,888,098	800	199,831,385
November	17	1	19	5,886,446	2	3		1		6	222,644	29	1,143,187	6	72	6,880,614	5	83,300	11	35,148,808	26	39,030,727	52	3,282,112	1	3	154	91,677,838	954	291,509,223
December	28	1	30	7,164,915	3			1		4	463,085	20	648,577	21	252	26,059,729	2	67,000	1	242,077	29	2,966,150	48	964,114	6	0	160	38,575,646	1114	330,084,870
January	25	1	27	6,541,237	1					1	68,415	23	518,310	0			6	201,019	7	12,706,442	12	4,077,704	43	911,079	3	5	126	25,024,207	1240	355,109,077
February	59	1	61	17,973,251	1					1	124,662	32	1,016,551	25	246	25,770,787	0	-	13	8,960,691	20	1,654,112	12	593,204	4	0	167	56,093,258	1407	411,202,335
March	68	0	68	20,772,065	3					3	201,219	44	1,095,896	1	6	485,500	4	61,990	7	6,582,200	37	16,927,722	4	191,835	4	3	175	46,318,427	1582	457,520,762
April	42	1	44	13,593,772		1				1	81,200	46	1,383,883	3	15	1,796,267	5	178,550	7	2,823,119	41	7,550,669	17	889,674	6	5	174	28,297,134	1756	485,817,896
May	20	0	20	5,786,260	1					1	114,638	46	1,803,688	1	3	574,489	5	63,750	8	11,629,948	36	67,547,298	7	219,744	0	1	125	87,739,814	1881	573,557,710
June	34	0	34	11,057,083						0	-	45	1,305,138	0	0	-	3	169,402	3	17,049,500	55	39,190,853	5	359,750	6	1	152	69,131,726	2033	642,689,436
TOTAL	**493**	**7**	**507**	**$141,578,874**	**18**	**2**	**0**	**19**	**2**	**41**	**$ 3,956,954**	**439**	**$12,575,347**	**59**	**759**	**$89,317,385**	**79**	**$2,363,857**	**85**	**$138,191,404**	**409**	**$237,869,100**	**355**	**$16,836,513**	**43**	**23**	**2033**	**$642,689,436**	2033	642,689,436

2019-20

	NEW Dwelling (SFD/DPLX)				Accessory Dwelling Units (ADU)							SFD/DPLX/ADU Alterations / Additions *		NEW MultiFamily			Multifamily Alterations / Additions *		NEW Commercial/Industrial		Commercial/Industrial Alterations / Additions *		Other (fences, signs)		Demolition	Manf. Dwell.	MONTHLY TOTAL PERMITS AND VALUATION		YTD TOTAL PERMITS AND VALUATION	
	SFD Permits	DPLX Permits	SFD/ DPLX Units	SFD/DPLX Value	New ADU Detached Permits !	New ADU Detached Addition Permits !!	New ADU Detached Alteration Permits !!!	New ADU Attached Addition Permits !!!!	New ADU Attached Alteration !!!!!	Total ADU permits	Value	Permits	Value	Permits	Units	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Permits	PERMITS	VALUE	PERMITS	VALUE
July	31		31	$ 9,266,124	1					1	$ 95,460	42	$ 1,100,727	1	3	$ 515,607	2	$ 18,000	4	$ 2,455,000	42	$ 8,209,566	45	$ 1,489,889	2	1	171	23,150,372	171	$ 23,150,372
August	29		29	8,194,856						0		42	2,379,336	3	48	4,624,432	5	47,000	8	23,921,988	50	3,006,242	68	2,464,165	3	1	209	44,638,020	380	67,788,392
September	30	1	32	8,651,554						0		25	562,567	8	102	8,317,891	11	348,309	3	41,941	45	11,404,490	31	1,001,184	5		159	30,327,937	539	98,116,328
October	36		36	11,428,935						0	-	27	611,585	2	24	2,552,117	8	107,154	18	5,247,334	53	12,280,775	72	1,207,927	8	1	225	33,435,826	764	131,552,155
November	73		73	21,878,098						0		31	685,890	8	232	19,185,059	27	9,899,837	12	11,383,209	60	9,510,848	31	732,306	10	4	256	73,275,247	1020	204,827,401
December	16	1	18	4,986,509	1					1	118,000	21	354,957	0	0	-	4	20,450	1	55,000	41	3,472,033	71	1,795,157	5	2	163	10,802,106	1183	215,629,508
January	34	7	34	10,167,586					1	1	100,000	29	1,153,875	17	177	18,828,544	9	71,500	10	135,985,880	29	11,299,366	26	603,721	7	0	162	178,210,473	1345	393,839,981
February	41	1	43	11,973,467	1	1	1		2	5	350,093	29	703,931	0	0	-	9	302,623	6	14,135,908	62	16,300,498	24	411,914	3	7	187	44,178,433	1532	438,018,414
March	44		44	12,484,719	2				1	3	210,096	38	1,026,909	0	0	-	33	8,026,125	17	8,956,744	48	30,519,288	93	2,358,303	2	1	279	63,582,185	1811	501,600,598
April	22		22	6,632,957						0		37	1,401,830	8	96	9,947,698	7	35,700	6	7,826,673	35	22,889,867	42	1,032,264	1	2	160	49,766,989	1971	551,367,587
May	30		30	7,146,039	1				1	2	110,959	19	745,954	2	8	951,667	6	142,400	39	8,840,144	26	1,053,526	28	827,138	5	0	157	19,817,828	2128	571,185,415
June	55	0	55	14,048,337	4				1	5	435,418	53	2,603,069	1	4	575,416	2	17,225	6	13,701,969	43	92,690,885	73	1,102,827	1	8	247	125,175,147	2375	696,360,562
TOTAL	**441**	**3**	**447**	**$126,859,183**	**10**	**1**	**1**	**0**	**6**	**18**	**$ 1,420,026**	**393**	**$13,330,630**	**50**	**694**	**$65,498,431**	**123**	**$19,036,323**	**130**	**$232,551,790**	**534**	**$222,637,385**	**604**	**$15,026,794**	**52**	**27**	**2375**	**$696,360,562**	2375	696,360,562

2018-19

	NEW Dwelling (SFD/DPLX)				Accessory Dwelling Units (ADU)							SFD/DPLX/ADU Alterations / Additions *		NEW MultiFamily			Multifamily Alterations / Additions *		NEW Commercial/Industrial		Commercial/Industrial Alterations / Additions *		Other (fences, signs)		Demolition	Manf. Dwell.	MONTHLY TOTAL PERMITS AND VALUATION		YTD TOTAL PERMITS AND VALUATION	
	SFD Permits	DPLX Permits	SFD/ DPLX Units	SFD/DPLX Value	New ADU Detached Permits !	New ADU Detached Addition Permits !!	New ADU Detached Alteration Permits !!!	New ADU Attached Addition Permits !!!!	New ADU Attached Alteration !!!!!	Total ADU permits	Value	Permits	Value	Permits	Units	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Permits	PERMITS	VALUE	PERMITS	VALUE
July	46	1	48	$ 15,262,674	1	0	1	0	0	2	$ 231,424	32	$ 965,776	3	36	$ 4,715,916	18	$ 703,964	23	$ 7,336,915	61	$ 3,837,945	57	$ 3,428,716	32	5	280	36,483,330	280	$ 36,483,330
August	22	0	22	6,283,343	0	0	0	0	0	0	-	48	975,236	0	0	-	19	285,152	3	1,936,680	47	5,261,072	44	1,337,770	4	9	196	16,079,254	476	52,562,584
September	48		48	13,279,357	1	0	0	0	0	1	56,109	31	659,484	0	0	-	0	-	5	4,902,432	43	6,072,563	42	1,119,547	5	14	189	26,089,492	665	78,652,076
October	78	0	78	23,878,507	0	0	0	0	0	0	-	21	562,921	1	10	1,302,303	3	138,000	15	11,412,063	55	2,286,519	35	1,337,973	5	1	214	40,918,286	879	119,570,362
November	59	0	59	15,718,613	0	0	0	0	0	0	-	22	369,773	7	62	8,586,068	1	350,000	6	6,497,975	31	1,026,983	63	1,525,043	1	0	190	34,074,455	1069	153,644,817
December	45	0	45	12,339,342	0	0	0	0	0	0	-	31	1,136,267	5	48	5,580,587	3	27,990	16	229,500	29	10,259,527	36	384,601	4	10	179	29,957,813	1248	183,602,630
January	31	2	35	10,814,664	0	0	0	3	0	3	248,461	24	934,224	2	20	2,604,605	4	33,681	6	4,163,156	33	2,867,753	28	1,177,537	10	0	143	22,844,081	1391	206,446,711
February	25	16	57	14,897,106	1	0	1	1	1	4	398,489	17	253,343	2	16	1,892,106	17	390,910	2	6,249,092	47	4,241,250	52	553,373	2	2	186	28,875,670	1577	235,322,381
March	32		32	9,488,262	0	0	0	0	1	1	27,936	22	669,769	2	20	2,604,605	2	28,500	6	2,675,055	34	5,612,997	40	616,850	5	5	149	21,723,974	1726	257,046,355
April	40	0	40	12,677,739	0	0	0	0	0	0	-	24	755,419	2	20	2,604,605	0	-	6	10,960,799	44	19,372,291	60	759,249	5	3	184	47,130,102	1910	304,176,457
May	37	0	37	10,350,334	0	0	0	1	0	1	101,385	34	1,042,407	5	43	5,102,961	1	3,875	18	42,437,688	60	5,804,432	45	769,885	2	1	204	65,612,967	2114	369,789,424
June	46	0	46	11,956,179	0	0	0	1	1	2	30,000	32	831,656	4	42	5,209,210	11	370,236	7	10,353,242	81	67,200,012	52	1,582,365	6	2	242	97,532,899	2356	467,322,323
TOTAL	**509**	**19**	**547**	**$156,946,119**	**3**	**0**	**2**	**5**	**3**	**13**	**$ 1,093,804**	**338**	**$9,156,275**	**33**	**317**	**$40,202,965**	**79**	**$2,332,309**	**113**	**$109,154,597**	**565**	**$133,843,344**	**554**	**$14,592,910**	**81**	**52**	**2356**	**$467,322,323**	2356	467,322,323

2017-2018

	NEW Dwelling (SFD/DPLX)				Accessory Dwelling Units (ADU)							SFD/DPLX/ADU Alterations / Additions *		NEW MultiFamily			Multifamily Alterations / Additions *		NEW Commercial/Industrial		Commercial/Industrial Alterations / Additions *		Other (fences, signs)		Demolition	Manf. Dwell.	MONTHLY TOTAL PERMITS AND VALUATION		YTD TOTAL PERMITS AND VALUATION	
	SFD Permits	DPLX Permits	SFD/ DPLX Units	SFD/DPLX Value	New ADU Detached Permits !	New ADU Detached Addition Permits !!	New ADU Detached Alteration Permits !!!	New ADU Attached Addition Permits !!!!	New ADU Attached Alteration !!!!!	Total ADU permits	Value	Permits	Value	Permits	Units	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Permits	PERMITS	VALUE	PERMITS	VALUE
July	19	0	19	$ 5,404,255	0	0	0	0	0	0	$ -	33	$ 965,611	20	260	$ 26,608,280	0	$ -	10	$ 3,241,171	46	$ 3,594,156	46	$ 744,024	4	4	182	40,557,496	182	$ 40,557,496
August	18	0	18	5,151,661	0	0	0	0	0	0	-	44	1,566,291	4	48	5,605,250	9	173,219	5	23,383,605	58	15,436,702	51	482,757	3	2	194	51,799,486	376	92,356,982
September	27	6	39	8,779,721	0	0	1	0	0	1	26,000	29	925,836	3	36	3,476,193	6	72,500	14	59,901,395	47	5,997,985	75	1,909,028	1	3	212	81,088,657	588	173,445,639
October	22	0	22	6,018,413	0	0	0	0	0	0	-	40	1,197,794	12	144	13,535,180	7	216,345	9	4,320,880	34	3,206,284	60	812,506	4	3	191	29,307,402	779	202,753,040
November	26	0	26	7,100,364	1	0	0	0	0	1	98,231	30	968,559	3	24	2,078,160	9	94,388	5	969,701	42	2,883,154	41	1,245,728	7	4	168	15,438,284	947	218,191,324
December	41	1	43	10,971,461	0	0	0	0	0	0	-	18	755,980	0	0	-	4	173,600	3	26,842,104	46	3,529,125	51	892,120	3	0	168	43,332,770	1115	261,524,044
January	30	1	32	8,294,202	0	0	1	0	0	1	33,128	24	528,661	3	14	1,437,552	8	286,000	6	3,087,940	33	2,001,880	78	923,431	2	1	187	16,592,795	1302	278,116,839
February	23	2	27	7,239,603	1	0	1	0	0	2	145,799	25	1,149,135	0	0	-	20	619,027	19	25,625,091	46	46,873,847	38	1,817,353	7	3	185	83,469,856	1487	361,586,695
March	36	5	46	10,896,155	1	0		0	0	1	185,000	42	1,473,763	0	0	-	2	90,000	7	394,765	33	1,546,452	76	6,875,308	8	7	217	21,461,443	1704	383,048,138
April	24	7	38	7,758,515	1	0	1	0	0	2	62,000	28	743,161	2	24	2,514,020	2	403,975	1	1,732,728	41	13,457,927	50	753,613	6	1	164	27,425,939	1868	410,474,077
May	51	0	51	13,995,311	1	0	0	0	1	2	135,460	26	588,017	8	120	12,161,592	9	213,915	3	763,448	53	12,545,921	55	5,632,610	7	8	222	46,036,274	2090	456,510,352
June	22	6	34	7,459,939	1	0	0	0	1	1	105,286	45	1,265,453	0	0	-	6	56,441	8	4,433,059	39	5,031,661	66	2,455,698	3	8	204	20,807,537	2294	477,317,889
TOTAL	**339**	**28**	**395**	**$99,069,599**	**7**	**0**	**4**	**0**	**1**	**12**	**$ 909,233**	**384**	**$12,128,261**	**55**	**670**	**$67,416,228**	**82**	**$2,399,410**	**90**	**$154,695,887**	**518**	**$116,155,094**	**687**	**$24,544,177**	**55**	**44**	**2294**	**$477,317,889**	2294	477,317,889

Added ADU statistics - Revised September 2017 New ADU and Other

CITY OF SALEM STRUCTURAL BUILDING PERMIT AND VALUATION TOTALS (ACTIVITY LEVEL) - FISCAL YEAR

2016-2017	NEW Dwelling (SFD/DPLX)				SFD/DPLX Alterations / Additions *		NEW MultiFamily			Multifamily Alterations / Additions *		NEW Commercial/Industrial		Commercial/Industrial Alterations / Additions *		Other (fences, signs)		Demolition	Manf. Dwell.	MONTHLY TOTAL PERMITS AND VALUATION		YTD TOTAL PERMITS AND VALUATION	
	SFD Permits	DPLX Permits	SFD/ DPLX Units	SFD/DPLX Value	Permits	Value	Permits	Units	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Permits	PERMITS	VALUE	PERMITS	VALUE
July	26	1	28	$ 7,102,241	50	$ 1,655,363	7	80	$ 9,307,767	11	$ 414,161	2	$ 1,429,470	61	$ 32,486,818	49	$ 600,415	4	1	212	52,996,236	212	$ 52,996,236
August	27	0	27	8,142,824	43	1,275,542	15	171	18,456,038	3	16,112	5	1,793,787	48	7,126,677	55	650,904	0	2	198	37,461,885	410	90,458,121
September	37	1	39	11,291,564	30	658,679	0	-	-	1	10,900	1	750,000	49	2,956,232	36	1,034,905	2	0	157	16,702,281	567	107,160,402
October	22	1	24	6,428,062	25	448,039	0	-	-	0	-	3	21,286,111	45	5,533,684	61	1,276,046	6	2	165	34,971,942	732	142,132,344
November	22	1	24	7,771,692	30	674,187	5	58	5,675,870	0	-	11	2,106,657	35	2,479,619	69	2,809,698	3	1	177	21,517,723	909	163,650,067
December	24	2	28	7,218,954	19	356,726	2	24	2,343,781	3	220,581	4	863,419	48	3,219,117	43	431,021	2	3	150	14,653,599	1059	178,303,666
January	20	1	22	6,196,721	12	319,662	0	-	-	3	30,644	20	14,435,788	44	5,855,761	46	665,047	3	2	151	27,503,623	1210	205,807,289
February	19	1	21	5,479,952	18	511,559	2	24	2,240,868	12	4,888,955	7	39,501,194	29	3,867,592	32	259,679	4	2	126	56,749,799	1336	262,557,088
March	34	1	36	10,585,787	30	421,413	1	15	1,616,520	10	209,958	9	3,017,636	45	17,595,272	82	1,010,612	4	7	223	34,457,199	1559	297,014,287
April	34	0	34	10,241,655	25	672,780	5	49	4,699,477	12	311,412	5	1,681,250	36	4,289,276	57	1,286,156	5	5	184	23,182,006	1743	320,196,294
May	22	1	24	6,992,660	38	1,384,268	1	12	920,311	6	97,000	27	826,145	55	4,604,609	41	733,399	0	11	202	15,558,392	1945	335,754,686
June	35	0	35	10,104,324	39	950,168	5	21	2,215,267	1	13,950	6	11,060,472	44	5,068,380	45	3,382,168	7	8	190	32,794,729	2135	368,549,416
TOTAL	**322**	**10**	**342**	**$97,556,438**	**359**	**$9,328,385**	**43**	**454**	**$47,475,900**	**62**	**$6,213,673**	**100**	**$98,751,930**	**539**	**$95,083,038**	**616**	**$14,140,051**	**40**	**44**	**2135**	**$368,549,416**	2135	368,549,416

2015-2016	NEW Dwelling (SFD/DPLX)				SFD/DPLX Alterations / Additions *		NEW MultiFamily			Multifamily Alterations / Additions *		NEW Commercial/Industrial		Commercial/Industrial Alterations / Additions *		Other (fences, signs)		Demolition	Manf. Dwell.	MONTHLY TOTAL PERMITS AND VALUATION		YTD TOTAL PERMITS AND VALUATION	
	SFD Permits	DPLX Permits	SFD/ DPLX Units	SFD/DPLX Value	Permits	Value	Permits	Units	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Permits	PERMITS	VALUE	PERMITS	VALUE
July	24	0	24	$ 6,740,584	31	$ 502,877	0		$ -	16	$ 77,000	5	$ 3,412,205	74	$ 4,849,473	54	$ 831,556	10	2	216	16,413,695	216	$ 16,413,695
August	19	0	19	5,587,529	29	618,797	0		-	4	117,000	0	-	34	3,946,635	48	362,308	4	0	138	10,632,268	354	27,045,963
September	28	0	28	7,186,740	27	635,193	5	60	5,943,235	20	212,967	0	-	52	4,370,066	47	872,228	12	3	194	19,220,430	548	46,266,393
October	21	1	23	7,032,336	26	554,265	0		-	3	41,100	1	588,207	83	7,867,704	42	189,250	1	2	180	16,272,860	728	62,539,253
November	14	0	14	4,288,554	22	367,383	1	N/A	233,800	2	87,831	4	3,400,001	54	10,120,100	32	899,384	0	1	130	19,397,053	858	81,936,306
December	11	0	11	4,009,912	20	377,579	0	0	-	0	-	0	-	38	6,247,113	43	8,974,414	3	2	117	19,609,018	975	101,545,324
January	18	1	20	5,044,658	18	375,924	6	116	14,074,986	3	10,000	4	2,919,169	54	10,519,740	25	1,639,616	0	2	131	34,584,094	1,106	136,129,418
February	26	0	26	6,473,917	20	988,678	1	9	957,124	9	64,791	2	12,000	51	5,162,412	26	403,657	7	4	146	14,062,579	1252	150,191,997
March	36	3	42	10,644,819	25	936,373	1	8	1,111,046	4	5,529,991	5	2,561,266	63	8,982,315	41	585,762	4	2	184	30,351,572	1436	180,543,569
April	17	0	17	4,716,176	30	788,457	0	0	-	8	31,812	4	2,983,177	35	5,418,701	59	1,342,281	0	0	153	15,280,603	1589	195,824,172
May	13	1	15	3,950,500	35	1,083,859	0	0	-	2	38,651	2	701,731	54	11,747,984	36	1,712,026	7	3	153	19,234,751	1742	215,058,923
June	34	1	36	9,576,378	36	1,236,376	1	0	1	8	266,979	6	2,685,656	72	9,158,367	66	588,727	11	2	237	23,512,485	1979	238,571,407
TOTAL	**261**	**7**	**275**	**$75,252,103**	**319**	**$8,465,762**	**15**	**193**	**$22,320,192**	**79**	**$6,478,122**	**33**	**$19,263,412**	**664**	**$88,390,610**	**519**	**$18,401,207**	**59**	**23**	**1979**	**$238,571,407**	1979	238,571,407

2014-2015	NEW Dwelling (SFD/DPLX)				SFD/DPLX Alterations / Additions *		NEW MultiFamily			Multifamily Alterations / Additions *		NEW Commercial/Industrial		Commercial/Industrial Alterations / Additions *		Other (fences, signs)		Demolition	Manf. Dwell.	MONTHLY TOTAL PERMITS AND VALUATION		YTD TOTAL PERMITS AND VALUATION	
	SFD Permits	DPLX Permits	SFD/ DPLX Units	SFD/DPLX Value	Permits	Value	Permits	Units	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Permits	PERMITS	VALUE	PERMITS	VALUE
July	28	0	28	$ 7,222,745	26	$ 551,958	0		$ -	3	$ 540,000	0	$ -	46	$ 5,541,697	30	$ 440,848	7	1	141	14,297,249	141	$ 14,297,249
August	12	0	12	2,992,856	37	709,547	0		-	9	378,495	2	613,760	53	2,295,133	33	363,534	5		151	7,353,325	292	21,650,574
September	18	2	22	6,196,470	52	1,034,637	0		-	7	215,000	4	14,790,529	57	4,815,304	19	258,955	10	3	172	27,310,896	464	48,961,470
October	21	0	21	5,827,169	25	567,790	0		-	12	43,300	0	-	70	2,798,639	29	257,777	6	6	169	9,494,675	633	58,456,145
November	14	0	14	4,212,497	12	308,725	0		-	8	201,500	0	-	24	1,346,402	27	358,327	2	1	88	6,427,450	721	64,883,595
December	22	0	22	5,963,235	13	195,116	0			4	47,589	5	11,065,800	39	2,106,800	31	815,631	4	2	120	20,194,170	841	85,077,765
January	16	0	16	4,254,418	18	364,401	4	42	4,724,811	2	10,500	6	4,825,535	48	2,541,756	35	660,951	0	3	132	17,382,372	973	102,460,137
February	31	0	31	8,922,082	18	563,217	0		-	5	375,500	1	483,840	49	2,891,670	21	432,880	2	5	132	13,669,189	1105	116,129,325
March	34	0	34	9,342,177	13	347,882	4	36	3,851,802	13	422,701	0	-	39	5,440,259	30	769,293	1	1	135	20,174,115	1240	136,303,440
April	27	0	27	6,903,621	37	804,475	0	-	-	8	92,500	3	4,702,896	56	6,641,088	52	908,832	7	1	191	20,053,412	1431	156,356,852
May	15	1	17	4,587,875	27	773,913	2	27	2,183,435	3	927,000	1	350,000	53	5,255,239	51	372,269	3	1	157	14,449,731	1588	170,806,583
June	32	0	32	8,541,383	37	1,259,816	0		-	1	5,000	4	13,818,560	89	8,830,414	56	1,217,551	6	1	226	33,672,724	1814	204,479,307
TOTAL	**270**	**3**	**276**	**$74,966,527**	**315**	**$7,481,477**	**10**	**105**	**$10,760,049**	**75**	**$3,259,085**	**26**	**$50,650,921**	**623**	**$50,504,401**	**414**	**$6,856,848**	**53**	**25**	**1814**	**$204,479,307**	1814	204,479,307

2013-2014	NEW Dwelling (SFD/DPLX)				SFD/DPLX Alterations / Additions *		NEW MultiFamily			Multifamily Alterations / Additions *		NEW Commercial/Industrial		Commercial/Industrial Alterations / Additions *		Other (fences, foundations,carport)		Demolition	Manf. Dwell.	MONTHLY TOTAL PERMITS AND VALUATION		YTD TOTAL PERMITS AND VALUATION	
	SFD Permits	DPLX Permits	SFD/ DPLX Units	SFD/DPLX Value	Permits	Value	Permits	Units	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Permits	PERMITS	VALUE	PERMITS	VALUE
July	23		23	$ 5,271,734	21	$ 366,369	1	24	$ 1,978,908	29	$ 533,380	0	$ -	53	$ 7,839,091	32	$ 355,013	2	1	162	16,344,493	162	$ 16,344,493
August	46		46	10,694,775	22	427,220	0	-	-	10	53,300	4	5,625,220	49	33,203,457	41	694,970	4	0	176	50,698,942	338	67,043,436
September	18	0	18	4,489,744	26	382,507	1	24	1,942,468	6	14,318	2	2,338,800	45	10,069,563	84	418,049	2	1	185	19,655,450	523	86,698,886
October	27		27	5,769,665	19	460,796	0	-	-	17	179,050	0	-	62	9,236,852	55	1,490,576	7	1	188	17,136,939	711	103,835,824
November	13	1	15	3,886,407	17	237,570	0	-	-	1	10,000	1	1,800	36	4,601,779	23	217,449	5	0	97	8,955,005	808	112,790,829
December	17		17	4,064,695	17	294,679	15	178	18,031,213	1	60,000	2	1,663,000	59	2,517,902	31	379,496	8	0	150	27,010,984	958	139,801,814
January	24	1	26	6,473,667	13	428,024	0	-	-	5	265,050	4	8,335,346	45	1,720,935	44	728,052	5	2	143	17,951,073	1101	157,752,887
February	32	1	34	8,412,601	19	418,806	0	-	-	2	20,000	3	2,363,440	33	4,010,934	33	429,045	0	0	123	15,654,826	1224	173,407,713
March	27	0	27	7,162,596	28	1,068,793	0	-	-	10	145,405	4	14,121,904	50	8,730,844	16	150,739	3	5	143	31,380,281	1367	204,787,994
April	12	0	12	3,284,860	24	425,692	3	13	1,088,771	22	329,813	2	140,001	76	14,673,341	35	249,352	3	2	179	20,191,829	1546	224,979,823
May	33	0	33	8,472,027	26	587,871	0	-	-	20	7,426,921	5	5,306,000	60	8,405,328	52	345,104	1	0	197	30,543,251	1743	255,523,074
June	27	0	27	6,811,663	31	620,833	0	-	-	3	100,500	5	8,950,039	47	4,655,920	32	465,053	2	2	149	21,604,008	1892	277,127,082
TOTAL	**299**	**3**	**305**	**$74,794,433**	**263**	**$5,719,160**	**20**	**239**	**$23,041,359**	**126**	**$9,137,737**	**32**	**$48,845,549**	**615**	**$109,665,945**	**478**	**$5,922,898**	**42**	**14**	**1892**	**$277,127,082**	1892	277,127,082

* Starting February 2014: Permits that were previously in the category "Other" for Single Family Additions, Commercial Additions and Mulifamily additions are now in their respective "Alterations" category.

2012-2013	NEW Dwelling (SFD/DPLX)				SFD/DPLX Alterations		NEW MultiFamily			Multifamily Alterations		NEW Commercial/Industrial		Commercial/Industrial Alterations		Other (fences, foundations,carport)		Demolition	Manf. Dwell.	MONTHLY TOTAL PERMITS AND VALUATION		YTD TOTAL PERMITS AND VALUATION	
	SFD Permits	DPLX Permits	SFD/ DPLX Units	SFD/DPLX Value	Permits	Value	Permits	Units	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Value	Permits	Permits	PERMITS	VALUE	PERMITS	VALUE
July	11	0	11	$ 2,336,141	28	$ 636,641	0	0	$ -	32	$ 319,780	2	$ 1,172,450	42	$ 3,446,547	37	$ 417,745	3	0	155	8,329,304	155	$ 8,329,304
August	10	0	10	2,665,376	17	940,363	9	90	8,445,813	5	121,000	2	18,728	72	9,949,877	41	785,494	2	2	160	22,926,651	315	31,255,955
September	25	0	25	5,686,223	26	701,078	1	12	992,163	19	3,385,300	2	1,506,000	41	2,711,677	29	444,684	3	0	146	15,427,126	461	46,683,081
October	24	0	24	5,075,855	26	655,392	0	0	-	3	34,125	7	1,766,218	37	5,687,310	33	726,492	5	1	136	13,945,393	597	60,628,473
November	11	0	11	2,446,007	20	359,793	0	0	-	3	7,000	0	-	47	13,011,413	38	197,128	2	1	122	16,021,341	719	76,649,814
December	11	0	11	2,157,252	23	276,935	6	66	6,013,090	3	1,338,843	1	1,900,000	36	1,618,548	16	176,038	0	0	96	13,480,706	815	90,130,520
January	8	0	8	1,665,143	19	255,350	0	0	-	11	182,617	3	1,926,000	35	1,433,101	38	818,954	2	1	117	6,281,164	932	96,411,684
February	22	0	22	5,060,835	21	379,694	3	54	4,960,431	6	51,550	0	-	60	2,396,670	25	380,629	3	1	141	13,229,810	1073	109,641,495
March	32	0	32	6,903,220	27	735,261	0	0	-	10	122,161	3	5,517,930	28	5,676,436	29	329,316	3	3	135	19,284,324	1208	128,925,819
April	26	0	26	5,650,474	22	295,358	1	12	1,128,852	53	290,394	1	41,412	44	5,210,152	32	100,493	2	0	181	12,717,135	1389	141,642,954
May	25	0	25	5,201,736	38	850,082	0	0	-	2	15,300	0	-	74	12,582,562	36	657,008	6	0	181	19,306,689	1570	160,949,643
June	26	0	26	5,509,208	21	501,554	0	0		19	447,611	2	2,612,605	52	12,421,111	33	2,121,546	2	1	156	23,613,635	1726	184,563,278
TOTAL	**231**	**0**	**231**	**$50,357,471**	**288**	**$6,587,502**	**20**	**234**	**$21,540,349**	**166**	**$6,315,681**	**23**	**$16,461,342**	**568**	**$76,145,405**	**387**	**$7,155,528**	**33**	**10**	**1726**	**$184,563,278**	1726	184,563,278

TRANSIGHT CONSULTING, LLC
Transportation Engineering and Planning Services

Date:	January 31, 2022
To:	Arielle Ferber, PE
From:	Joe Bessman, PE
Project Reference No.:	1603
Project Name:	Titan Hill Rezone

Thank you for the continued opportunity to coordinate with ODOT through the rezone process for the Titan Hill site located west of Doaks Ferry Road. This memorandum provides responses to the ODOT letter dated January 18, 2022 (received on January 26, 2022, following the Planning Commission hearing). The ODOT letter provides three primary comments related to technical aspects of the analysis and concludes by stating these issues would not change the overall findings. However, I have prepared the enclosed responses that will be provided to ODOT seeking concurrence and agreement. Based on informal discussions with ODOT staff, I believe their concurrence, while not necessary, will be provided to the City.

Comment 1: This study utilized the outdated Highway Capacity Manual (HCM) 2000 and did not utilize methodology from the HCM 6th Edition for signalized intersections. Our review showed that use of HCM6, as opposed to HCM 2000, did not affect the conclusions of this analysis.

I respectfully disagree with this statement and the characterization of the analysis submitted. The analysis was prepared using the HCM 6th Edition (the most current) analysis methodology, and all queuing and delays are provided from these reports. However, the HCM 6th Edition methodology no longer provides a volume-to-capacity ratio for the intersection as a whole, only for individual lane groups.

ODOT's adopted mobility standards within the Oregon Highway Plan are premised on the overall intersection v/c ratio, and so to get around this methodology limitation, ODOT's Transportation Planning and Analysis Unit (TPAU) devised a methodology to "approximate" the overall v/c ratio using a combination of the HCM 6th Edition outputs, the HCM2000 outputs, and the 1985 version of the Highway Capacity Manual methods for a Critical Movement Analysis. Simply stated, the 1985 Critical Movement Analysis combines conflicting movements and sums these combinations against the total capacity of the intersection.

The problem with this approach is that it does not respond well to more complicated signal timing and phasing strategies or high volumes of right-turns on red from dedicated turn lanes, such as those present along the Wallace Road corridor, and experiences other challenges with nuances of the software outputs. While the HCM 2000 is an older version of the Highway Capacity Manual, the results of the overall v/c metric are more realistic than this blended critical movement approach at complex intersections, and the calculations in the HCM6th Edition and HCM2000 remain very similar in how they account for pedestrians,

cyclists, trucks, cars, and various geometric factors.[1] For the comparative assessment between rezone scenarios this provides reasonable results appropriate for long-range planning analyses (and is what was presented in the adopted Transportation System Plan).

To address the suggestion that our analysis software or methods may have altered the results (a suggestion I reject and ODOT has already rejected), I have worked with ODOT staff to complete this analysis for the Wallace Road intersections as best as is possible per the ODOT Analysis Procedures Manual and limitations of this methodology (all other metrics such as queuing and delays were already reported from the HCM 6th Edition and need not be updated). These revised results are provided in Table 1 to avoid any speculation this could change the outcome of the analysis.

Table 1. Summary of ODOT v/c Ratios (CMA Technique)

Intersection	Year 2036 Existing Zoning	Year 2036 Proposed Zoning	Year 2036 Proposed Zoning with Density Cap	Meets OHP 1F.5?
Weekday AM Peak Hour				
Wallace Road/ Orchard Heights	v/c = 1.071	v/c = 1.114 (+0.043)	v/c = 1.092 (+0.021)	Yes with Density Cap
Wallace Road/ Glen Creek Road	v/c = 1.122	v/c = 1.156 (+0.034)	v/c = 1.136 (+0.014)	Yes with Density Cap
Weekday PM Peak Hour (ODOT Design Hour)				
Wallace Road/ Orchard Heights	v/c = 1.212	v/c = 1.241 (+0.029)	v/c = 1.221 (+0.009)	Yes
Wallace Road/ Glen Creek Road	v/c = 1.139	v/c = 1.156 (+0.017)	v/c = 1.152 (+0.013)	Yes

Please note that the applicable standard to assess a significant impact is cited within Action 1F.5 of the Oregon Highway Plan; this states the following:

> *In applying OHP mobility targets to analyze mitigation, ODOT recognizes that there are many variables and levels of uncertainty in calculating volume-to-capacity ratios, particularly over a specified planning horizon. After negotiating reasonable levels of mitigation for actions required under OAR 660-012-0060, ODOT considers calculated values for v/c ratios that are within 0.03 of the adopted target in the OHP to be considered in compliance with the target. The adopted mobility target still applies for determining significant affect under OAR 660-012-0060.*

Accordingly, during the ODOT Design Hour (which is built around the weekday p.m. peak hour consistent with long-range planning efforts) the change in the v/c ratio is less than 0.03 at both intersections. With

[1] Refer to ODOT TPAU's July 21, 2021 presentation describing the basis and limitations of this methodology as included within the attachments.

the density cap in place this difference is further reduced. Accordingly, the rezone complies with the TPR section on Plan and Land Use Regulation Amendments.

Comment 2: This study does not contain a simulation-based queuing analysis. Such analysis would have been scoped if this study had been required under ODOT's authority.

As part of general practice for traffic impact analysis reports (TIAs), ODOT requires microsimulation for closely spaced and coordinated signalized corridors. This is neither practical nor appropriate on Wallace Road or for a TPR analysis:

- Microsimulation of a congested system would need to study the "pinch point" – in this case that would be the limited bridge capacity at the merge which is well outside of the study area.
- Microsimulation is a detailed analysis tool applicable to corridor projects and signal timing plan development and is not relevant to a TPR analysis. Our requirement is to show consistency with the adopted Transportation System Plan, which was not prepared using microscopic assessment tools, nor would it have been appropriate given the sweeping assumptions inherent within a long-term analysis that outweigh the higher levels of precision.
- Microsimulation does not provide ODOT with an overall v/c ratio that would respond to their standards. Its purpose is to understand queue lengths and queue blockage impacts. This is helpful information, but it does not respond to ODOT standards. The limitation is exacerbated without a broader assessment that extends to the bridge and a more detailed assessment that accounts for private driveways between intersections.
- Microsimulation of a signalized corridor relies on specific signal timing parameters for its outputs. The future timing plans, vehicle technologies, and even the signal detection and controller technologies that will be in place in 2036 remain highly speculative.

Within a Transportation Planning Rule analysis, a queuing analysis is useful supporting information that shows what the public, staff, and the consultant team already know – there is congestion on Wallace Road associated with the available bridge capacity. However, our analysis provides a comparative assessment of whether the impact of the rezone is significant under the Transportation Planning Rule – nothing else. This assessment is measured by the adopted v/c ratios and guidance within Action 1F.5 of the Oregon Highway Plan.

Comment 3: Our review identified multiple trip generation errors. The combination of these errors has underestimated reasonable worst-case trip generation under the current zone and proposed zone. Multiple land uses utilized the weighted average trip rate instead of the fitted equation.

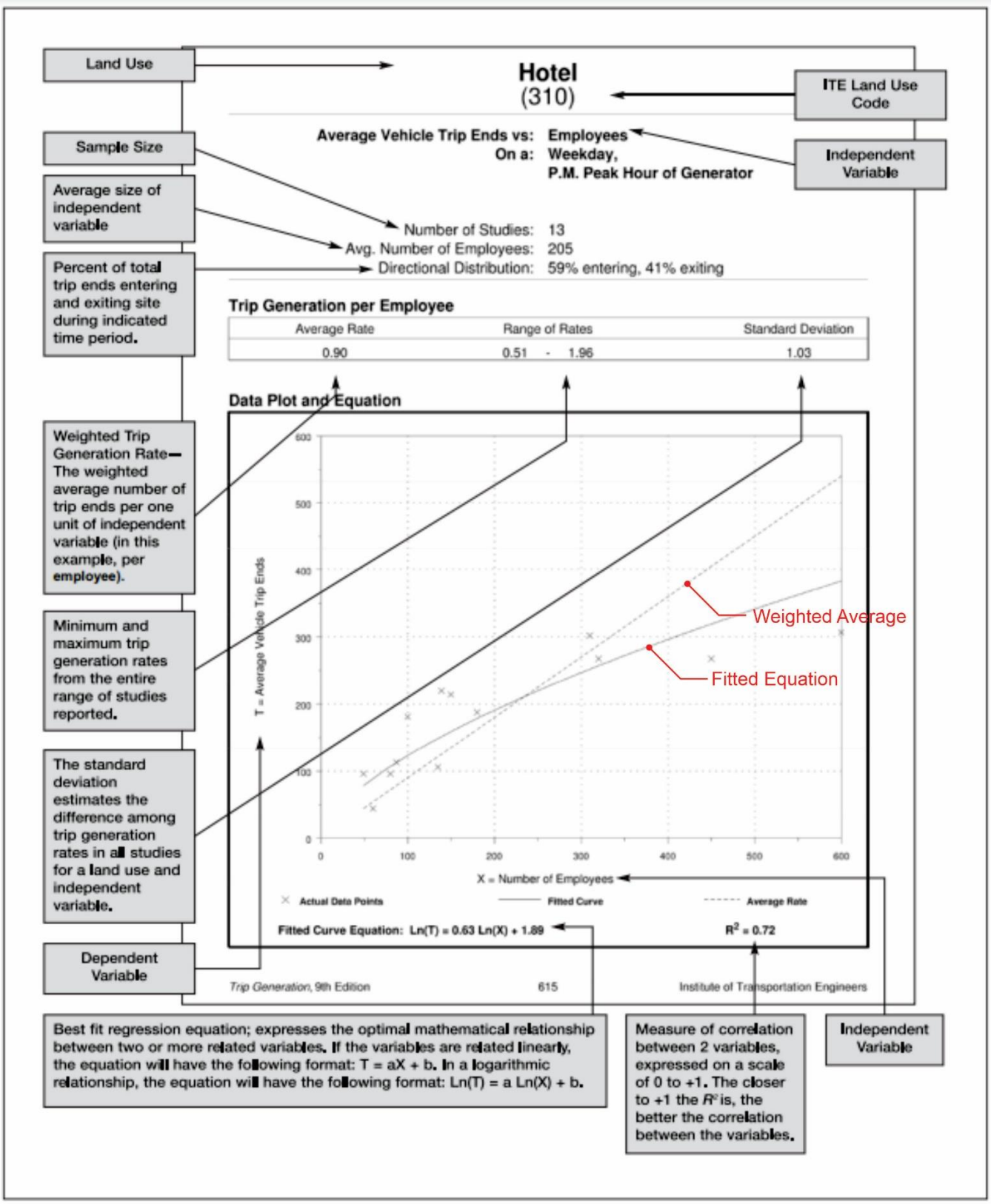
The City of Salem requires application of the weighted average trip rate for all of its trip generation calculations, and the report consistently applies this approach. This "straight-line" approach has the benefits of avoiding adjusting the results between mixing of the two equations, providing simple tracking mechanisms to monitor development, and consistency across all submitted studies. I recognize this analysis requires greater context, and so I have explained the ITE-recommended practice to highlight how this City policy is appropriate and conservative within this application.

The premise of the comment is that certain uses (e.g., a shopping center) exhibit an increasingly lower trip rate as they increase in size. If a retail center is 10,000 square-feet an expansion to 100,000 square-feet will not directly increase the trip rate ten-fold. The ITE manual has the same premise for residential uses, showing that surveys of larger suburban neighborhoods exhibit a lower trip rate per home than smaller suburban areas neighborhoods. From a practical perspective, this result does not look at other

factors (house size, number of persons, income, age, etc.), and this finding reflects other demographic characteristics and the very limited datapoints at the upper end of the range. The suggestion that building more houses of an identical type within an area will generate fewer trips per house is unreasonable. Salem is not the only jurisdiction to require the use of the average trip rate, which usually provides a more conservative analysis, and avoids anomalies when the size of the use is near the x-intercept on the graph.

To further help understand the context and implications of this technical comment, an example sheet with labels from the ITE *Trip Generation Handbook* is presented in Figure 1. This shows several data points, each of which represent a cordon-area survey that counts every inbound and outbound vehicle that passes through the cordon line during the specified period. These are plotted as a function of the size of development ("units" for most residential applications) on the x-axis and the number of trips on the y-axis.

These surveys are aggregated to develop a weighted-average trip rate, which essentially provides an averaged trip rate across the entire range of development sizes. This average rate is plotted as a straight dashed line intersecting at the graph origin. In addition, a fitted equation is developed using a regression analysis to better match this line to the data points; this line does not necessarily extend from the chart origin. Where there is a good fit to the data (meaning that the survey points are closer to this curved line), a higher R^2 (coefficient of determination) value results. Figure 2 provides recommended guidance on when it is recommended to select the weighted average or fitted curve. There is substantial guidance within the manual related to use of engineering judgement in making these determinations, and this is not intended to be universally applied as a "flow-chart" process.



Source: *Trip Generation Manual*, 9th Edition, Institute of Transportation Engineers, Washington, DC, 2012.

Figure 1. Sample Data Page in Trip Generation Manual. *Source: ITE Trip Generation Handbook, 3rd Edition*

Use Fitted Curve Equation when:

- A fitted curve equation is provided and the data plot has at least 20 data points

OR

- A fitted curve equation is provided, the curve has an R^2 of at least 0.75, the fitted curve falls within data cluster, and the weighted standard deviation is more than 55 percent of the weighted average rate.

Use Weighted Average Rate when:

- The data plot has at least three data points (and preferably, six or more);
- The R^2 value for the fitted curve is less than 0.75 or no fitted curve equation is provided;
- The weighted standard deviation for the average rate is less than 55 percent of the weighted average rate; and
- The weighted average rate is within data cluster in plot.

Collect Local Data when:

- Study site is not compatible with ITE Land Use Code definition;
- Data plot has only one or two data points (and preferably, when five or fewer);
- The weighted standard deviation for the average rate is greater than 55 percent of the weighted average rate;
- Independent variable value is not within range of data; or
- Neither weighted average rate line nor fitted curve is within data cluster at size of study site.

Figure 2. ITE Trip Generation Handbook Guidance on Selection of the Weighted Average vs. Fitted Curve Equation. *Source: ITE Trip Generation Handbook, 3rd Edition, pp28*

Within the submitted Transportation Planning Rule analysis the critical land use classifications include use of ITE 210: *Single-Family Detached Housing* and ITE 221: *Multifamily Housing (Mid-Rise)*. Based on review of the ITE data I found:

- For the single-family housing classification, the ITE provides a robust dataset, the number of units considered falls within the range of the data, and the R^2 is higher than 0.75. The ITE recommends use of the fitted curve equation.
- For the multifamily housing the ITE again provides a robust dataset, but the number of units contemplated (640 uncapped or 500 capped) fall outside the data cluster in the plot. For this use the weighted average rate is recommended.

The net result is that the analysis would be premised on 33 fewer weekday daily trips, 1 less trip during the morning, and 3 fewer trips during the evening peak hour. With a reduction across all time periods this would show better results than those reported within the submitted TPR analysis and would not affect the findings of “no significant impact” with the proposed trip cap.

Comment 4: Similar to public comments responded to within the prior materials, ODOT requested receipt of the full set of traffic counts (2020 and 2021).

These were inadvertently omitted from the original report, I have enclosed the full sets of counts as an attachment.

IMPACT OF HOUSE BILL 2001

Subsequent to the preparation of this analysis, the City of Salem incorporated House Bill 2001 into its Development Code. The impact of this legislation is to allow higher density multifamily housing products within single-family zoning to address *needed housing*. As this rezone is premised on the comparison of a single-family zoning and the change in moving to allow multifamily housing, with this change to what is now allowed in the existing zoning the relative impact will be significantly less.

The Code adopted by the City of Salem impacts the RS, RA (which is the designation of the subject property), RD, and RM-I zones. This will allow duplex units on all lots that are larger than 4,000 square-feet. Triplex units will be allowed on lots that are at least 5,000 square-feet, and quadplex units will be allowed on lots that are 7,000 square-feet, and cottage clusters (the number of units appears to be undefined) are allowed on lots larger than 7,000 square-feet.

Instead of showing the equivalent of 183 single-family lots in our base-case rezone analysis, each that are approximately 5,000 square-feet, this would now allow this same number of triplex units. This 183-triplex scenario, or even a combination of triplex and duplex units could reach as high as 549 total residential units (183 lots * up to 3 units per lot = up to 549 units), which is a higher density than the proposed 500-unit density cap being proposed.

NEXT STEPS

I appreciate the coordination and support of ODOT staff throughout the review of this application and trust these additional materials address any remaining concerns about the analysis. I hope these materials can be expeditiously reviewed by ODOT, and a written response can be provided into the record, supporting or refuting these responses so that the public can appropriately trust that the information provided to the Planning Commission is complete and accurate. If you have questions you can reach me at (503) 997-4473 or via email at joe@transightconsulting.com.

Attachments:

- July 21, 2021 ODOT TPAU APM guidance (Excerpt)
- Supplemental Level of Service Worksheets (Capped Scenario)
- Critical Movement Analysis Worksheets
- Year 2020 Traffic Count Dataset
- Year 2021 Traffic Count Dataset
- Middle Housing: HB2001 Frequently Asked Questions

Image – Google Maps Streetview


Critical Volume to Capacity Ratios

Calculating intersection v/c's

- Numerous recent issues relating to critical intersection v/c's
- Synchro HCM2000 report and lead-lag left turn phasing
- Limitations with HCM6 reports for permitted-protected phasing
- HCM is the best reference (1985 forward)
- Flow ratio calculation depends on summing flow ratios for each phase

- Issues are mainly related to picking critical movements ; shows over-reliance on report critical movements ; shows need to have extra guidance on fundamentals
- Synchro HCM2000 report may show extra critical movements that are not used in the calculations especially if lead-lag phasing is used ; need to make sure have good grasp of fundamentals of picking critical movements
- Still can be useful for showing the range that calculation should be
- Limitations in HCM6 – doesn't show permitted and protected sat flows (will have to use HCM2000 based sat flows here)
- Can use any edition of HCM – 1985 , 2000, 2010, 6th etc
- Flow ratios – v/s (volume/sat flow)

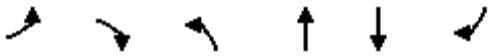
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	20	536	313	1054	1421
v/c Ratio	0.29	1.00	0.51	0.36	0.82
Control Delay	69.8	77.9	28.7	3.4	31.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	69.8	77.9	28.7	3.4	31.6
Queue Length 50th (ft)	17	~507	223	53	474
Queue Length 95th (ft)	44	#545	m335	244	#780
Internal Link Dist (ft)	1063			1080	560
Turn Bay Length (ft)	125		115		
Base Capacity (vph)	317	536	608	2912	1741
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.06	1.00	0.51	0.36	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

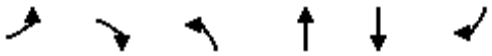
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	18	493	288	970	1295	12
Future Volume (vph)	18	493	288	970	1295	12
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1471	1456	1614	3167	3244	
Flt Permitted	0.95	1.00	0.08	1.00	1.00	
Satd. Flow (perm)	1471	1456	131	3167	3244	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	536	313	1054	1408	13
RTOR Reduction (vph)	0	10	0	0	0	0
Lane Group Flow (vph)	20	526	313	1054	1421	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	13%	2%	3%	5%	2%	40%
Turn Type	Prot	pm+ov	pm+pt	NA	NA	
Protected Phases	8	1	1	6	2	
Permitted Phases		8	6			
Actuated Green, G (s)	4.2	47.1	115.3	115.3	67.9	
Effective Green, g (s)	4.2	47.1	115.3	115.3	67.9	
Actuated g/C Ratio	0.03	0.36	0.89	0.89	0.52	
Clearance Time (s)	4.5	4.5	4.5	6.0	6.0	
Vehicle Extension (s)	1.5	1.0	1.0	0.5	0.5	
Lane Grp Cap (vph)	47	577	605	2808	1694	
v/s Ratio Prot	0.01	c0.30	0.17	0.33	c0.44	
v/s Ratio Perm		0.06	0.29			
v/c Ratio	0.43	0.91	0.52	0.38	0.84	
Uniform Delay, d1	61.7	39.5	25.3	1.2	26.4	
Progression Factor	1.00	1.00	1.34	2.52	1.00	
Incremental Delay, d2	2.2	18.5	0.2	0.3	5.2	
Delay (s)	64.0	58.0	34.0	3.4	31.5	
Level of Service	E	E	C	A	C	
Approach Delay (s)	58.2			10.4	31.5	
Approach LOS	E			B	C	

Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	493	288	970	1295	12
Future Volume (veh/h)	18	493	288	970	1295	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	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	1573	1723	1709	1682	1723	1204
Adj Flow Rate, veh/h	20	536	313	1054	1408	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	13	2	3	5	2	40
Cap, veh/h	324	496	329	2247	1810	17
Arrive On Green	0.22	0.22	0.25	1.00	0.54	0.54
Sat Flow, veh/h	1498	1460	1628	3279	3409	31
Grp Volume(v), veh/h	20	536	313	1054	693	728
Grp Sat Flow(s),veh/h/ln	1498	1460	1628	1598	1637	1717
Q Serve(g_s), s	1.4	28.1	14.0	0.0	43.5	43.6
Cycle Q Clear(g_c), s	1.4	28.1	14.0	0.0	43.5	43.6
Prop In Lane	1.00	1.00	1.00			0.02
Lane Grp Cap(c), veh/h	324	496	329	2247	891	935
V/C Ratio(X)	0.06	1.08	0.95	0.47	0.78	0.78
Avail Cap(c_a), veh/h	324	496	487	2247	891	935
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.57	0.57	1.00	1.00
Uniform Delay (d), s/veh	40.5	42.9	25.3	0.0	23.4	23.4
Incr Delay (d2), s/veh	0.0	63.5	12.9	0.4	6.6	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	24.5	9.5	0.1	18.0	18.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.5	106.4	38.3	0.4	30.0	29.8
LnGrp LOS	D	F	D	A	C	C
Approach Vol, veh/h	556			1367	1421	
Approach Delay, s/veh	104.1			9.1	29.9	
Approach LOS	F			A	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	20.6	76.8				97.4	32.6
Change Period (Y+Rc), s	4.5	6.0				6.0	4.5
Max Green Setting (Gmax), s	28.7	58.2				91.4	28.1
Max Q Clear Time (g_c+I1), s	16.0	45.6				2.0	30.1
Green Ext Time (p_c), s	0.1	2.2				2.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	33.7
HCM 6th LOS	C

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	23	430	508	1858	1626
v/c Ratio	0.32	0.70	0.76	0.62	1.02
Control Delay	70.8	36.7	36.5	7.4	61.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	70.8	36.7	36.5	7.4	61.8
Queue Length 50th (ft)	19	287	401	315	~771
Queue Length 95th (ft)	49	370	m363	m286	#1004
Internal Link Dist (ft)	1063			1080	560
Turn Bay Length (ft)	125		115		
Base Capacity (vph)	317	612	667	3021	1588
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.07	0.70	0.76	0.62	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
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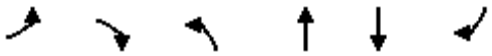
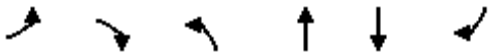
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	396	467	1709	1476	20
Future Volume (vph)	21	396	467	1709	1476	20
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1471	1430	1646	3292	3220	
Flt Permitted	0.95	1.00	0.06	1.00	1.00	
Satd. Flow (perm)	1471	1430	104	3292	3220	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	430	508	1858	1604	22
RTOR Reduction (vph)	0	4	0	0	1	0
Lane Group Flow (vph)	23	426	508	1858	1625	0
Confl. Peds. (#/hr)	3					
Heavy Vehicles (%)	13%	4%	1%	1%	3%	7%
Turn Type	Prot	pm+ov	pm+pt	NA	NA	
Protected Phases	8	1	1	6	2	
Permitted Phases		8	6			
Actuated Green, G (s)	4.4	52.7	115.1	115.1	62.3	
Effective Green, g (s)	4.4	52.7	115.1	115.1	62.3	
Actuated g/C Ratio	0.03	0.41	0.89	0.89	0.48	
Clearance Time (s)	4.5	4.5	4.5	6.0	6.0	
Vehicle Extension (s)	1.5	1.0	1.0	0.5	0.5	
Lane Grp Cap (vph)	49	629	664	2914	1543	
v/s Ratio Prot	0.02	c0.25	c0.28	0.56	c0.50	
v/s Ratio Perm		0.05	0.39			
v/c Ratio	0.47	0.68	0.77	0.64	1.05	
Uniform Delay, d1	61.7	31.7	31.7	2.0	33.9	
Progression Factor	1.00	1.00	1.21	3.55	1.00	
Incremental Delay, d2	2.6	2.3	0.4	0.1	38.4	
Delay (s)	64.2	34.0	38.6	7.1	72.3	
Level of Service	E	C	D	A	E	
Approach Delay (s)	35.5			13.8	72.3	
Approach LOS	D			B	E	

Intersection Summary			
HCM 2000 Control Delay	37.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	396	467	1709	1476	20
Future Volume (veh/h)	21	396	467	1709	1476	20
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	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	1573	1695	1736	1736	1709	1654
Adj Flow Rate, veh/h	23	430	508	1858	1604	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	13	4	1	1	3	7
Cap, veh/h	324	659	456	2319	1398	19
Arrive On Green	0.22	0.22	0.48	1.00	0.43	0.43
Sat Flow, veh/h	1498	1437	1654	3386	3365	45
Grp Volume(v), veh/h	23	430	508	1858	793	833
Grp Sat Flow(s),veh/h/ln	1498	1437	1654	1650	1624	1701
Q Serve(g_s), s	1.6	28.1	31.5	0.0	55.4	55.4
Cycle Q Clear(g_c), s	1.6	28.1	31.5	0.0	55.4	55.4
Prop In Lane	1.00	1.00	1.00			0.03
Lane Grp Cap(c), veh/h	324	659	456	2319	692	725
V/C Ratio(X)	0.07	0.65	1.11	0.80	1.15	1.15
Avail Cap(c_a), veh/h	324	659	456	2319	692	725
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.09	0.09	1.00	1.00
Uniform Delay (d), s/veh	40.6	27.2	26.6	0.0	37.3	37.3
Incr Delay (d2), s/veh	0.0	1.8	54.5	0.3	82.2	82.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	10.6	15.3	0.1	37.3	39.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.6	29.0	81.1	0.3	119.5	119.8
LnGrp LOS	D	C	F	A	F	F
Approach Vol, veh/h	453			2366	1626	
Approach Delay, s/veh	29.6			17.6	119.7	
Approach LOS	C			B	F	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	36.0	61.4				97.4	32.6
Change Period (Y+Rc), s	4.5	6.0				6.0	4.5
Max Green Setting (Gmax), s	31.5	55.4				91.4	28.1
Max Q Clear Time (g_c+I1), s	33.5	57.4				2.0	30.1
Green Ext Time (p_c), s	0.0	0.0				5.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	56.2
HCM 6th LOS	E

Project Name:	Doaks Ferry (Titan Hill) Rezone
Project Number:	1603
Analysis Period:	Future Horizon Year 2036
Scenario:	Without Rezone Scenario

Intersection	Wallace at Glen (AM)												Notes
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate		129	619	182			169				1729		HCM2000 Used for RTOR on EBR
Saturated Flow Rate		1750	2544	3057			3183				3327		HCM6th
	0	0.073714	0.243318	0.059535	0	0	0.053095	0	0	0	0.519687	0	
Cycle Length	130												
Lost Time	20										v/c Ratio=	1.121958	

Intersection	Wallace at Glen (PM)												Critical Movements
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate		148	304	304			462				1678		HCM2000 Used for RTOR on EBR
Saturated Flow Rate		1750	2516	3082			3183				3261		HCM6th
	0	0.084571	0.120827	0.098637	0	0	0.145146	0	0	0	0.514566	0	I see higher crit combination with EBTR and WBL than with EBL and WBTR
Cycle Length	130												
Lost Time	20										v/c Ratio=	1.138974	

Intersection	Wallace at Orchard Hts (AM)												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate	20		503				309				1408		Only shows 10 EB RTOR, seems very low for a dedicated lane; likely closer to 100 (3 per cycle)
Saturated Flow Rate	1498		1460				1628				3409		HCM2000 implies one RTOR for every three cycles
	excluded		0.344521	0	0	0	0.189803	0	0	0	0.413024	0	
Cycle Length	130												
Lost Time	15										v/c Ratio=	1.070916	

Intersection	Wallace at Orchard Hts (PM)												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate	23		420				502				1604		Only shows 4 EB RTOR, this is unrealistic for a dedicated lane.
Saturated Flow Rate	1498		1437				1654				3365		
	excluded		0.292276	0	0	0	0.303507	0	0	0	0.476672	0	
Cycle Length	130												
Lost Time	15										v/c Ratio=	1.212339	

Project Name:	Doaks Ferry (Titan Hill) Rezone
Project Number:	1603
Analysis Period:	Future Horizon Year 2036
Scenario:	With Rezone Scenario

Intersection	Wallace at Glen (AM)												Notes
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate		129	639	182			172				1772		HCM2000 Used for RTOR on EBR
Saturated Flow Rate		1750	2544	3057			3183				3328		HCM6th
	0	0.073714	0.251179	0.059535	0	0	0.054037	0	0	0	0.532452	0	
Cycle Length	130												
Lost Time	20										v/c Ratio=	1.147449	

Intersection	Wallace at Glen (PM)												Critical Movements
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate		148	310	304			471				1709		HCM2000 Used for RTOR on EBR
Saturated Flow Rate		1750	2516	3082			3183				3262		HCM6th
	0	0.084571	0.123211	0.098637	0	0	0.147974	0	0	0	0.523912	0	I see higher crit combination with EBTR and WBL than with EBL and WBTR
Cycle Length	130												
Lost Time	20										v/c Ratio=	1.156179	

Intersection	Wallace at Orchard Hts (AM)												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate	20		548				321				1408		Only shows 10 EB RTOR, seems very low for a dedicated lane; likely closer to 100 (3 per cycle)
Saturated Flow Rate	1498		1460				1628				3409		HCM2000 implies one RTOR for every three cycles
	excluded		0.375342	0	0	0	0.197174	0	0	0	0.413024	0	
Cycle Length	130												
Lost Time	15										v/c Ratio=	1.11409	

Intersection	Wallace at Orchard Hts (PM)												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate	23		437				524				1604		Only shows 4 EB RTOR, this is unrealistic for a dedicated lane.
Saturated Flow Rate	1498		1437				1654				3365		
	excluded		0.304106	0	0	0	0.316808	0	0	0	0.476672	0	
Cycle Length	130												
Lost Time	15										v/c Ratio=	1.240748	

Project Name:	Doaks Ferry (Titan Hill) Rezone
Project Number:	1603
Analysis Period:	Future Horizon Year 2036
Scenario:	With Rezone and Trip Cap

Intersection	Wallace at Glen (AM)												Notes
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate		129	630	182			171				1752		HCM2000 Used for RTOR on EBR
Saturated Flow Rate		1750	2544	3057			3183				3327		HCM6th
	0	0.073714	0.247642	0.059535	0	0	0.053723	0	0	0	0.526601	0	
Cycle Length	130												
Lost Time	20										v/c Ratio=	1.135981	

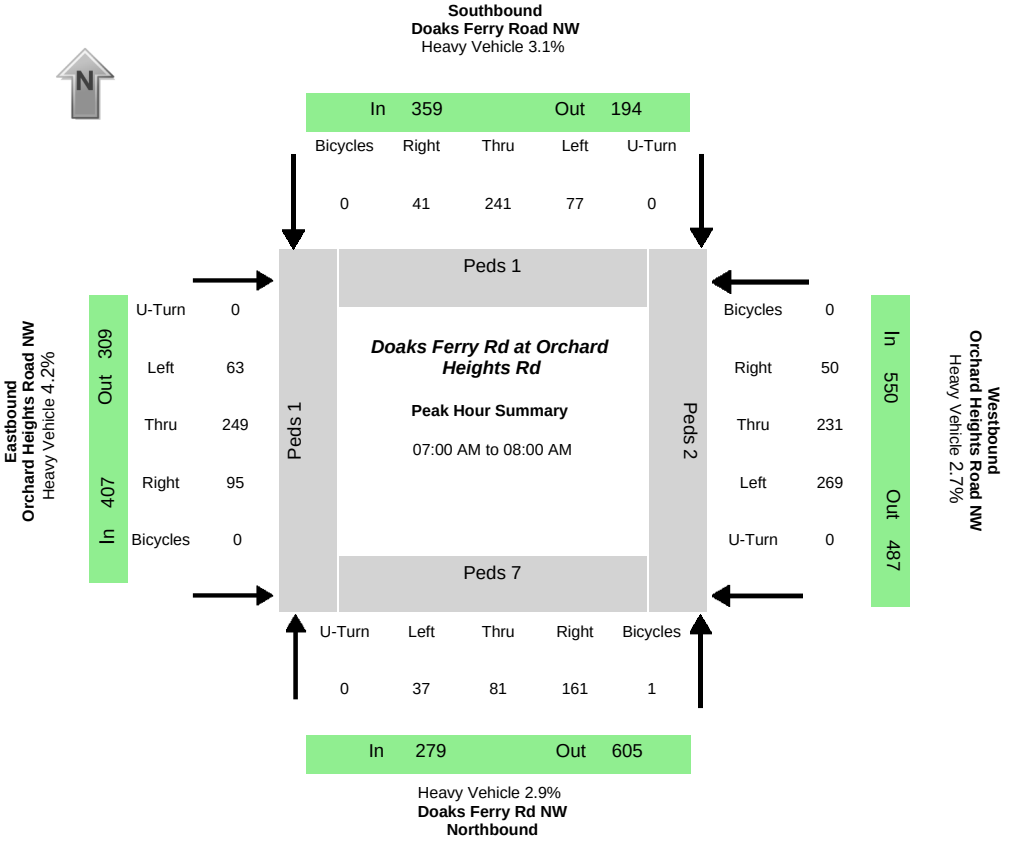
Intersection	Wallace at Glen (PM)												Critical Movements
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate		148	306	304			464				1709		HCM2000 Used for RTOR on EBR
Saturated Flow Rate		1750	2516	3082			3183				3262		HCM6th
	0	0.084571	0.121622	0.098637	0	0	0.145774	0	0	0	0.523912	0	I see higher crit combination with EBTR and WBL than with EBL and WBTR
Cycle Length	130												
Lost Time	20										v/c Ratio=	1.151701	

Intersection	Wallace at Orchard Hts (AM)												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate	20		526				313				1408		Only shows 10 EB RTOR, seems very low for a dedicated lane; likely closer to 100 (3 per cycle)
Saturated Flow Rate	1498		1460				1628				3409		HCM2000 implies one RTOR for every three cycles
	excluded		0.360274	0	0	0	0.19226	0	0	0	0.413024	0	
Cycle Length	130												
Lost Time	15										v/c Ratio=	1.091501	

Intersection	Wallace at Orchard Hts (PM)												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate	23		426				508				1604		Only shows 4 EB RTOR, this is unrealistic for a dedicated lane.
Saturated Flow Rate	1498		1437				1654				3365		
	excluded		0.296451	0	0	0	0.307134	0	0	0	0.476672	0	
Cycle Length	130												
Lost Time	15										v/c Ratio=	1.22116	

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Doaks Ferry Rd NW*
E/W street	*Orchard Heights Road NW*
City, State	Salem OR
Site Notes	
Location	44.960438 - -123.079714
Start Date	Wednesday, January 22, 2020
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:00:00 AM
Peak 15 Min Start	07:20:00 AM
PHF (15-Min Int)	0.77



Peak-Hour Volumes (PHV)																								
Northbound				**Southbound**				**Eastbound**				**Westbound**				**Entering**				**Leaving**			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
37	81	161	0	77	241	41	0	63	249	95	0	269	231	50	0	279	359	407	550	605	194	309	487
Percent Heavy Vehicles																							
2.7%	1.2%	3.7%	0.0%	3.9%	1.2%	12.2%	0.0%	6.3%	3.6%	4.2%	0.0%	2.2%	3.5%	2.0%	0.0%	2.9%	3.1%	4.2%	2.7%	2.1%	3.1%	4.5%	3.7%

PHV- Bicycles																	PHV - Pedestrians					
Northbound				**Southbound**				**Eastbound**				**Westbound**					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**	NB	SB	EB	WB	**Sum**
0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	1	1	2	11

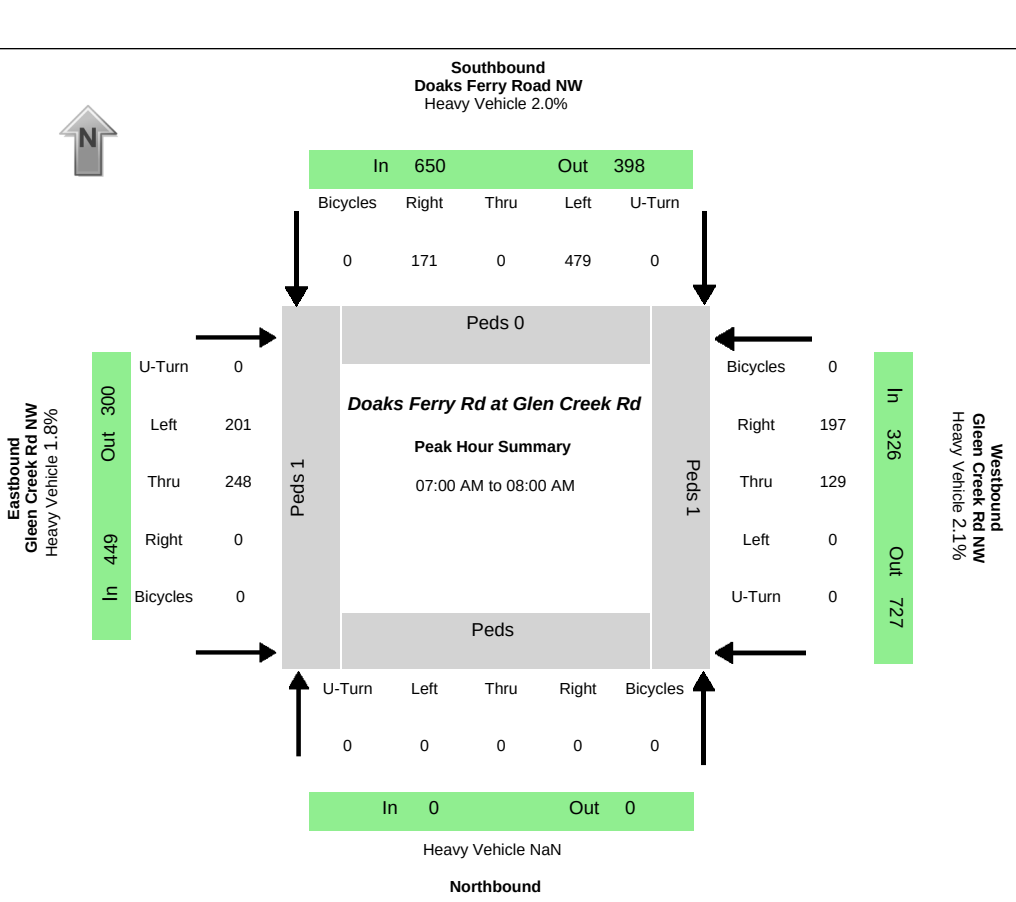
All Vehicle Volumes

	Northbound Doaks Ferry Rd NW				**Southbound** Doaks Ferry Road NW				**Eastbound** Orchard Heights Road NW				**Westbound** Orchard Heights Road NW				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
06:00:00 AM	0	2	0	0	0	3	1	0	0	2	0	0	2	3	0	0		
06:05:00 AM	0	2	1	0	0	1	0	0	0	3	0	0	7	1	0	0		
06:10:00 AM	0	2	2	0	0	3	0	0	0	7	1	0	4	1	0	0	48	
06:15:00 AM	0	0	1	0	0	4	0	0	0	4	0	0	2	0	0	0	46	
06:20:00 AM	0	2	4	0	0	0	0	0	0	3	0	0	1	2	1	0	44	
06:25:00 AM	0	2	4	0	0	1	1	0	1	6	0	0	2	2	0	0	43	
06:30:00 AM	0	4	5	0	2	3	0	0	1	6	1	0	6	3	0	0	63	
06:35:00 AM	0	5	2	0	0	1	0	0	3	10	0	0	6	1	2	0	80	
06:40:00 AM	0	5	4	0	2	6	3	0	1	7	2	0	2	6	2	0	101	
06:45:00 AM	0	4	1	0	0	8	2	0	3	14	1	0	8	2	1	0	114	
06:50:00 AM	2	3	4	0	1	6	3	0	2	8	4	0	8	6	1	0	132	
06:55:00 AM	1	4	5	0	0	8	5	0	4	15	1	0	6	10	3	0	154	346
07:00:00 AM	3	5	4	0	2	13	4	0	7	19	3	0	15	15	2	0	202	425
07:05:00 AM	2	11	5	0	3	19	5	0	2	25	12	0	22	18	0	0	278	534
07:10:00 AM	3	3	8	0	5	19	7	0	4	25	16	0	24	47	1	0	378	676
07:15:00 AM	3	4	9	0	1	29	5	0	7	19	13	0	33	35	2	0	446	825
07:20:00 AM	16	11	14	0	5	20	9	0	10	25	12	0	24	22	1	0	491	981
07:25:00 AM	8	8	19	0	8	24	3	0	8	39	10	0	25	29	4	0	514	1147
07:30:00 AM	1	8	18	0	10	21	5	0	7	41	12	0	20	14	4	0	515	1277
07:35:00 AM	0	6	22	0	12	19	1	0	8	23	6	0	28	13	12	0	496	1397
07:40:00 AM	0	5	24	0	14	22	1	0	2	14	5	0	24	17	6	0	445	1491
07:45:00 AM	0	10	14	0	7	25	0	0	1	9	1	0	24	6	13	0	394	1557
07:50:00 AM	0	3	11	0	7	13	1	0	6	8	4	0	18	9	4	0	328	1593
07:55:00 AM	1	7	13	0	3	17	0	0	1	2	1	0	12	6	1	0	258	1595

08:00:00 AM	1	7	4	0	1	17	2	0	2	7	1	0	5	4	0	0	199	1554
08:05:00 AM	0	9	3	0	2	12	0	0	0	7	2	0	7	5	1	0	163	1478
08:10:00 AM	0	3	1	0	1	12	1	0	0	8	3	0	4	5	2	0	139	1356
08:15:00 AM	1	4	1	0	3	10	1	0	2	6	2	0	2	5	1	0	126	1234
08:20:00 AM	0	6	4	0	4	4	1	0	0	10	1	0	0	3	0	0	111	1098
08:25:00 AM	0	3	6	0	1	7	1	0	1	4	2	0	2	6	1	0	105	947
08:30:00 AM	1	3	7	0	2	9	1	0	0	10	3	0	2	6	2	0	113	832
08:35:00 AM	0	4	6	0	2	9	0	0	0	11	2	0	5	4	1	0	124	726
08:40:00 AM	1	5	8	0	4	8	0	0	2	8	1	0	7	7	3	0	144	646
08:45:00 AM	0	2	6	0	0	4	1	0	3	10	3	0	9	5	5	0	146	584
08:50:00 AM	0	3	10	0	2	15	1	0	2	7	0	0	10	7	2	0	161	559
08:55:00 AM	0	10	15	0	0	3	4	0	2	11	2	0	11	4	1	0	170	558

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Doaks Ferry Road NW*
E/W street	*Gleen Creek Rd NW*
City, State	Salem OR
Site Notes	
Location	44.952083 - -123.084318
Start Date	Wednesday, January 22, 2020
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:00:00 AM
Peak 15 Min Start	07:15:00 AM
PHF (15-Min Int)	0.80



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	479	0	171	0	201	248	0	0	0	129	197	0	0	650	449	326	0	398	300	727

Percent Heavy Vehicles

0.0%	0.0%	0.0%	0.0%	1.9%	0.0%	2.3%	0.0%	2.0%	1.6%	0.0%	0.0%	0.0%	3.9%	1.0%	0.0%	NaN	2.0%	1.8%	2.1%	NaN	1.5%	3.0%	1.8%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum
				0		0	0	0	0		0		0	0	0	0

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	Sum
	0	1	1	2

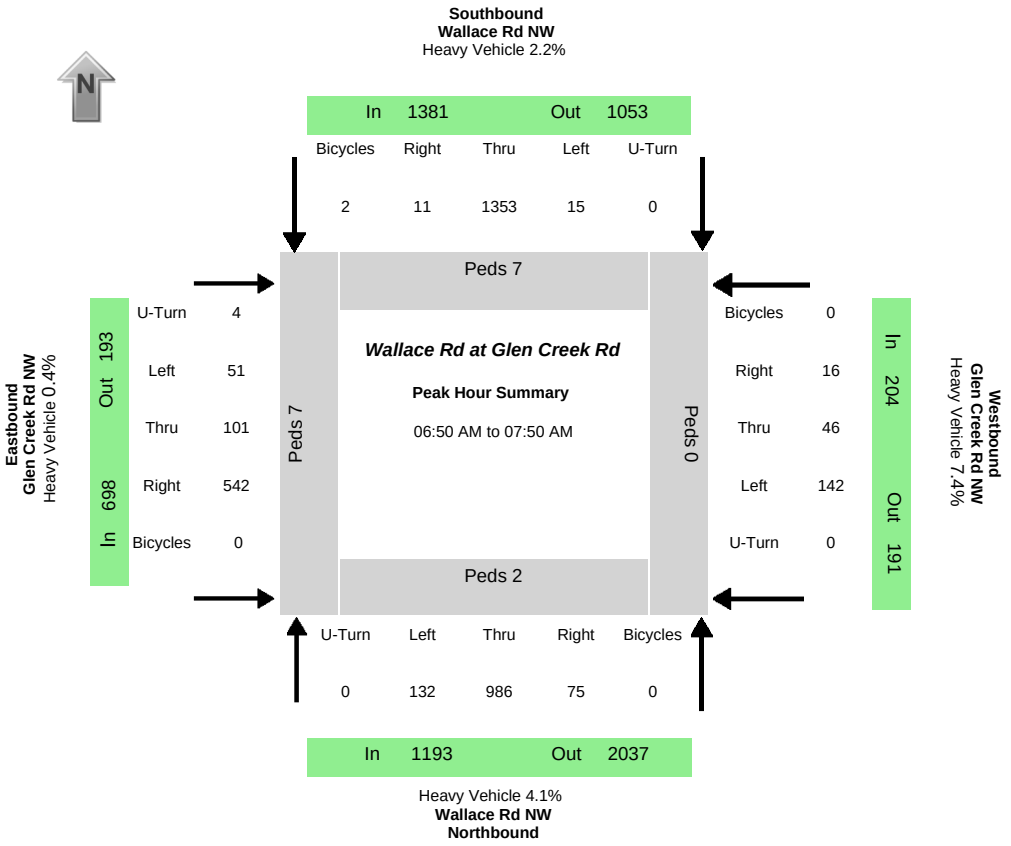
All Vehicle Volumes

	Northbound				Southbound Doaks Ferry Road NW				Eastbound Gleen Creek Rd NW				Westbound Gleen Creek Rd NW				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
06:00:00 AM					2		4	0	4	7		0		2	1	0		
06:05:00 AM					2		8	0	2	3		0		9	2	0		
06:10:00 AM					2		7	0	2	5		0		3	3	0	68	
06:15:00 AM					3		6	0	2	11		0		4	1	0	75	
06:20:00 AM					5		2	0	3	9		0		1	1	0	70	
06:25:00 AM					3		3	0	5	12		0		3	3	0	77	
06:30:00 AM					7		4	0	5	18		0		1	7	0	92	
06:35:00 AM					11		3	0	9	20		0		11	2	0	127	
06:40:00 AM					9		7	0	4	19		0		2	3	0	142	
06:45:00 AM					9		7	0	4	12		0		5	7	0	144	
06:50:00 AM					13		9	0	8	29		0		5	14	0	166	
06:55:00 AM					13		6	0	16	14		0		13	8	0	192	479
07:00:00 AM					26		11	0	18	12		0		11	23	0	249	560
07:05:00 AM					30		13	0	16	11		0		20	29	0	290	653
07:10:00 AM					48		14	0	16	13		0		21	20	0	352	763
07:15:00 AM					50		20	0	19	14		0		18	35	0	407	892
07:20:00 AM					46		10	0	25	24		0		13	26	0	432	1015
07:25:00 AM					49		18	0	15	34		0		12	18	0	446	1132
07:30:00 AM					61		15	0	17	35		0		5	8	0	431	1231
07:35:00 AM					45		18	0	16	25		0		5	14	0	410	1298
07:40:00 AM					47		12	0	22	21		0		2	3	0	371	1361
07:45:00 AM					37		18	0	12	16		0		5	7	0	325	1412
07:50:00 AM					16		13	0	15	22		0		13	8	0	289	1421
07:55:00 AM					24		9	0	10	21		0		4	6	0	256	1425

08:00:00 AM		12	10	0	5	13	0	10	3	0	214	1377
08:05:00 AM		11	10	0	6	22	0	5	5	0	186	1317
08:10:00 AM		15	9	0	4	15	0	6	9	0	170	1243
08:15:00 AM		8	10	0	7	18	0	6	7	0	173	1143
08:20:00 AM		5	5	0	8	15	0	6	7	0	160	1045
08:25:00 AM		8	7	0	15	11	0	5	7	0	155	952
08:30:00 AM		19	9	0	24	18	0	5	16	0	190	902
08:35:00 AM		18	13	0	17	12	0	8	13	0	225	860
08:40:00 AM		31	12	0	11	16	0	5	8	0	255	836
08:45:00 AM		20	15	0	10	18	0	4	4	0	235	812
08:50:00 AM		12	12	0	23	20	0	5	11	0	237	808
08:55:00 AM		12	9	0	10	9	0	15	8	0	217	797

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Wallace Rd NW*
E/W street	*Glen Creek Rd NW*
City, State	Salem OR
Site Notes	
Location	44.950175 - -123.051659
Start Date	Wednesday, January 22, 2020
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	06:50:00 AM
Peak 15 Min Start	07:05:00 AM
PHF (15-Min Int)	0.93



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
132	986	75	0	15	1353	11	0	51	101	542	4	142	46	16	0	1193	1379	698	204	2037	1053	193	191

Percent Heavy Vehicles

2.3%	4.6%	1.3%	0.0%	6.7%	1.9%	27.3%	0.0%	0.0%	0.0%	0.6%	0.0%	7.0%	6.5%	12.5%	0.0%	4.1%	2.2%	0.4%	7.4%	1.9%	4.5%	4.7%	1.0%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	**Sum**
2	7	7	0	16

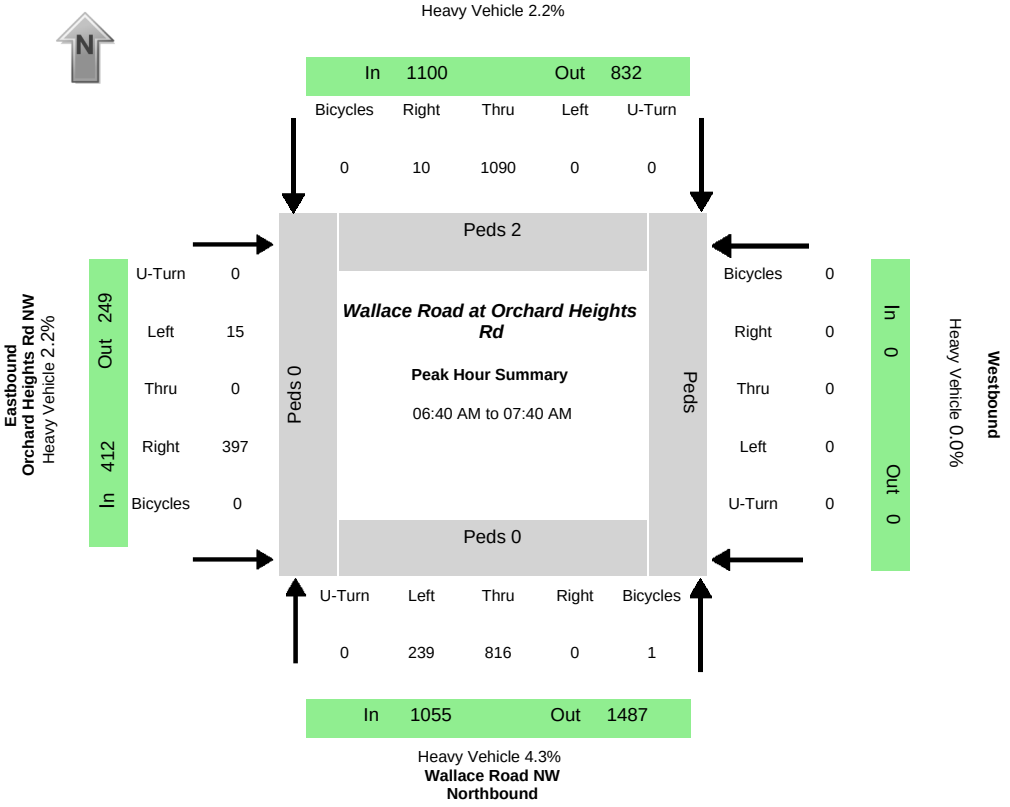
All Vehicle Volumes

	Northbound Wallace Rd NW				Southbound Wallace Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
06:00:00 AM	3	35	2	0	1	43	0	0	4	4	13	0	4	5	3	0		
06:05:00 AM	4	22	2	0	2	45	0	0	4	3	12	0	5	4	3	0		
06:10:00 AM	7	39	2	0	0	66	0	0	2	2	12	0	17	7	5	0	382	
06:15:00 AM	1	48	2	0	1	75	0	0	1	0	23	0	8	2	3	0	429	
06:20:00 AM	2	46	3	0	1	73	1	0	3	2	26	0	7	0	1	0	488	
06:25:00 AM	2	58	6	0	1	94	0	0	0	3	27	0	7	2	2	0	531	
06:30:00 AM	1	56	2	0	1	74	0	0	3	7	29	1	9	4	0	0	554	
06:35:00 AM	5	66	1	0	1	111	1	0	3	3	26	0	6	4	1	0	617	
06:40:00 AM	7	78	5	0	0	119	0	0	5	4	47	0	8	0	0	0	688	
06:45:00 AM	8	69	5	0	0	107	1	0	2	4	29	0	15	9	3	0	753	
06:50:00 AM	9	93	2	0	1	128	4	0	3	4	28	0	15	4	4	0	820	
06:55:00 AM	7	71	3	0	1	124	3	0	2	7	40	0	8	4	2	0	819	2420
07:00:00 AM	22	105	4	0	0	88	2	0	6	8	43	0	10	5	1	0	861	2597
07:05:00 AM	15	111	2	0	4	147	1	0	3	4	36	1	7	3	4	0	904	2829
07:10:00 AM	10	73	3	0	0	126	1	0	2	5	47	0	11	1	1	0	912	2950
07:15:00 AM	13	86	3	0	1	104	0	0	2	7	75	3	15	4	0	0	931	3099
07:20:00 AM	12	87	9	0	2	101	0	0	3	6	55	0	15	5	1	0	889	3230
07:25:00 AM	8	74	6	0	0	119	0	0	2	6	45	0	7	0	0	0	876	3295
07:30:00 AM	17	72	7	0	1	101	0	0	9	9	45	0	13	7	0	0	844	3389
07:35:00 AM	3	90	15	0	3	93	0	0	7	15	41	0	18	4	2	0	839	3452
07:40:00 AM	5	64	9	0	0	124	0	0	9	11	36	0	15	4	1	0	850	3457
07:45:00 AM	11	60	12	0	2	98	0	0	3	19	51	0	8	5	0	0	838	3474
07:50:00 AM	7	79	13	0	0	72	0	0	6	15	30	0	14	5	1	0	789	3421
07:55:00 AM	7	53	8	0	2	92	0	0	7	10	31	0	14	6	4	0	745	3383

08:00:00 AM	7	43	9	1	1	140	1	0	6	11	35	0	10	3	1	0	744	3357
08:05:00 AM	6	71	7	0	3	83	1	0	6	13	42	0	12	8	3	0	757	3274
08:10:00 AM	8	47	12	0	3	119	0	0	1	11	18	0	10	8	1	0	761	3232
08:15:00 AM	7	50	9	0	3	118	1	0	3	6	31	0	11	3	2	0	737	3163
08:20:00 AM	20	68	10	0	2	76	0	0	8	12	40	0	7	4	0	0	729	3114
08:25:00 AM	10	64	4	0	2	89	1	0	2	9	23	0	10	8	7	1	721	3077
08:30:00 AM	15	58	12	0	1	72	1	0	3	4	33	0	12	6	1	0	695	3014
08:35:00 AM	5	48	9	0	1	105	0	0	4	7	31	0	8	0	6	0	672	2947
08:40:00 AM	5	77	10	0	6	107	6	0	5	9	29	0	13	5	2	0	716	2943
08:45:00 AM	11	62	11	0	5	79	1	0	8	10	48	0	19	7	3	0	762	2938
08:50:00 AM	15	55	15	0	6	95	0	0	4	10	30	1	12	4	0	0	785	2943
08:55:00 AM	18	76	13	0	2	113	4	0	4	12	21	0	17	11	4	0	806	3004

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Wallace Road NW*
E/W street	*Orchard Heights Rd NW*
City, State	Salem OR
Site Notes	
Location	44.953357 - -123.05262
Start Date	Wednesday, January 22, 2020
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	06:40:00 AM
Peak 15 Min Start	06:55:00 AM
PHF (15-Min Int)	0.92



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
239	816	0	0	0	1090	10	0	15	0	397	0	0	0	0	0	1055	1100	412	0	1487	831	249	0

Percent Heavy Vehicles

2.9%	4.7%	0.0%	0.0%	0.0%	1.8%	40.0%	0.0%	13.3%	0.0%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	4.3%	2.2%	2.2%	0.0%	1.8%	4.8%	4.4%	0.0%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	1		0		0	0	0	0		0	0					1

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	**Sum**
0	2	0		2

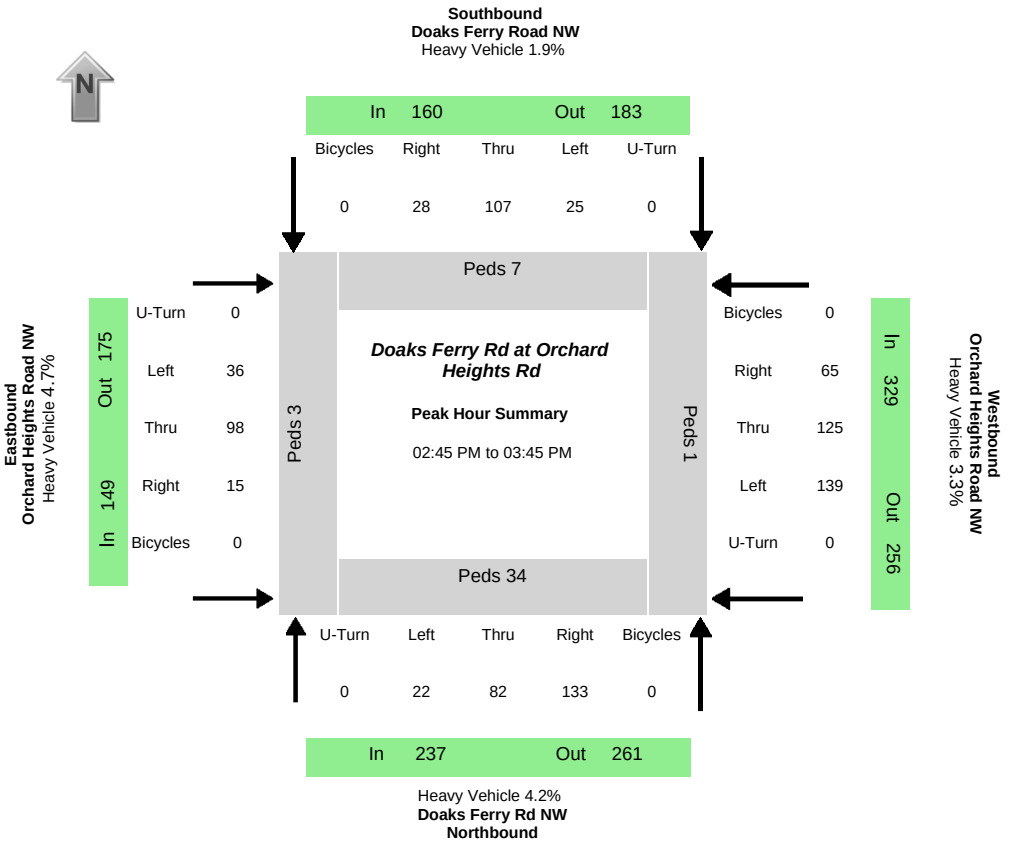
All Vehicle Volumes

	Northbound Wallace Road NW				Southbound Wallace Road NW				Eastbound Orchard Heights Rd NW				Westbound				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
06:00:00 AM	6	36		0		36	0	0	0		12	0						
06:05:00 AM	5	26		0		39	0	0	0		8	0						
06:10:00 AM	1	44		0		52	0	0	0		22	0					287	
06:15:00 AM	8	45		0		57	0	0	1		15	0					323	
06:20:00 AM	5	46		0		61	0	0	1		27	0					385	
06:25:00 AM	6	55		0		80	0	0	1		23	0					431	
06:30:00 AM	7	49		0		67	0	0	1		15	0					444	
06:35:00 AM	10	56		0		89	0	0	0		28	0					487	
06:40:00 AM	8	91		0		104	0	0	0		30	0					555	
06:45:00 AM	9	66		0		80	0	0	2		41	0					614	
06:50:00 AM	11	77		0		101	0	0	0		33	0					653	
06:55:00 AM	17	80		0		112	1	0	2		32	0					664	1937
07:00:00 AM	33	64		0		69	0	0	0		38	0					670	2051
07:05:00 AM	28	69		0		110	1	0	0		38	0					694	2219
07:10:00 AM	30	58		0		120	2	0	0		19	0					679	2329
07:15:00 AM	25	63		0		84	1	0	1		37	0					686	2414
07:20:00 AM	20	66		0		76	0	0	3		37	0					642	2476
07:25:00 AM	25	65		0		81	3	0	1		25	0					613	2511
07:30:00 AM	17	56		0		76	2	0	4		31	0					588	2558
07:35:00 AM	16	61		0		77	0	0	2		36	0					578	2567
07:40:00 AM	8	54		0		69	2	0	1		33	0					545	2501
07:45:00 AM	12	63		0		53	1	0	1		32	0					521	2465
07:50:00 AM	22	51		0		60	1	0	1		24	0					488	2402
07:55:00 AM	16	44		0		50	3	0	1		36	0					471	2308

08:00:00 AM	13	48	0	99	3	0	0	22	0		494	2289
08:05:00 AM	10	44	0	107	3	0	1	25	0		525	2233
08:10:00 AM	19	35	0	92	0	0	2	27	0		550	2179
08:15:00 AM	9	48	0	65	0	0	1	26	0		514	2117
08:20:00 AM	17	52	0	72	0	0	0	26	0		491	2082
08:25:00 AM	19	53	0	70	1	0	0	23	0		482	2048
08:30:00 AM	21	48	0	69	0	0	1	27	0		499	2028
08:35:00 AM	9	40	0	70	0	0	2	35	0		488	1992
08:40:00 AM	23	42	0	80	1	0	0	31	0		499	2002
08:45:00 AM	18	58	0	66	1	0	2	45	0		523	2030
08:50:00 AM	15	45	0	91	1	0	1	31	0		551	2055
08:55:00 AM	34	40	0	72	4	0	1	28	0		553	2084

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Doaks Ferry Rd NW*
E/W street	*Orchard Heights Road NW*
City, State	Salem OR
Site Notes	
Location	44.960438 - -123.079714
Start Date	Wednesday, January 22, 2020
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	02:45:00 PM
Peak 15 Min Start	02:45:00 PM
PHF (15-Min Int)	0.85



Peak-Hour Volumes (PHV)																								
Northbound				**Southbound**				**Eastbound**				**Westbound**				**Entering**				**Leaving**			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
22	82	133	0	25	107	28	0	36	98	15	0	139	125	65	0	237	160	149	329	261	183	175	256
Percent Heavy Vehicles																							
4.5%	4.9%	3.8%	0.0%	4.0%	0.9%	3.6%	0.0%	2.8%	5.1%	6.7%	0.0%	2.9%	4.0%	3.1%	0.0%	4.2%	1.9%	4.7%	3.3%	2.3%	3.8%	4.0%	4.3%

PHV- Bicycles																	PHV - Pedestrians				
Northbound				**Southbound**				**Eastbound**				**Westbound**					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**	NB	SB	EB	WB	**Sum**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	7	3	1	45

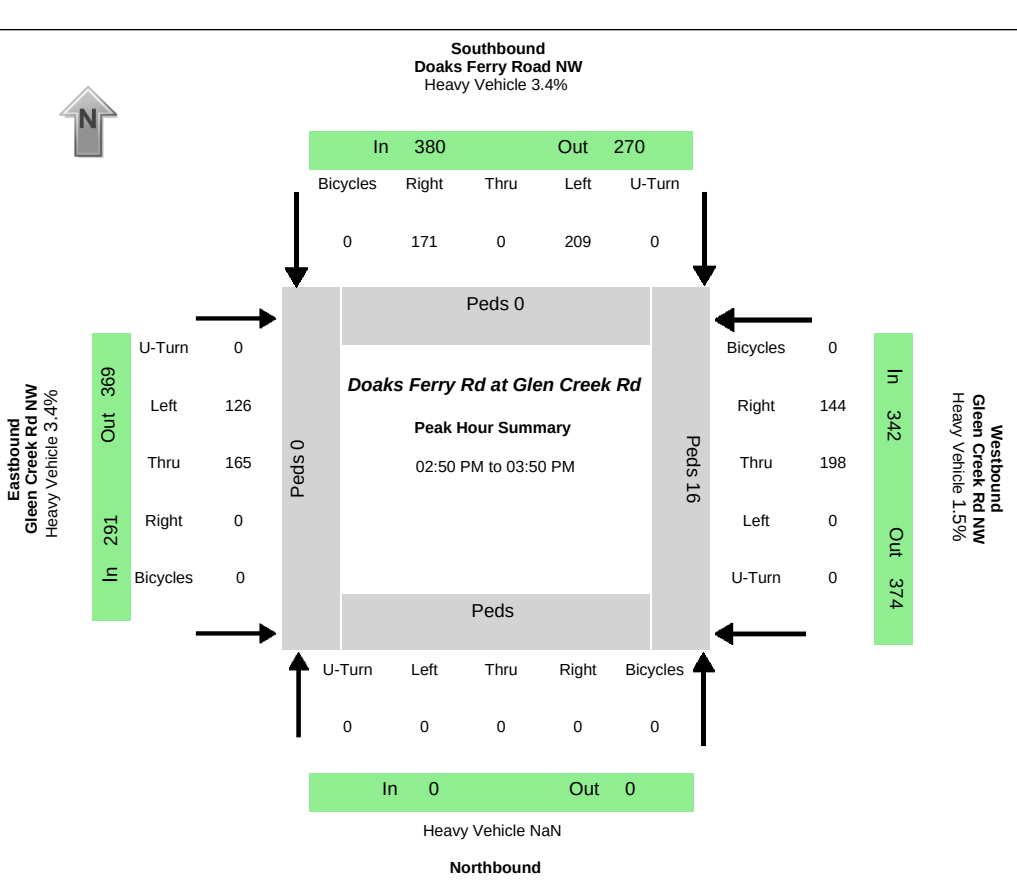
All Vehicle Volumes

	Northbound Doaks Ferry Rd NW				**Southbound** Doaks Ferry Road NW				**Eastbound** Orchard Heights Road NW				**Westbound** Orchard Heights Road NW				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
02:00:00 PM	2	3	2	0	0	9	0	0	2	11	2	0	3	8	2	0		
02:05:00 PM	0	9	8	0	0	3	2	0	0	10	0	0	4	4	2	0		
02:10:00 PM	1	6	4	0	2	2	0	0	0	8	0	0	2	11	1	0	123	
02:15:00 PM	1	4	4	0	4	5	0	0	2	3	2	0	3	7	0	0	114	
02:20:00 PM	1	4	6	0	2	6	3	0	0	5	1	0	5	4	0	0	109	
02:25:00 PM	2	4	4	0	0	4	3	0	2	11	1	0	2	13	0	0	118	
02:30:00 PM	0	5	14	0	9	6	0	0	3	11	1	0	2	4	2	0	140	
02:35:00 PM	1	7	11	0	7	2	2	0	3	4	1	0	2	6	2	0	151	
02:40:00 PM	0	3	9	0	7	7	2	0	0	8	0	0	10	9	7	0	167	
02:45:00 PM	1	11	11	0	3	13	2	0	4	7	1	0	22	11	13	0	209	
02:50:00 PM	2	10	11	0	1	8	1	0	2	10	2	0	23	12	14	0	257	
02:55:00 PM	1	6	8	0	2	8	3	0	2	11	0	0	7	9	6	0	258	666
03:00:00 PM	1	6	9	0	3	5	1	0	2	1	1	0	4	4	7	0	203	666
03:05:00 PM	3	9	16	0	3	7	0	0	5	8	0	0	4	7	3	0	172	689
03:10:00 PM	2	7	11	0	3	9	6	0	4	8	1	0	3	12	2	0	177	720
03:15:00 PM	3	3	10	0	2	8	0	0	3	11	2	0	16	10	6	0	207	759
03:20:00 PM	3	7	19	0	1	16	11	0	3	10	3	0	6	5	2	0	228	808
03:25:00 PM	1	8	14	0	2	10	0	0	1	7	1	0	4	14	2	0	224	826
03:30:00 PM	1	6	9	0	1	4	2	0	5	9	2	0	8	8	3	0	208	827
03:35:00 PM	2	2	10	0	2	7	1	0	5	10	1	0	13	12	4	0	191	848
03:40:00 PM	2	7	5	0	2	12	1	0	0	6	1	0	29	21	3	0	216	875
03:45:00 PM	0	5	7	0	7	8	1	0	1	4	1	0	28	13	5	0	238	856
03:50:00 PM	1	6	8	0	1	12	5	0	0	9	1	0	7	8	8	0	235	826
03:55:00 PM	3	5	4	0	2	11	2	0	3	6	1	0	7	7	2	0	199	816

04:00:00 PM	1	10	3	0	3	10	0	0	0	4	0	0	5	7	4	0	166	819
04:05:00 PM	1	9	4	0	3	14	3	0	3	3	0	0	13	6	4	0	163	817
04:10:00 PM	0	4	4	0	5	13	3	0	2	4	2	0	14	11	3	0	175	814
04:15:00 PM	3	6	6	0	0	9	1	0	1	8	1	0	4	11	4	0	182	794
04:20:00 PM	2	7	10	0	1	12	2	0	2	3	0	0	5	4	5	0	172	761
04:25:00 PM	1	11	10	0	6	13	4	0	5	8	0	0	5	14	3	0	187	777
04:30:00 PM	3	8	5	0	0	4	1	0	1	9	1	0	10	13	4	0	192	778
04:35:00 PM	2	9	15	0	1	15	2	0	4	11	0	0	10	4	3	0	215	785
04:40:00 PM	2	10	7	0	3	11	6	0	1	12	1	0	10	11	5	0	214	775
04:45:00 PM	2	11	8	0	3	10	3	0	1	5	1	0	5	6	0	0	210	750
04:50:00 PM	2	11	9	0	7	17	1	0	4	5	0	0	8	6	5	0	209	759
04:55:00 PM	0	7	10	0	2	15	0	0	0	8	1	0	8	5	2	0	188	764
05:00:00 PM	1	7	6	0	4	19	1	0	3	3	0	0	9	16	5	0	207	791
05:05:00 PM	0	11	8	0	2	4	1	0	3	9	1	0	9	7	6	0	193	789
05:10:00 PM	2	11	7	0	1	10	1	0	2	7	1	0	7	8	2	0	194	783
05:15:00 PM	2	6	6	0	1	13	2	0	3	6	2	0	3	11	2	0	177	786
05:20:00 PM	0	6	7	0	2	13	1	0	2	10	0	0	8	6	5	0	176	793
05:25:00 PM	1	11	14	0	2	7	1	0	1	5	3	0	8	8	0	0	178	774
05:30:00 PM	1	16	8	0	2	6	2	0	2	6	3	0	8	13	5	0	193	787
05:35:00 PM	1	8	6	0	1	9	0	0	1	5	2	0	4	12	1	0	183	761
05:40:00 PM	1	11	6	0	5	5	0	0	0	8	0	0	4	9	0	0	171	731
05:45:00 PM	0	7	10	0	2	9	2	0	3	1	0	0	1	8	2	0	144	721
05:50:00 PM	2	9	5	0	2	6	3	0	3	7	1	0	8	13	3	0	156	708
05:55:00 PM	1	12	1	0	2	10	5	0	0	7	1	0	5	9	0	0	160	703

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Doaks Ferry Road NW*
E/W street	*Gleen Creek Rd NW*
City, State	Salem OR
Site Notes	
Location	44.952083 - -123.084318
Start Date	Wednesday, January 22, 2020
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	02:50:00 PM
Peak 15 Min Start	03:35:00 PM
PHF (15-Min Int)	0.92



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	209	0	171	0	126	165	0	0	0	198	144	0	0	380	291	342	0	270	369	374

Percent Heavy Vehicles

0.0%	0.0%	0.0%	0.0%	2.4%	0.0%	4.7%	0.0%	4.0%	3.0%	0.0%	0.0%	0.0%	0.5%	2.8%	0.0%	NaN	3.4%	3.4%	1.5%	NaN	3.3%	2.4%	2.7%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
				0		0	0	0	0		0		0	0	0	0

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	**Sum**
	0	0	16	16

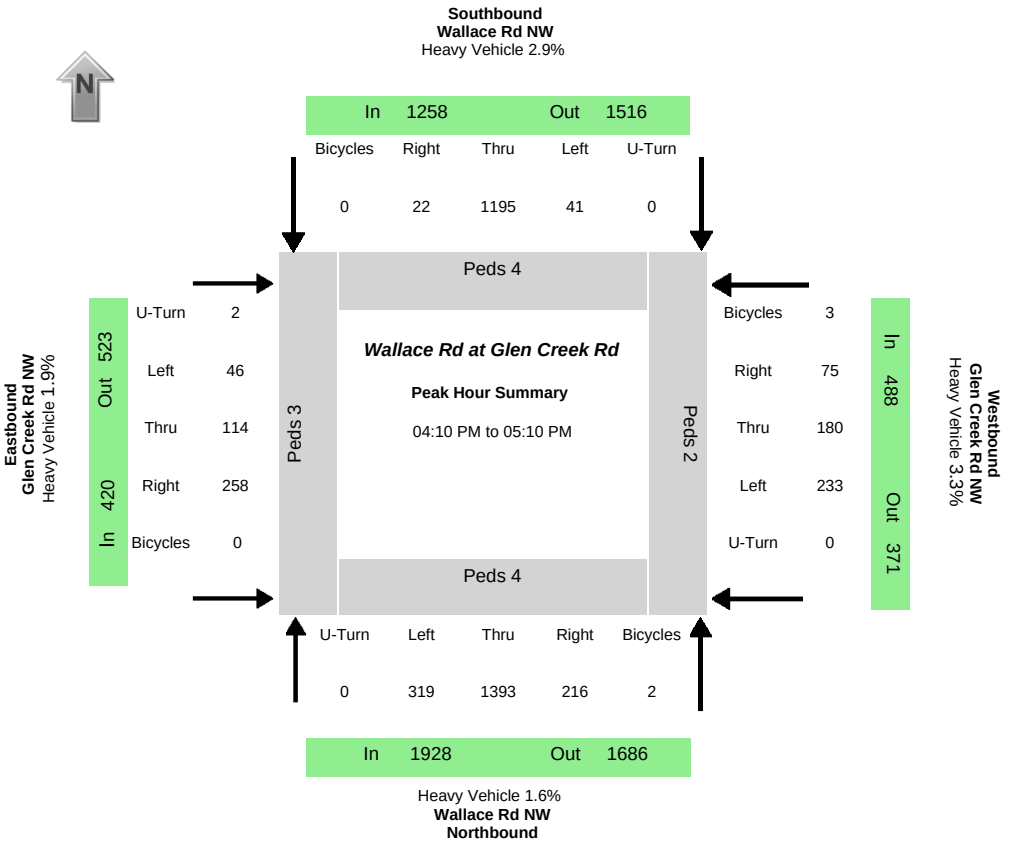
All Vehicle Volumes

	Northbound				Southbound Doaks Ferry Road NW				Eastbound Gleen Creek Rd NW				Westbound Gleen Creek Rd NW				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
02:00:00 PM					12		6	0	6	19		0		15	8	0		
02:05:00 PM					4		4	0	11	18		0		11	5	0		
02:10:00 PM					6		3	0	6	13		0		15	3	0	165	
02:15:00 PM					6		7	0	3	12		0		11	4	0	142	
02:20:00 PM					11		5	0	9	9		0		17	9	0	149	
02:25:00 PM					5		5	0	9	10		0		16	8	0	156	
02:30:00 PM					7		2	0	13	19		0		7	6	0	167	
02:35:00 PM					6		4	0	8	13		0		9	8	0	155	
02:40:00 PM					11		9	0	14	11		0		10	16	0	173	
02:45:00 PM					21		11	0	14	18		0		10	5	0	198	
02:50:00 PM					16		18	0	15	11		0		17	26	0	253	
02:55:00 PM					14		5	0	10	17		0		21	11	0	260	754
03:00:00 PM					13		8	0	14	19		0		22	17	0	274	781
03:05:00 PM					7		11	0	12	10		0		15	13	0	239	796
03:10:00 PM					17		13	0	9	13		0		13	9	0	235	824
03:15:00 PM					27		20	0	12	20		0		9	12	0	242	881
03:20:00 PM					17		13	0	17	11		0		16	3	0	251	898
03:25:00 PM					12		10	0	6	10		0		13	13	0	241	909
03:30:00 PM					13		10	0	8	17		0		20	12	0	221	935
03:35:00 PM					24		13	0	10	7		0		12	10	0	220	963
03:40:00 PM					24		25	0	7	13		0		23	8	0	256	992
03:45:00 PM					25		25	0	6	17		0		17	10	0	276	1013
03:50:00 PM					10		11	0	6	18		0		16	12	0	273	983
03:55:00 PM					9		10	0	8	16		0		16	9	0	241	973

04:00:00 PM		7	13	0	4	7	0	23	11	0	206	945
04:05:00 PM		22	14	0	9	18	0	9	5	0	210	954
04:10:00 PM		21	13	0	14	12	0	20	7	0	229	967
04:15:00 PM		11	9	0	8	12	0	18	11	0	233	936
04:20:00 PM		11	11	0	10	15	0	19	22	0	244	947
04:25:00 PM		16	6	0	10	12	0	29	14	0	244	970
04:30:00 PM		14	10	0	13	14	0	19	13	0	258	973
04:35:00 PM		19	9	0	14	9	0	16	14	0	251	978
04:40:00 PM		14	15	0	5	22	0	14	15	0	249	963
04:45:00 PM		9	11	0	22	16	0	21	12	0	257	954
04:50:00 PM		23	12	0	12	10	0	13	9	0	255	960
04:55:00 PM		18	11	0	14	19	0	15	8	0	255	977
05:00:00 PM		16	17	0	12	13	0	25	9	0	256	1004
05:05:00 PM		11	9	0	15	13	0	22	12	0	259	1009
05:10:00 PM		10	7	0	17	21	0	15	8	0	252	1000
05:15:00 PM		13	12	0	9	11	0	14	14	0	233	1004
05:20:00 PM		12	8	0	13	16	0	20	12	0	232	997
05:25:00 PM		14	9	0	18	11	0	15	10	0	231	987
05:30:00 PM		10	4	0	10	10	0	12	9	0	213	959
05:35:00 PM		14	8	0	12	16	0	13	14	0	209	955
05:40:00 PM		9	6	0	15	13	0	12	10	0	197	935
05:45:00 PM		6	9	0	13	12	0	20	17	0	219	921
05:50:00 PM		12	11	0	10	13	0	17	13	0	218	918
05:55:00 PM		13	7	0	13	15	0	18	7	0	226	906

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Wallace Rd NW*
E/W street	*Glen Creek Rd NW*
City, State	Salem OR
Site Notes	
Location	44.950175 - -123.051659
Start Date	Wednesday, January 22, 2020
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:10:00 PM
Peak 15 Min Start	04:40:00 PM
PHF (15-Min Int)	0.97



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
319	1393	216	0	41	1195	22	0	46	114	258	2	233	180	75	0	1928	1258	420	488	1686	1514	523	371

Percent Heavy Vehicles

1.6%	1.8%	0.5%	0.0%	4.9%	2.8%	0.0%	0.0%	2.2%	0.0%	2.7%	0.0%	5.6%	1.1%	1.3%	0.0%	1.6%	2.9%	1.9%	3.3%	3.2%	1.8%	1.3%	0.8%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	2	0	0	0	0	0	0	0	0	0	0	0	3	0	0	5

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	**Sum**
4	4	3	2	13

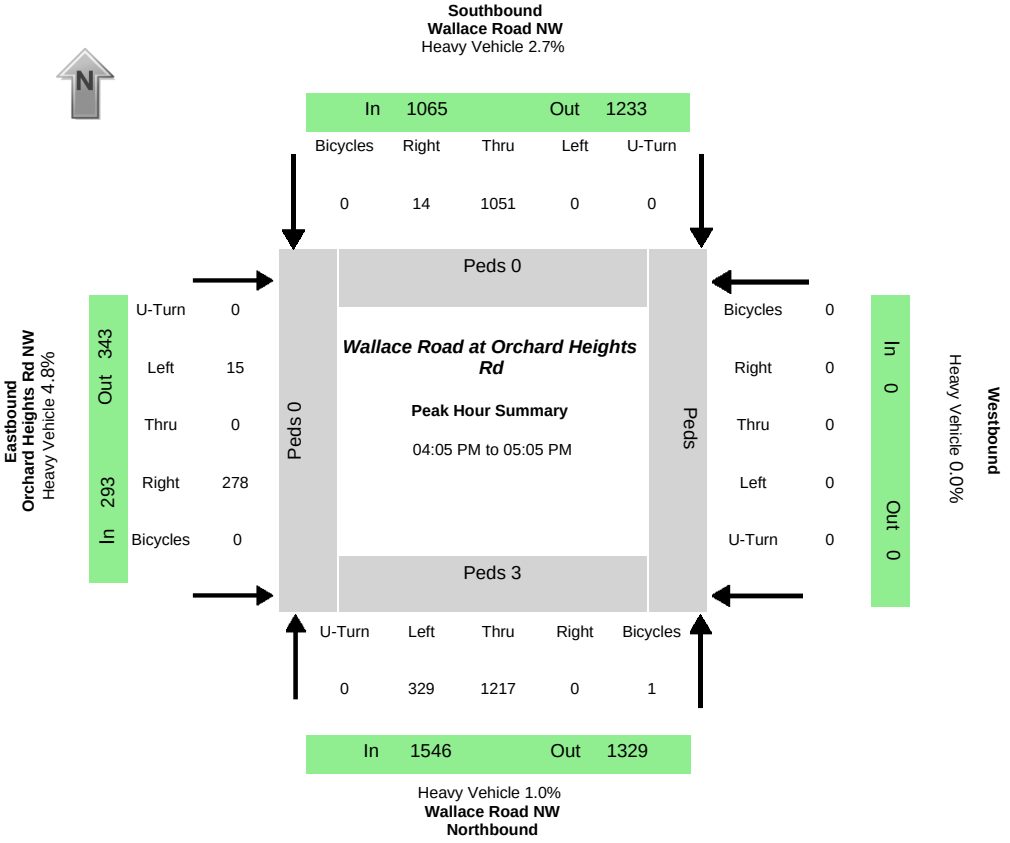
All Vehicle Volumes

	Northbound Wallace Rd NW				Southbound Wallace Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
02:00:00 PM	16	79	20	0	4	63	1	0	3	11	19	0	39	10	2	0		
02:05:00 PM	15	72	9	0	9	80	1	0	2	8	25	0	19	9	4	0		
02:10:00 PM	24	90	12	1	2	62	1	0	4	7	29	1	18	7	5	0	783	
02:15:00 PM	27	120	21	0	2	52	2	0	3	14	23	0	19	9	6	0	814	
02:20:00 PM	21	80	9	0	7	72	2	0	3	5	22	0	26	12	8	0	828	
02:25:00 PM	16	79	19	0	0	70	2	0	10	6	17	0	25	11	3	0	823	
02:30:00 PM	25	92	10	1	6	52	3	0	4	10	17	0	16	12	4	0	777	
02:35:00 PM	15	96	14	0	10	94	1	0	0	9	25	0	19	12	5	0	810	
02:40:00 PM	10	80	14	0	3	81	2	0	2	7	15	0	21	9	7	0	803	
02:45:00 PM	29	116	16	0	1	70	0	0	3	7	25	0	25	8	4	0	855	
02:50:00 PM	20	129	12	0	4	57	0	0	6	7	20	2	28	16	7	0	863	
02:55:00 PM	18	106	16	0	8	86	6	0	0	8	22	0	13	7	4	0	906	3315
03:00:00 PM	34	102	18	0	2	78	4	0	4	5	28	0	16	10	3	0	906	3352
03:05:00 PM	18	106	18	0	2	60	1	0	6	11	22	0	25	17	5	0	889	3390
03:10:00 PM	22	106	14	0	9	96	4	0	1	9	16	0	18	8	9	0	907	3439
03:15:00 PM	22	91	18	0	6	87	1	0	3	7	22	0	7	8	1	0	876	3414
03:20:00 PM	29	118	10	0	7	73	3	0	9	9	32	0	20	13	2	0	910	3472
03:25:00 PM	18	110	16	0	7	70	2	0	1	2	28	0	10	21	7	0	890	3506
03:30:00 PM	17	81	13	0	0	86	7	0	3	5	20	0	18	16	5	0	888	3525
03:35:00 PM	35	115	13	0	2	79	2	0	7	12	36	0	24	14	6	0	908	3570
03:40:00 PM	27	105	13	0	12	89	1	0	2	8	29	1	21	23	8	0	955	3658
03:45:00 PM	18	94	18	0	3	118	3	0	3	11	16	0	16	8	4	0	996	3666
03:50:00 PM	24	93	14	0	6	82	1	0	8	13	37	0	11	17	5	0	962	3669
03:55:00 PM	26	143	18	0	2	63	1	0	2	7	20	0	17	16	10	0	948	3700

04:00:00 PM	25	104	13	0	6	88	3	0	7	8	15	0	23	7	6	0	941	3701
04:05:00 PM	33	87	23	0	2	91	3	0	3	9	21	0	22	11	7	0	942	3722
04:10:00 PM	15	128	15	0	3	77	4	0	2	18	21	0	24	22	8	0	954	3747
04:15:00 PM	29	113	24	0	6	105	1	0	5	6	20	0	25	19	3	0	1005	3830
04:20:00 PM	38	92	22	0	1	88	1	0	7	3	21	0	17	10	7	0	1000	3812
04:25:00 PM	28	135	18	0	0	98	2	0	5	12	24	0	18	13	7	0	1023	3880
04:30:00 PM	25	122	18	0	1	114	3	0	4	8	20	1	16	24	6	0	1029	3971
04:35:00 PM	18	101	18	0	2	114	2	0	1	8	15	0	21	17	6	0	1045	3949
04:40:00 PM	31	121	21	0	4	97	0	0	7	12	39	0	16	12	3	0	1048	3973
04:45:00 PM	18	119	18	0	4	108	1	0	3	10	11	0	19	15	12	0	1024	3999
04:50:00 PM	22	122	11	0	6	133	1	0	3	5	21	1	19	10	2	0	1057	4044
04:55:00 PM	44	99	19	0	7	89	1	0	3	10	24	0	15	10	5	0	1020	4045
05:00:00 PM	23	120	15	0	5	77	3	0	4	10	22	0	30	19	11	0	1021	4079
05:05:00 PM	28	121	17	0	2	95	3	0	2	12	20	0	13	9	5	0	992	4094
05:10:00 PM	28	103	23	0	1	76	3	0	3	7	26	0	21	15	7	0	979	4070
05:15:00 PM	15	134	21	0	4	59	2	0	3	15	16	1	15	13	6	0	944	4018
05:20:00 PM	15	132	24	0	3	64	2	0	5	8	13	0	25	16	1	0	925	4019
05:25:00 PM	34	100	15	0	1	78	4	0	4	11	23	1	9	10	9	0	911	3958
05:30:00 PM	31	126	13	0	5	62	4	0	6	7	16	0	16	15	11	0	919	3908
05:35:00 PM	15	137	15	0	9	99	3	0	6	6	24	0	14	12	5	0	956	3930
05:40:00 PM	22	103	15	0	6	107	1	0	4	9	20	0	8	9	3	0	964	3874
05:45:00 PM	35	121	12	0	6	83	2	0	4	7	32	0	18	11	9	0	992	3876
05:50:00 PM	23	129	17	1	5	75	1	0	6	8	17	0	15	10	3	0	957	3830
05:55:00 PM	24	93	14	0	2	83	6	0	1	6	17	0	7	11	1	0	915	3769

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Wallace Road NW*
E/W street	*Orchard Heights Rd NW*
City, State	Salem OR
Site Notes	
Location	44.953357 - -123.05262
Start Date	Wednesday, January 22, 2020
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:05:00 PM
Peak 15 Min Start	04:40:00 PM
PHF (15-Min Int)	0.92



Peak-Hour Volumes (PHV)																								
Northbound				**Southbound**				**Eastbound**				**Westbound**				**Entering**				**Leaving**			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
329	1217	0	0	0	1051	14	0	15	0	278	0	0	0	0	0	1546	1065	293	0	1329	1232	343	0
Percent Heavy Vehicles																							
0.9%	1.0%	0.0%	0.0%	0.0%	2.7%	7.1%	0.0%	13.3%	0.0%	4.3%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	2.7%	4.8%	0.0%	3.0%	1.1%	1.2%	0.0%

PHV- Bicycles																PHV - Pedestrians				
Northbound				**Southbound**				**Eastbound**				**Westbound**					in Crosswalk			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**	NB	SB	EB	WB	**Sum**
0	1		0		0	0	0	0		0	0					1	3	0	0		3

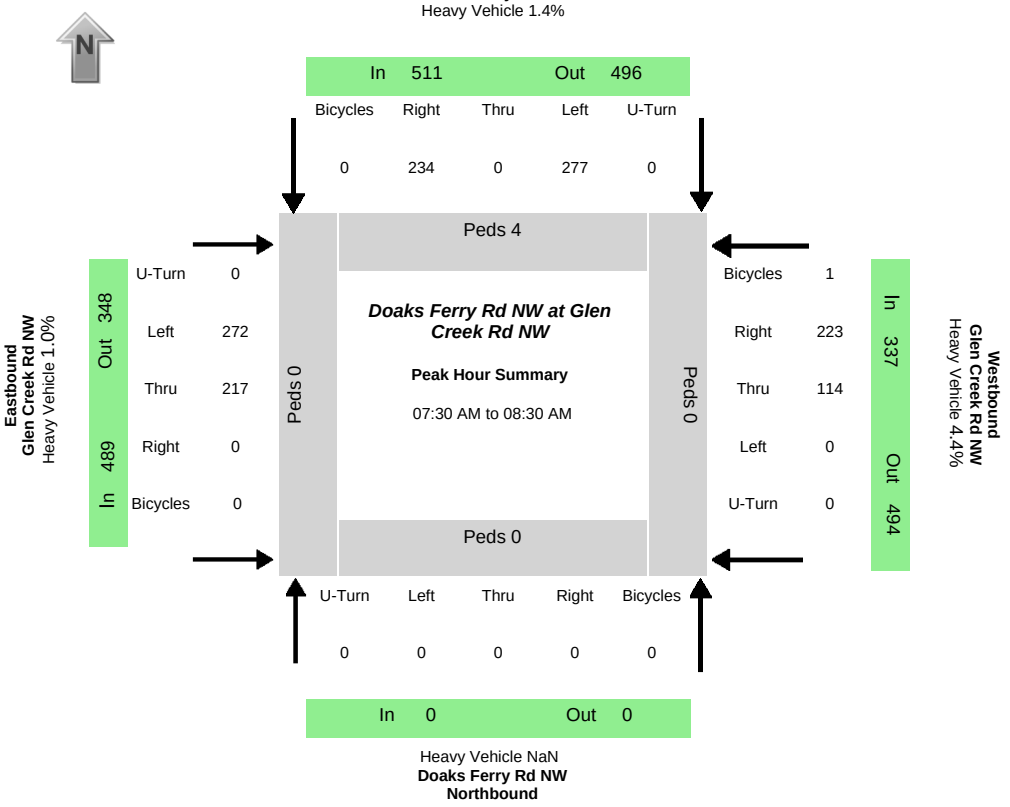
All Vehicle Volumes

	Northbound Wallace Road NW				**Southbound** Wallace Road NW				**Eastbound** Orchard Heights Rd NW				**Westbound**				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
02:00:00 PM	18	68		0		57	1	0	1		18	0						
02:05:00 PM	23	53		0		55	3	0	0		22	0						
02:10:00 PM	22	89		0		57	0	0	1		19	0					507	
02:15:00 PM	27	87		0		45	3	0	1		23	0					530	
02:20:00 PM	27	60		0		62	2	0	3		12	0					540	
02:25:00 PM	35	84		0		56	1	0	0		16	0					544	
02:30:00 PM	18	70		0		56	1	0	0		18	0					521	
02:35:00 PM	28	56		0		84	1	0	1		20	0					545	
02:40:00 PM	26	66		0		57	1	0	2		22	0					527	
02:45:00 PM	43	94		0		55	2	0	1		24	0					583	
02:50:00 PM	29	83		0		57	2	0	4		28	0					596	
02:55:00 PM	26	89		0		55	3	0	0		30	0					625	2203
03:00:00 PM	32	103		0		61	0	0	2		27	0					631	2265
03:05:00 PM	34	79		0		60	0	0	2		20	0					623	2304
03:10:00 PM	22	90		0		91	3	0	2		23	0					651	2347
03:15:00 PM	27	83		0		60	0	0	0		37	0					633	2368
03:20:00 PM	35	85		0		57	3	0	1		29	0					648	2412
03:25:00 PM	34	81		0		70	0	0	0		19	0					621	2424
03:30:00 PM	25	79		0		61	0	0	0		22	0					601	2448
03:35:00 PM	28	112		0		74	3	0	4		40	0					652	2519
03:40:00 PM	19	94		0		85	1	0	1		27	0					675	2572
03:45:00 PM	22	74		0		78	2	0	4		35	0					703	2568
03:50:00 PM	26	105		0		66	1	0	2		30	0					672	2595
03:55:00 PM	33	110		0		75	3	0	0		18	0					684	2631

04:00:00 PM	19	87	0	59	1	0	1	20	0		656	2593
04:05:00 PM	26	94	0	80	1	0	2	23	0		652	2624
04:10:00 PM	23	115	0	77	1	0	1	24	0		654	2634
04:15:00 PM	17	87	0	78	1	0	1	20	0		671	2631
04:20:00 PM	32	87	0	92	0	0	0	17	0		673	2649
04:25:00 PM	40	110	0	87	0	0	1	38	0		708	2721
04:30:00 PM	18	94	0	114	0	0	3	13	0		746	2776
04:35:00 PM	33	96	0	73	1	0	1	21	0		743	2740
04:40:00 PM	29	111	0	112	4	0	0	20	0		743	2789
04:45:00 PM	26	96	0	100	2	0	2	36	0		763	2836
04:50:00 PM	22	122	0	81	1	0	1	23	0		788	2856
04:55:00 PM	33	107	0	89	2	0	1	25	0		769	2874
05:00:00 PM	30	98	0	68	1	0	2	18	0		724	2904
05:05:00 PM	37	71	0	63	2	0	2	21	0		670	2874
05:10:00 PM	36	99	0	73	0	0	0	22	0		643	2863
05:15:00 PM	29	106	0	59	2	0	2	11	0		635	2868
05:20:00 PM	34	98	0	56	0	0	1	12	0		640	2841
05:25:00 PM	38	115	0	56	3	0	1	27	0		650	2805
05:30:00 PM	41	109	0	62	1	0	2	20	0		676	2798
05:35:00 PM	27	120	0	99	1	0	1	26	0		749	2847
05:40:00 PM	31	93	0	79	0	0	0	24	0		736	2798
05:45:00 PM	32	107	0	81	5	0	0	24	0		750	2785
05:50:00 PM	31	99	0	70	2	0	2	19	0		699	2758
05:55:00 PM	26	80	0	57	0	0	1	19	0		655	2684

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Doaks Ferry Rd NW*
E/W street	*Glen Creek Rd NW*
City, State	Salem OR
Site Notes	
Location	44.95208 - -123.08433
Start Date	Thursday, September 16, 2021
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:30:00 AM
Peak 15 Min Start	08:00:00 AM
PHF (15-Min Int)	0.92



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	277	0	234	0	272	217	0	0	0	114	223	0	0	511	489	337	0	495	348	494

Percent Heavy Vehicles

0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	1.3%	0.0%	0.7%	1.4%	0.0%	0.0%	0.0%	7.9%	2.7%	0.0%	NaN	1.4%	1.0%	4.5%	NaN	1.6%	3.4%	1.4%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	Sum
0	4	0	0	4

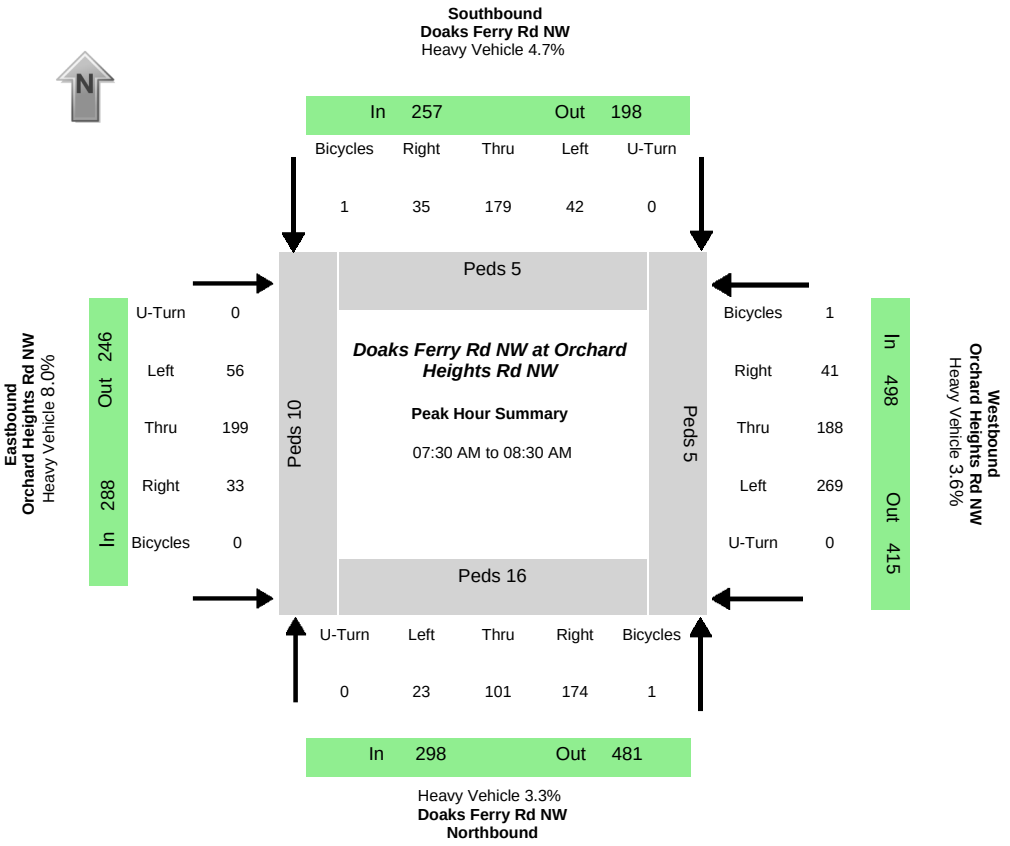
All Vehicle Volumes

	Northbound Doaks Ferry Rd NW				Southbound Doaks Ferry Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
06:00:00 AM	0	0	0	0	2	0	2	0	0	10	0	0	0	3	0	0		
06:05:00 AM	0	0	0	0	1	0	4	0	1	9	0	0	0	3	1	0		
06:10:00 AM	0	0	0	0	3	0	5	0	2	4	0	0	0	3	1	0	54	
06:15:00 AM	0	0	0	0	1	0	4	0	2	12	0	0	0	0	3	0	59	
06:20:00 AM	0	0	0	0	4	0	3	0	3	5	0	0	0	1	3	0	59	
06:25:00 AM	0	0	0	0	1	0	4	0	5	10	0	0	0	0	3	0	64	
06:30:00 AM	0	0	0	0	5	0	5	0	4	12	0	0	0	5	2	0	75	
06:35:00 AM	0	0	0	0	4	0	4	0	3	16	0	0	0	7	1	0	91	
06:40:00 AM	0	0	0	0	5	0	3	0	2	10	0	0	0	6	3	0	97	
06:45:00 AM	0	0	0	0	4	0	7	0	6	11	0	0	0	5	2	0	99	
06:50:00 AM	0	0	0	0	7	0	8	0	6	13	0	0	0	9	1	0	108	
06:55:00 AM	0	0	0	0	3	0	3	0	9	23	0	0	0	8	6	0	131	346
07:00:00 AM	0	0	0	0	2	0	11	0	14	16	0	0	0	8	3	0	150	383
07:05:00 AM	0	0	0	0	13	0	14	0	11	11	0	0	0	6	8	0	169	427
07:10:00 AM	0	0	0	0	11	0	13	0	9	17	0	0	0	5	11	0	183	475
07:15:00 AM	0	0	0	0	9	0	14	0	12	18	0	0	0	9	8	0	199	523
07:20:00 AM	0	0	0	0	11	0	10	0	22	15	0	0	0	9	4	0	207	575
07:25:00 AM	0	0	0	0	8	0	8	0	28	11	0	0	0	6	9	0	211	622
07:30:00 AM	0	0	0	0	10	0	14	0	41	19	0	0	0	6	18	0	249	697
07:35:00 AM	0	0	0	0	13	0	14	0	33	21	0	0	0	7	21	0	287	771
07:40:00 AM	0	0	0	0	20	0	20	0	44	15	0	0	0	6	22	0	344	869
07:45:00 AM	0	0	0	0	25	0	37	0	14	18	0	0	0	5	9	0	344	942
07:50:00 AM	0	0	0	0	15	0	32	0	20	17	0	0	0	15	16	0	350	1013
07:55:00 AM	0	0	0	0	22	0	21	0	18	14	0	0	0	16	17	0	331	1069

08:00:00 AM	0	0	0	0	22	0	20	0	22	16	0	0	0	13	20	0	336	1128
08:05:00 AM	0	0	0	0	35	0	11	0	30	17	0	0	0	7	24	0	345	1189
08:10:00 AM	0	0	0	0	27	0	20	0	23	13	0	0	0	16	29	0	365	1251
08:15:00 AM	0	0	0	0	32	0	16	0	10	20	0	0	0	8	26	0	364	1293
08:20:00 AM	0	0	0	0	22	0	14	0	9	22	0	0	0	14	13	0	334	1316
08:25:00 AM	0	0	0	0	34	0	15	0	8	25	0	0	0	1	8	0	297	1337
08:30:00 AM	0	0	0	0	27	0	11	0	6	22	0	0	0	11	5	0	267	1311
08:35:00 AM	0	0	0	0	14	0	7	0	11	16	0	0	0	10	7	0	238	1267
08:40:00 AM	0	0	0	0	9	0	5	0	10	15	0	0	0	12	13	0	211	1204
08:45:00 AM	0	0	0	0	11	0	7	0	10	20	0	0	0	15	12	0	204	1171
08:50:00 AM	0	0	0	0	14	0	8	0	9	15	0	0	0	11	5	0	201	1118
08:55:00 AM	0	0	0	0	14	0	6	0	5	16	0	0	0	8	7	0	193	1066

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Doaks Ferry Rd NW*
E/W street	*Orchard Heights Rd NW*
City, State	Salem OR
Site Notes	
Location	44.96044 - -123.07966
Start Date	Thursday, September 16, 2021
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:30:00 AM
Peak 15 Min Start	08:05:00 AM
PHF (15-Min Int)	0.87



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
23	101	174	0	42	179	35	0	56	199	33	0	269	188	41	0	298	256	288	498	481	198	246	415

Percent Heavy Vehicles

8.7%	5.9%	1.1%	0.0%	11.9%	0.6%	17.1%	0.0%	10.7%	6.0%	15.2%	0.0%	3.0%	5.3%	0.0%	0.0%	3.4%	4.7%	8.0%	3.6%	2.9%	6.1%	7.3%	4.6%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum
0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	3

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	Sum
16	5	10	5	36

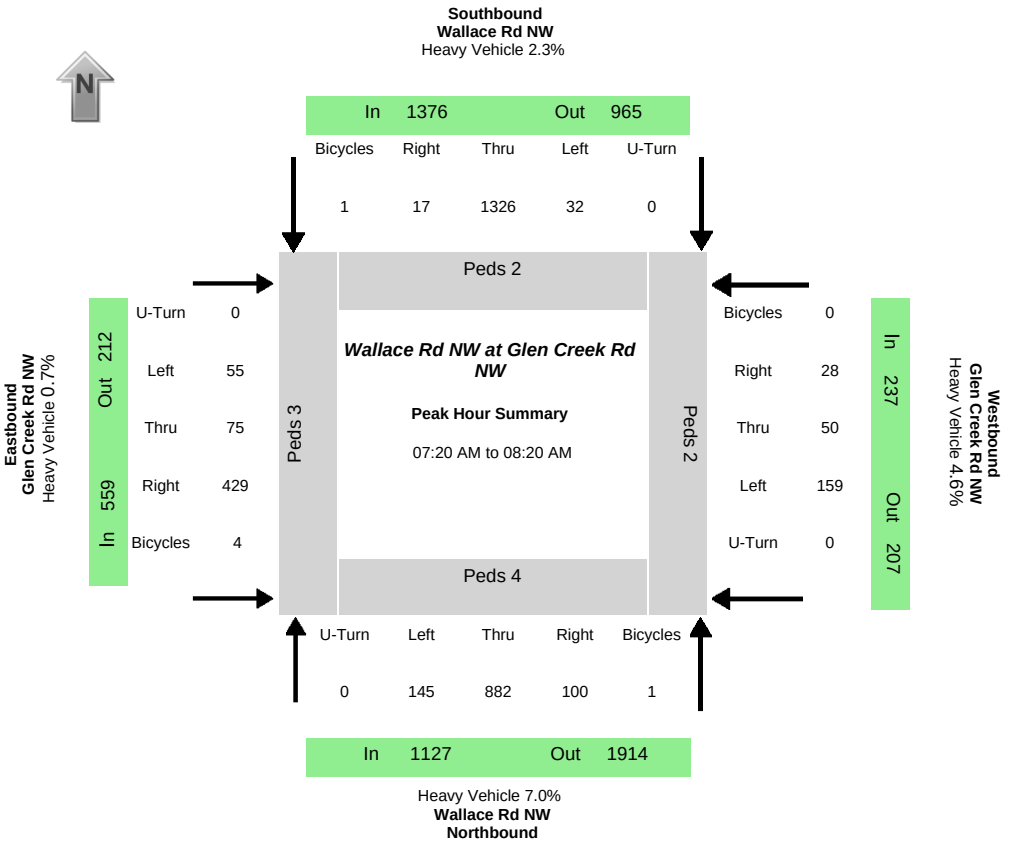
All Vehicle Volumes

	Northbound Doaks Ferry Rd NW				Southbound Doaks Ferry Rd NW				Eastbound Orchard Heights Rd NW				Westbound Orchard Heights Rd NW				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
06:00:00 AM	0	1	0	0	1	1	0	0	1	1	0	0	2	0	0	0		
06:05:00 AM	0	2	0	0	0	0	0	0	1	3	1	0	4	1	1	0		
06:10:00 AM	0	5	0	0	0	4	0	0	0	3	1	0	1	3	0	0	37	
06:15:00 AM	0	2	1	0	2	5	0	0	0	2	0	0	1	2	0	0	45	
06:20:00 AM	0	9	0	0	0	3	0	0	2	1	0	0	2	3	3	0	55	
06:25:00 AM	0	1	1	0	1	2	0	0	0	3	0	0	1	0	1	0	48	
06:30:00 AM	0	4	2	0	1	2	1	0	0	1	2	0	2	2	1	0	51	
06:35:00 AM	0	2	2	0	2	4	1	0	0	3	0	0	1	4	0	0	47	
06:40:00 AM	0	2	1	0	3	4	0	0	0	6	0	0	2	0	0	0	55	
06:45:00 AM	0	4	2	0	1	3	1	0	1	10	1	0	5	4	2	0	71	
06:50:00 AM	0	8	1	0	1	3	0	0	1	4	1	0	7	6	3	0	87	
06:55:00 AM	0	5	3	0	2	3	3	0	1	7	2	0	2	5	1	0	103	243
07:00:00 AM	0	3	9	0	3	9	0	0	2	13	0	0	5	5	4	0	122	289
07:05:00 AM	1	6	9	0	1	7	2	0	2	6	1	0	7	3	3	0	135	324
07:10:00 AM	0	4	13	0	6	8	0	0	2	7	1	0	14	3	3	0	162	368
07:15:00 AM	0	11	9	0	3	9	0	0	1	15	0	0	11	3	3	0	174	418
07:20:00 AM	0	4	7	0	3	5	0	0	2	6	3	0	12	8	4	0	180	449
07:25:00 AM	0	7	16	0	4	6	0	0	0	7	3	0	11	5	4	0	182	502
07:30:00 AM	0	10	24	0	2	11	0	0	3	20	0	0	11	6	4	0	208	575
07:35:00 AM	1	17	25	0	3	11	2	0	7	13	4	0	20	18	4	0	279	681
07:40:00 AM	3	11	27	0	4	6	2	0	2	24	2	0	28	12	6	0	343	790
07:45:00 AM	1	10	28	0	5	7	2	0	7	12	1	0	35	21	4	0	385	889
07:50:00 AM	0	9	11	0	3	12	0	0	2	10	0	0	30	18	5	0	360	954
07:55:00 AM	1	4	11	0	4	11	4	0	2	7	2	0	23	17	2	0	321	1008

08:00:00 AM	0	9	17	0	10	8	1	0	3	14	2	0	10	9	4	0	275	1042
08:05:00 AM	1	4	6	0	4	19	4	0	4	17	4	0	23	27	4	0	292	1111
08:10:00 AM	2	10	9	0	4	22	7	0	5	18	5	0	33	15	1	0	335	1181
08:15:00 AM	6	5	8	0	1	29	3	0	10	27	6	0	21	20	3	0	387	1255
08:20:00 AM	5	5	6	0	2	32	5	0	4	13	4	0	21	14	1	0	382	1313
08:25:00 AM	3	7	2	0	0	11	5	0	7	24	3	0	14	11	3	0	341	1340
08:30:00 AM	2	8	7	0	1	6	1	0	1	11	2	0	5	4	1	0	251	1298
08:35:00 AM	3	6	5	0	1	4	1	0	3	7	2	0	2	1	3	0	177	1211
08:40:00 AM	2	10	3	0	4	3	0	0	3	11	1	0	7	8	3	0	142	1139
08:45:00 AM	0	16	2	0	4	8	1	0	5	9	1	0	4	2	4	0	149	1062
08:50:00 AM	0	3	5	0	7	5	1	0	3	7	2	0	8	7	5	0	164	1015
08:55:00 AM	0	6	10	0	4	14	0	0	1	9	3	0	4	5	9	0	174	992

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Wallace Rd NW*
E/W street	*Glen Creek Rd NW*
City, State	Salem OR
Site Notes	
Location	44.95009 - -123.05165
Start Date	Thursday, September 16, 2021
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:20:00 AM
Peak 15 Min Start	07:40:00 AM
PHF (15-Min Int)	0.94



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
145	882	100	0	32	1326	17	0	55	75	429	0	159	50	28	0	1127	1375	559	237	1914	965	212	207

Percent Heavy Vehicles

7.6%	6.9%	7.0%	0.0%	3.1%	2.3%	0.0%	0.0%	0.0%	1.3%	0.7%	0.0%	4.4%	6.0%	3.6%	0.0%	7.0%	2.3%	0.7%	4.6%	2.1%	6.4%	6.6%	4.3%

PHV- Bicycles																	PHV - Pedestrians				
Northbound				Southbound				Eastbound				Westbound					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	1	0	0	1	0	0	0	3	1	0	0	0	0	0	6	4	2	3	2	11

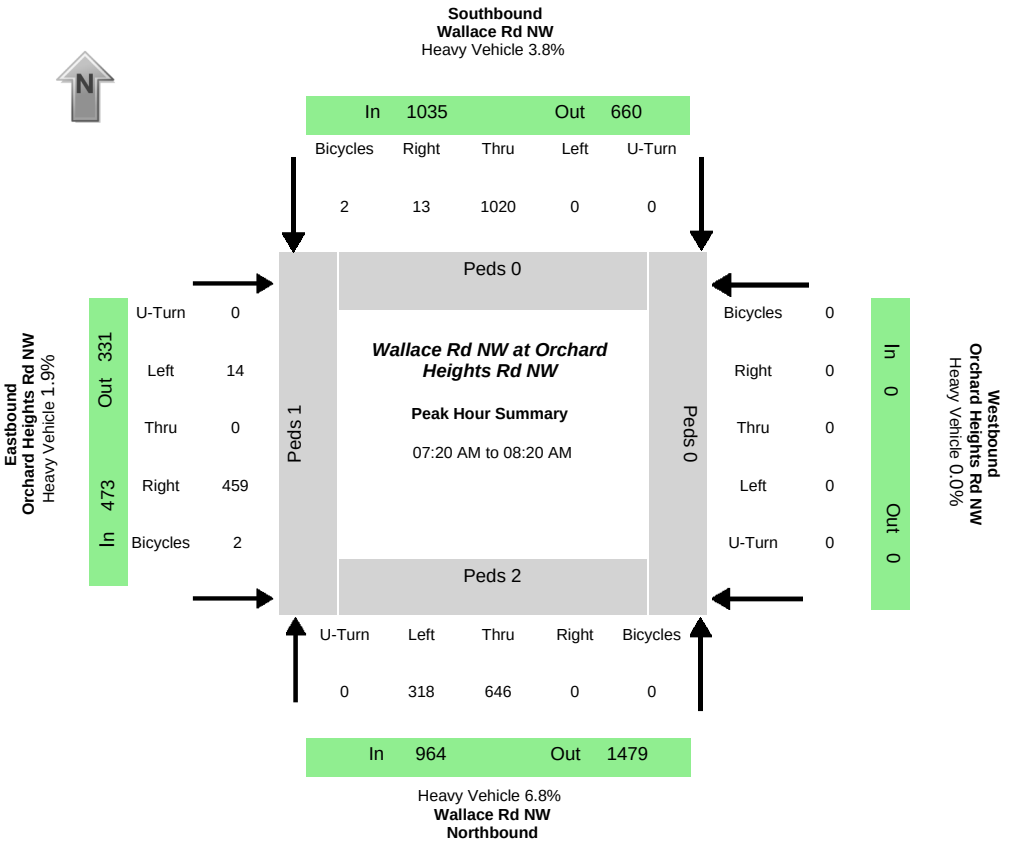
All Vehicle Volumes

	Northbound Wallace Rd NW				Southbound Wallace Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
06:00:00 AM	2	54	3	0	3	41	0	0	2	1	19	0	4	1	0	0		
06:05:00 AM	0	51	2	0	1	38	1	0	4	1	17	1	2	1	2	0		
06:10:00 AM	3	48	1	0	0	51	0	0	2	1	18	0	5	2	3	0	385	
06:15:00 AM	2	50	0	0	0	56	0	0	2	2	23	0	6	2	5	0	403	
06:20:00 AM	4	52	3	0	2	58	0	0	1	6	20	0	7	1	1	0	437	
06:25:00 AM	2	50	0	0	0	68	1	0	1	8	17	0	7	5	1	0	463	
06:30:00 AM	4	47	2	0	0	67	0	0	2	3	23	0	5	6	1	0	475	
06:35:00 AM	4	52	3	0	0	101	0	0	3	3	18	0	11	3	2	0	520	
06:40:00 AM	3	50	2	0	2	83	0	0	3	1	34	0	10	3	1	0	552	
06:45:00 AM	6	51	3	0	1	78	1	0	7	5	38	0	9	2	4	0	597	
06:50:00 AM	4	79	9	0	0	97	1	0	2	2	17	0	16	6	1	0	631	
06:55:00 AM	5	47	4	0	1	83	1	0	2	8	27	0	6	5	1	0	629	2029
07:00:00 AM	5	55	4	0	1	103	0	0	5	4	37	0	8	2	1	0	649	2124
07:05:00 AM	9	44	3	0	0	115	1	0	4	2	25	0	13	4	0	0	635	2223
07:10:00 AM	4	54	9	0	0	105	2	0	0	3	27	0	3	7	5	0	664	2308
07:15:00 AM	11	64	7	0	1	108	2	0	1	4	45	0	18	2	2	0	704	2425
07:20:00 AM	8	63	10	0	1	99	0	0	2	5	34	0	10	4	1	0	721	2507
07:25:00 AM	7	90	9	0	1	106	3	0	6	2	32	0	9	5	2	0	774	2619
07:30:00 AM	10	73	9	0	2	116	1	0	3	6	34	0	10	5	2	0	780	2730
07:35:00 AM	7	66	5	0	2	116	2	0	5	5	38	0	17	9	3	0	818	2805
07:40:00 AM	9	89	8	0	2	118	0	0	8	9	26	0	18	0	3	0	836	2903
07:45:00 AM	14	65	8	0	3	137	1	0	3	7	41	0	12	5	3	0	864	2997
07:50:00 AM	22	63	3	0	2	107	0	0	7	10	47	0	16	4	3	0	873	3047
07:55:00 AM	11	68	12	0	5	100	3	0	6	4	34	0	14	2	1	0	843	3117

08:00:00 AM	15	91	9	0	5	125	3	0	1	4	31	0	15	5	2	0	850	3198
08:05:00 AM	18	60	6	0	4	95	3	0	2	4	32	0	13	5	2	0	810	3222
08:10:00 AM	14	67	14	0	4	96	1	0	9	12	48	0	10	2	2	0	829	3282
08:15:00 AM	10	87	7	0	1	111	0	0	3	7	32	0	15	4	4	0	804	3298
08:20:00 AM	14	64	5	0	1	68	2	0	4	3	48	0	11	4	2	0	786	3287
08:25:00 AM	13	74	6	0	5	77	0	0	4	7	34	0	14	7	4	0	752	3260
08:30:00 AM	5	78	8	0	5	82	1	0	6	12	38	0	9	5	4	0	724	3242
08:35:00 AM	11	71	10	0	2	92	1	0	1	9	42	0	25	8	3	0	773	3242
08:40:00 AM	18	58	13	0	3	79	1	0	2	10	43	0	19	6	1	0	781	3205
08:45:00 AM	17	74	7	0	3	84	0	0	5	9	38	0	22	6	7	0	800	3178
08:50:00 AM	14	78	13	0	5	85	0	0	6	16	31	0	16	2	2	0	793	3162
08:55:00 AM	11	72	7	0	3	111	1	0	4	3	26	0	20	8	3	0	809	3171

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Wallace Rd NW*
E/W street	*Orchard Heights Rd NW*
City, State	Salem OR
Site Notes	
Location	44.95334 - -123.05251
Start Date	Thursday, September 16, 2021
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:20:00 AM
Peak 15 Min Start	07:30:00 AM
PHF (15-Min Int)	0.88



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
318	646	0	0	0	1020	13	0	14	0	459	0	0	0	0	0	964	1033	473	0	1479	660	331	0

Percent Heavy Vehicles

2.5%	9.0%	0.0%	0.0%	0.0%	3.5%	23.1%	0.0%	7.1%	0.0%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	6.8%	3.8%	1.9%	0.0%	3.0%	8.9%	3.3%	0.0%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum
0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	4

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	Sum
2	0	1	0	3

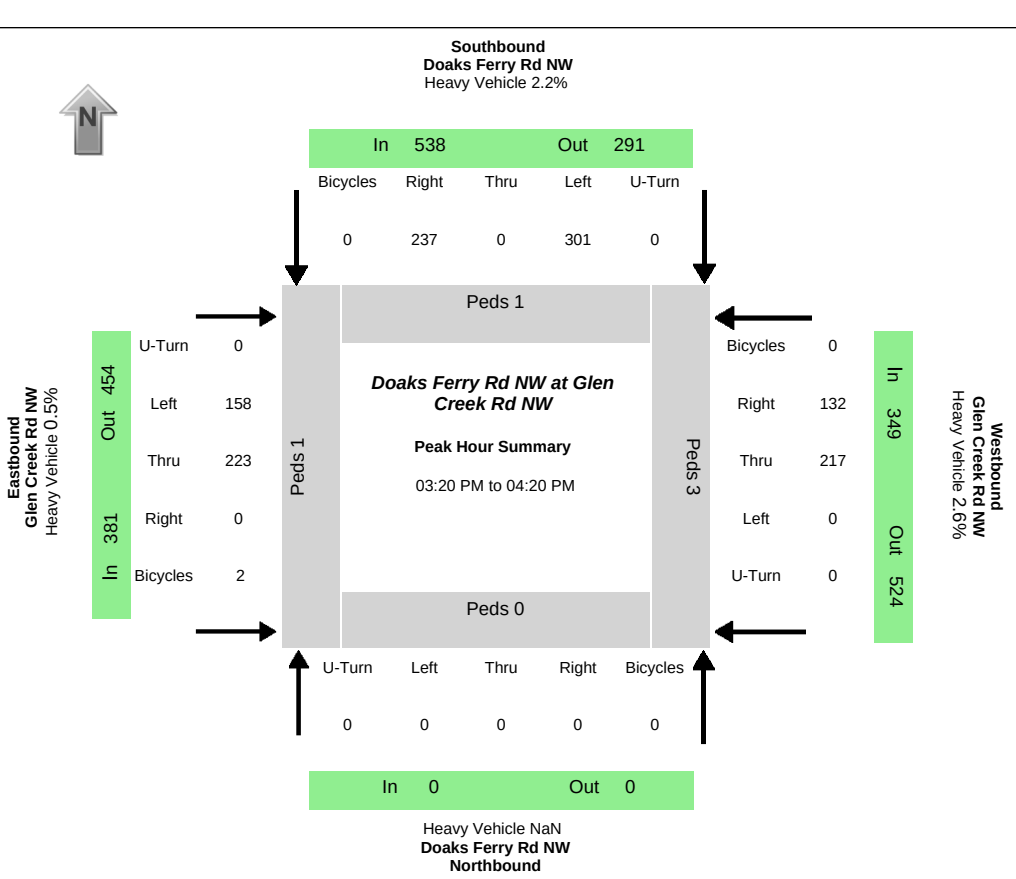
All Vehicle Volumes

	Northbound Wallace Rd NW				Southbound Wallace Rd NW				Eastbound Orchard Heights Rd NW				Westbound Orchard Heights Rd NW				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
06:00:00 AM	2	43	0	0	0	27	0	0	0	0	8	0	0	0	0	0		
06:05:00 AM	7	43	0	0	0	37	0	0	0	0	6	0	0	0	0	0		
06:10:00 AM	5	48	0	0	0	42	0	0	0	0	12	0	0	0	0	0	280	
06:15:00 AM	7	58	0	0	0	61	1	0	1	0	9	0	0	0	0	0	337	
06:20:00 AM	4	35	0	0	0	41	0	0	1	0	14	0	0	0	0	0	339	
06:25:00 AM	3	57	0	0	0	58	1	0	1	0	23	0	0	0	0	0	375	
06:30:00 AM	6	44	0	0	0	63	1	0	3	0	17	0	0	0	0	0	372	
06:35:00 AM	5	48	0	0	0	77	0	0	0	0	18	0	0	0	0	0	425	
06:40:00 AM	6	42	0	0	0	79	1	0	1	0	29	0	0	0	0	0	440	
06:45:00 AM	11	58	0	0	0	68	0	0	1	0	24	0	0	0	0	0	468	
06:50:00 AM	13	53	0	0	0	68	1	0	1	0	24	0	0	0	0	0	480	
06:55:00 AM	12	40	0	0	0	75	0	0	1	0	30	0	0	0	0	0	480	1575
07:00:00 AM	16	35	0	0	0	85	1	0	0	0	35	0	0	0	0	0	490	1667
07:05:00 AM	11	46	0	0	0	101	1	0	1	0	25	0	0	0	0	0	515	1759
07:10:00 AM	14	44	0	0	0	78	1	0	1	0	27	0	0	0	0	0	522	1817
07:15:00 AM	19	43	0	0	0	81	1	0	0	0	31	0	0	0	0	0	525	1855
07:20:00 AM	15	63	0	0	0	75	2	0	0	0	34	0	0	0	0	0	529	1949
07:25:00 AM	29	54	0	0	0	84	0	0	1	0	21	0	0	0	0	0	553	1995
07:30:00 AM	37	49	0	0	0	88	1	0	0	0	55	0	0	0	0	0	608	2091
07:35:00 AM	28	63	0	0	0	104	1	0	0	0	41	0	0	0	0	0	656	2180
07:40:00 AM	26	65	0	0	0	103	2	0	1	0	37	0	0	0	0	0	701	2256
07:45:00 AM	21	48	0	0	0	93	0	0	2	0	58	0	0	0	0	0	693	2316
07:50:00 AM	24	48	0	0	0	97	0	0	0	0	32	0	0	0	0	0	657	2357
07:55:00 AM	21	53	0	0	0	83	3	0	2	0	38	0	0	0	0	0	623	2399

08:00:00 AM	35	52	0	0	0	86	2	0	2	0	45	0	0	0	0	0	623	2449
08:05:00 AM	21	41	0	0	0	68	0	0	3	0	19	0	0	0	0	0	574	2416
08:10:00 AM	30	58	0	0	0	77	0	0	1	0	40	0	0	0	0	0	580	2457
08:15:00 AM	31	52	0	0	0	62	2	0	2	0	39	0	0	0	0	0	546	2470
08:20:00 AM	20	39	0	0	0	60	3	0	2	0	31	0	0	0	0	0	549	2436
08:25:00 AM	15	78	0	0	0	66	0	0	1	0	35	0	0	0	0	0	538	2442
08:30:00 AM	18	64	0	0	0	52	1	0	5	0	30	0	0	0	0	0	520	2382
08:35:00 AM	13	54	0	0	0	47	1	0	3	0	34	0	0	0	0	0	517	2297
08:40:00 AM	12	59	0	0	0	86	0	0	0	0	31	0	0	0	0	0	510	2251
08:45:00 AM	22	52	0	0	0	78	4	0	1	0	32	0	0	0	0	0	529	2218
08:50:00 AM	22	56	0	0	0	95	2	0	1	0	32	0	0	0	0	0	585	2225
08:55:00 AM	27	62	0	0	0	64	1	0	2	0	25	0	0	0	0	0	578	2206

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Doaks Ferry Rd NW*
E/W street	*Glen Creek Rd NW*
City, State	Salem OR
Site Notes	
Location	44.95208 - -123.08433
Start Date	Thursday, September 16, 2021
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	03:20:00 PM
Peak 15 Min Start	03:30:00 PM
PHF (15-Min Int)	0.91



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	301	0	237	0	158	223	0	0	0	217	132	0	0	538	381	349	0	290	454	524

Percent Heavy Vehicles

0.0%	0.0%	0.0%	0.0%	2.3%	0.0%	2.1%	0.0%	0.0%	0.9%	0.0%	0.0%	0.0%	2.8%	2.3%	0.0%	NaN	2.2%	0.5%	2.6%	NaN	1.0%	2.4%	1.7%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	**Sum**
0	1	1	3	5

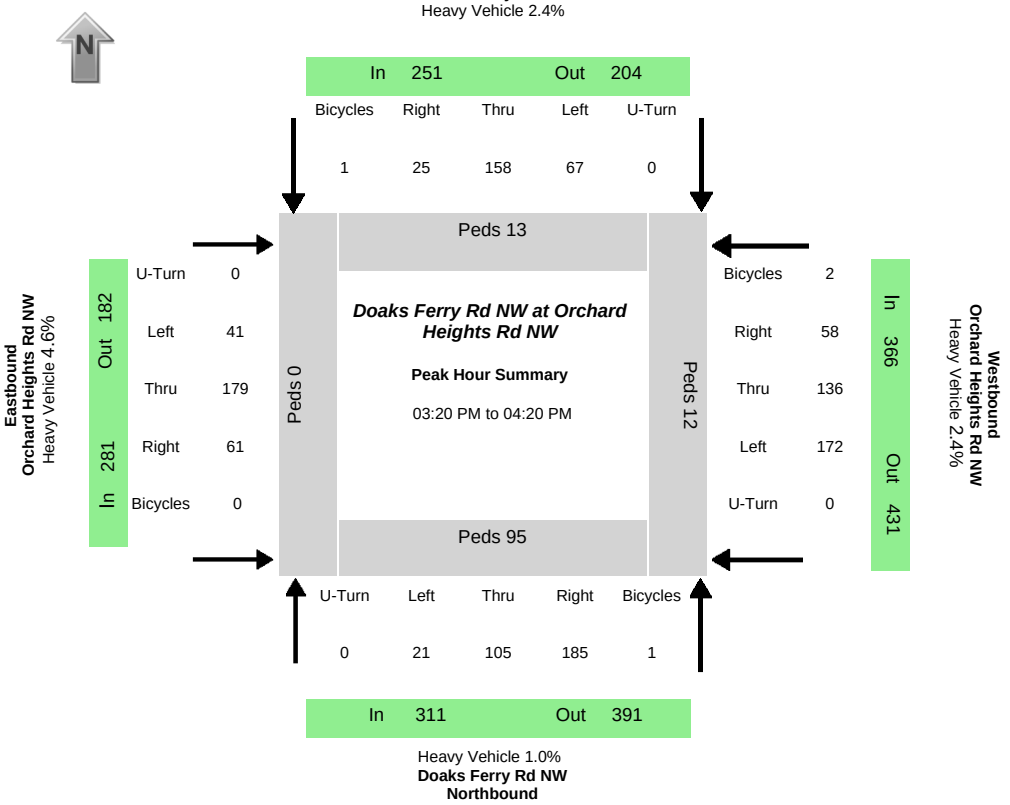
All Vehicle Volumes

	Northbound Doaks Ferry Rd NW				Southbound Doaks Ferry Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
02:00:00 PM	0	0	0	0	6	0	8	0	9	14	0	0	0	10	13	0		
02:05:00 PM	0	0	0	0	5	0	4	0	20	15	0	0	0	15	15	0		
02:10:00 PM	0	0	0	0	9	0	3	0	17	16	0	0	0	16	9	0	204	
02:15:00 PM	0	0	0	0	11	0	6	0	13	9	0	0	0	14	9	0	206	
02:20:00 PM	0	0	0	0	7	0	11	0	14	11	0	0	0	11	6	0	192	
02:25:00 PM	0	0	0	0	19	0	23	0	4	11	0	0	0	9	10	0	198	
02:30:00 PM	0	0	0	0	21	0	30	0	10	12	0	0	0	12	13	0	234	
02:35:00 PM	0	0	0	0	15	0	15	0	5	13	0	0	0	16	10	0	248	
02:40:00 PM	0	0	0	0	11	0	12	0	8	18	0	0	0	11	6	0	238	
02:45:00 PM	0	0	0	0	16	0	8	0	13	10	0	0	0	14	7	0	208	
02:50:00 PM	0	0	0	0	7	0	8	0	16	12	0	0	0	14	15	0	206	
02:55:00 PM	0	0	0	0	4	0	10	0	10	9	0	0	0	9	16	0	198	838
03:00:00 PM	0	0	0	0	7	0	5	0	9	14	0	0	0	12	13	0	190	838
03:05:00 PM	0	0	0	0	6	0	13	0	15	13	0	0	0	23	18	0	206	852
03:10:00 PM	0	0	0	0	10	0	10	0	15	5	0	0	0	18	21	0	227	861
03:15:00 PM	0	0	0	0	13	0	6	0	14	19	0	0	0	13	13	0	245	877
03:20:00 PM	0	0	0	0	26	0	10	0	10	22	0	0	0	15	7	0	247	907
03:25:00 PM	0	0	0	0	24	0	26	0	12	14	0	0	0	22	10	0	276	939
03:30:00 PM	0	0	0	0	39	0	17	0	17	19	0	0	0	18	8	0	316	959
03:35:00 PM	0	0	0	0	32	0	16	0	15	19	0	0	0	18	10	0	336	995
03:40:00 PM	0	0	0	0	33	0	34	0	16	15	0	0	0	16	8	0	350	1051
03:45:00 PM	0	0	0	0	29	0	20	0	10	25	0	0	0	18	13	0	347	1098
03:50:00 PM	0	0	0	0	12	0	18	0	16	18	0	0	0	19	21	0	341	1130
03:55:00 PM	0	0	0	0	15	0	11	0	12	17	0	0	0	11	15	0	300	1153

04:00:00 PM	0	0	0	0	16	0	11	0	11	23	0	0	0	16	17	0	279	1187
04:05:00 PM	0	0	0	0	23	0	32	0	12	11	0	0	0	28	4	0	285	1209
04:10:00 PM	0	0	0	0	28	0	25	0	11	22	0	0	0	17	8	0	315	1241
04:15:00 PM	0	0	0	0	24	0	17	0	16	18	0	0	0	19	11	0	326	1268
04:20:00 PM	0	0	0	0	16	0	13	0	10	19	0	0	0	21	10	0	305	1267
04:25:00 PM	0	0	0	0	15	0	11	0	11	9	0	0	0	17	14	0	271	1236
04:30:00 PM	0	0	0	0	13	0	5	0	8	20	0	0	0	15	13	0	240	1192
04:35:00 PM	0	0	0	0	16	0	11	0	8	19	0	0	0	20	13	0	238	1169
04:40:00 PM	0	0	0	0	16	0	11	0	10	14	0	0	0	16	13	0	241	1127
04:45:00 PM	0	0	0	0	21	0	17	0	13	21	0	0	0	22	7	0	268	1113
04:50:00 PM	0	0	0	0	11	0	8	0	14	15	0	0	0	19	9	0	257	1085
04:55:00 PM	0	0	0	0	12	0	6	0	15	17	0	0	0	12	6	0	245	1072
05:00:00 PM	0	0	0	0	7	0	11	0	14	18	0	0	0	25	8	0	227	1061
05:05:00 PM	0	0	0	0	14	0	12	0	9	18	0	0	0	17	10	0	231	1031
05:10:00 PM	0	0	0	0	12	0	10	0	11	9	0	0	0	24	9	0	238	995
05:15:00 PM	0	0	0	0	20	0	7	0	14	9	0	0	0	14	8	0	227	962
05:20:00 PM	0	0	0	0	12	0	8	0	19	11	0	0	0	17	22	0	236	962
05:25:00 PM	0	0	0	0	11	0	8	0	16	18	0	0	0	15	13	0	242	966
05:30:00 PM	0	0	0	0	12	0	8	0	14	12	0	0	0	14	18	0	248	970
05:35:00 PM	0	0	0	0	20	0	6	0	10	10	0	0	0	16	21	0	242	966
05:40:00 PM	0	0	0	0	9	0	9	0	19	13	0	0	0	9	23	0	243	968
05:45:00 PM	0	0	0	0	17	0	11	0	20	8	0	0	0	22	13	0	256	958
05:50:00 PM	0	0	0	0	14	0	7	0	25	10	0	0	0	10	11	0	250	959
05:55:00 PM	0	0	0	0	8	0	12	0	15	20	0	0	0	30	21	0	274	997

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Doaks Ferry Rd NW*
E/W street	*Orchard Heights Rd NW*
City, State	Salem OR
Site Notes	
Location	44.96044 - -123.07966
Start Date	Thursday, September 16, 2021
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	03:20:00 PM
Peak 15 Min Start	03:30:00 PM
PHF (15-Min Int)	0.88



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
21	105	185	0	67	158	25	0	41	179	61	0	172	136	58	0	311	250	281	366	391	204	182	431

Percent Heavy Vehicles

0.0%	1.0%	1.1%	0.0%	6.0%	0.6%	4.0%	0.0%	7.3%	3.4%	6.6%	0.0%	1.7%	4.4%	0.0%	0.0%	1.0%	2.4%	4.6%	2.5%	2.0%	2.0%	3.8%	2.8%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	4

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	**Sum**
95	13	0	12	120

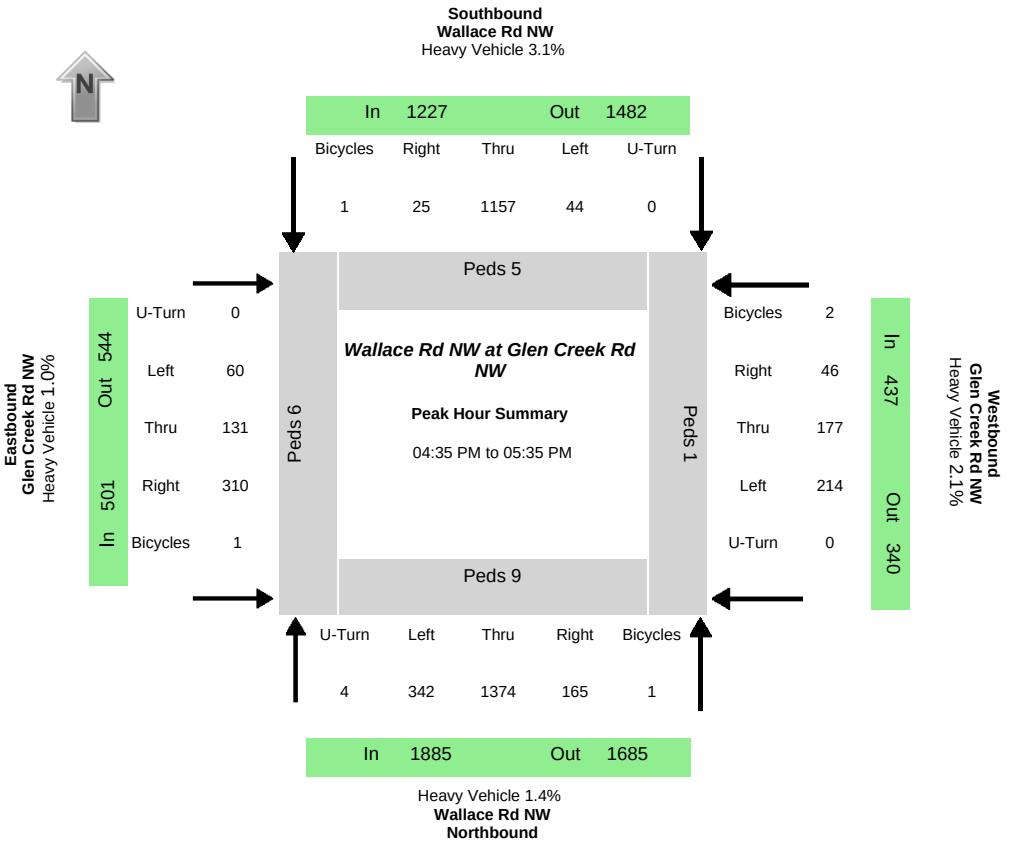
All Vehicle Volumes

	Northbound Doaks Ferry Rd NW				Southbound Doaks Ferry Rd NW				Eastbound Orchard Heights Rd NW				Westbound Orchard Heights Rd NW				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
02:00:00 PM	1	6	10	0	1	5	0	0	0	9	2	0	4	4	1	0		
02:05:00 PM	0	6	12	0	1	5	0	0	1	10	1	0	4	5	1	0		
02:10:00 PM	1	5	9	0	2	6	1	0	2	12	0	0	3	10	5	0	145	
02:15:00 PM	1	10	17	0	3	3	2	0	2	11	6	0	3	3	0	0	163	
02:20:00 PM	0	6	6	0	4	8	0	0	3	7	1	0	4	4	4	0	164	
02:25:00 PM	1	7	9	0	1	3	0	0	1	5	1	0	26	13	5	0	180	
02:30:00 PM	0	11	8	0	3	4	1	0	3	3	1	0	32	17	1	0	203	
02:35:00 PM	2	6	6	0	3	4	0	0	0	9	0	0	23	7	6	0	222	
02:40:00 PM	1	8	5	0	4	8	2	0	2	5	3	0	13	7	3	0	211	
02:45:00 PM	1	6	2	0	1	8	1	0	3	10	1	0	12	3	2	0	177	
02:50:00 PM	1	6	13	0	3	7	2	0	1	8	1	0	5	9	4	0	171	
02:55:00 PM	1	8	6	0	2	3	1	0	1	7	2	0	10	10	1	0	162	698
03:00:00 PM	2	11	3	0	3	5	3	0	2	6	0	0	3	17	3	0	170	713
03:05:00 PM	4	8	4	0	1	8	0	0	1	10	3	0	15	7	2	0	173	730
03:10:00 PM	1	10	11	0	0	8	4	0	2	10	2	0	11	22	3	0	205	758
03:15:00 PM	5	10	6	0	5	19	3	0	1	2	0	0	13	14	0	0	225	775
03:20:00 PM	3	6	10	0	4	15	1	0	4	12	3	0	8	21	2	0	251	817
03:25:00 PM	0	5	6	0	3	26	4	0	6	25	11	0	11	12	3	0	279	857
03:30:00 PM	0	6	12	0	5	14	3	0	8	25	11	0	6	8	3	0	302	874
03:35:00 PM	6	16	18	0	4	10	1	0	8	19	9	0	9	12	7	0	332	927
03:40:00 PM	1	17	30	0	4	15	3	0	5	19	10	0	12	6	2	0	344	990
03:45:00 PM	1	5	23	0	5	10	1	0	1	19	3	0	19	8	1	0	339	1036
03:50:00 PM	2	9	16	0	10	7	2	0	0	8	4	0	12	6	2	0	298	1054
03:55:00 PM	3	7	22	0	13	9	5	0	1	14	2	0	9	9	3	0	271	1099

04:00:00 PM	2	14	10	0	7	10	1	0	4	10	0	0	12	4	5	0	254	1120
04:05:00 PM	2	3	13	0	6	19	1	0	2	13	4	0	22	17	9	0	287	1168
04:10:00 PM	0	9	9	0	2	15	3	0	1	12	1	0	29	23	15	0	309	1203
04:15:00 PM	1	8	16	0	4	8	0	0	1	3	3	0	23	10	6	0	313	1208
04:20:00 PM	2	12	8	0	4	8	3	0	0	5	2	0	13	7	6	0	272	1189
04:25:00 PM	0	13	4	0	5	14	1	0	1	4	0	0	6	7	2	0	210	1134
04:30:00 PM	1	8	3	0	5	7	2	0	5	8	1	0	4	6	3	0	180	1086
04:35:00 PM	4	8	8	0	2	15	2	0	2	4	1	0	8	9	3	0	176	1033
04:40:00 PM	0	8	5	0	3	11	1	0	2	8	2	0	4	9	4	0	176	966
04:45:00 PM	1	9	4	0	6	21	1	0	2	4	0	0	5	9	1	0	186	933
04:50:00 PM	2	10	4	0	1	9	1	0	8	4	3	0	7	9	4	0	182	917
04:55:00 PM	2	13	6	0	4	5	3	0	1	7	3	0	5	10	1	0	185	880
05:00:00 PM	0	8	2	0	3	10	4	0	2	6	0	0	5	13	1	0	176	855
05:05:00 PM	1	12	5	0	1	16	2	0	1	6	2	0	4	5	0	0	169	799
05:10:00 PM	0	8	6	0	0	10	3	0	1	18	0	0	9	9	3	0	176	747
05:15:00 PM	3	9	3	0	3	17	1	0	1	5	1	0	6	10	5	0	186	728
05:20:00 PM	1	17	9	0	6	9	1	0	4	4	2	0	6	14	5	0	209	736
05:25:00 PM	0	14	12	0	2	7	3	0	1	2	2	0	8	10	2	0	205	742
05:30:00 PM	1	13	6	0	4	10	2	0	2	4	0	0	4	10	1	0	198	746
05:35:00 PM	1	12	4	0	3	18	4	0	2	7	1	0	3	13	8	0	196	756
05:40:00 PM	2	9	4	0	5	12	0	0	1	10	1	0	10	12	1	0	200	766
05:45:00 PM	1	8	8	0	5	18	3	0	2	8	1	0	6	15	2	0	220	780
05:50:00 PM	2	17	12	0	5	11	9	0	0	6	2	0	7	22	4	0	241	815
05:55:00 PM	1	9	7	0	3	10	3	0	4	4	2	0	4	15	4	0	240	821

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Wallace Rd NW*
E/W street	*Glen Creek Rd NW*
City, State	Salem OR
Site Notes	
Location	44.95009 - -123.05165
Start Date	Thursday, September 16, 2021
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:35:00 PM
Peak 15 Min Start	04:35:00 PM
PHF (15-Min Int)	0.98



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
342	1374	165	4	44	1157	25	0	60	131	310	0	214	177	46	0	1885	1226	501	437	1685	1480	544	340

Percent Heavy Vehicles

1.2%	1.5%	1.2%	0.0%	0.0%	3.3%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	2.8%	1.1%	2.2%	0.0%	1.4%	3.1%	1.0%	2.1%	2.9%	1.4%	1.1%	0.6%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	1	0	0	0	1	0	0	0	1	0	0	0	1	1	0	5

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	**Sum**
9	5	6	1	21

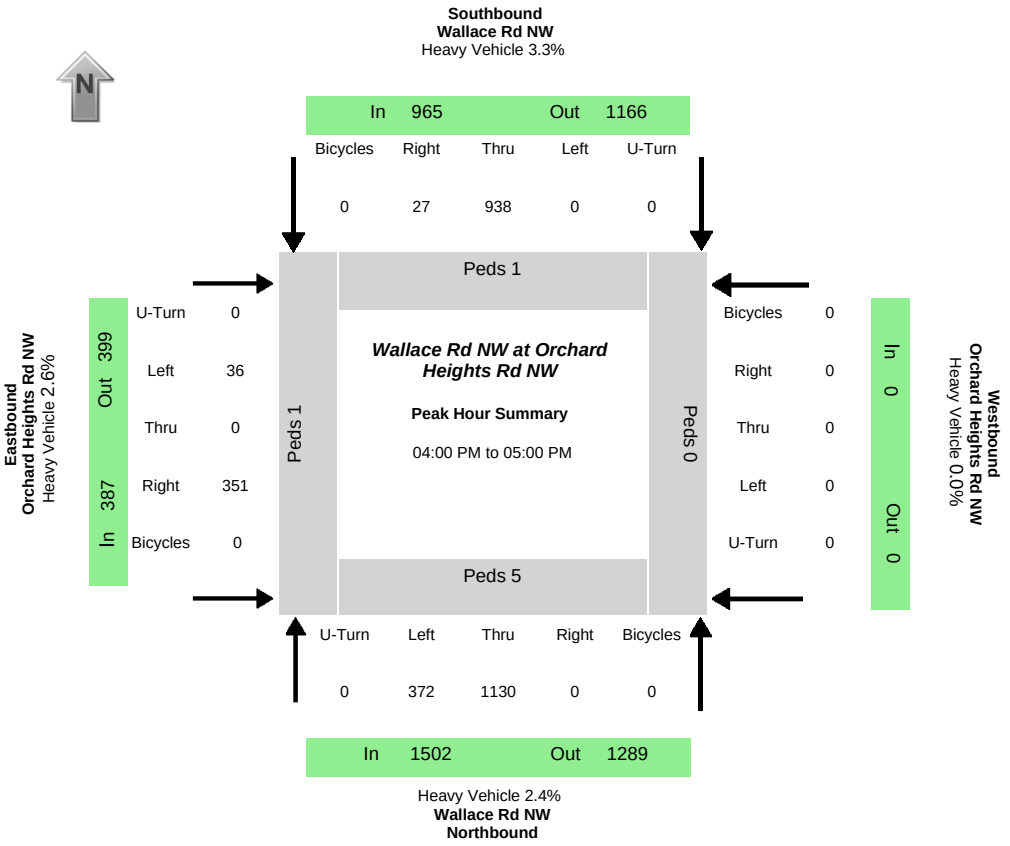
All Vehicle Volumes

	Northbound Wallace Rd NW				Southbound Wallace Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
02:00:00 PM	21	70	17	0	3	59	2	0	3	16	31	1	32	11	5	0		
02:05:00 PM	15	96	15	0	5	103	3	0	2	12	24	1	26	17	9	0		
02:10:00 PM	24	109	11	0	3	78	1	0	5	7	15	0	23	13	2	0	890	
02:15:00 PM	20	100	15	0	3	69	3	0	3	6	24	0	18	15	7	0	902	
02:20:00 PM	24	84	17	0	7	69	1	0	6	5	17	1	27	8	1	0	841	
02:25:00 PM	14	111	16	0	5	109	1	0	4	15	12	0	11	8	4	0	860	
02:30:00 PM	28	90	15	0	6	87	3	0	4	8	38	1	14	8	4	0	883	
02:35:00 PM	26	78	13	0	1	93	4	0	9	17	24	1	24	18	10	0	934	
02:40:00 PM	19	100	8	0	3	112	1	0	4	5	21	0	20	10	1	0	928	
02:45:00 PM	25	79	12	0	2	94	1	0	5	8	45	1	18	8	1	0	921	
02:50:00 PM	33	84	18	0	3	70	5	0	6	10	25	1	22	16	6	0	902	
02:55:00 PM	18	108	19	0	5	105	3	0	4	6	20	0	22	5	8	0	921	3599
03:00:00 PM	24	87	17	0	3	77	1	0	4	3	21	0	19	12	2	0	892	3598
03:05:00 PM	34	98	13	0	2	67	0	0	5	14	17	0	15	11	5	0	874	3551
03:10:00 PM	30	98	14	0	10	88	1	0	5	4	19	0	23	14	7	0	864	3573
03:15:00 PM	23	141	11	0	4	113	2	0	3	4	21	0	12	10	2	0	940	3636
03:20:00 PM	35	115	15	0	2	74	2	0	2	8	30	0	14	10	3	0	969	3679
03:25:00 PM	24	86	19	1	2	93	5	0	6	4	33	0	15	13	11	0	968	3681
03:30:00 PM	16	106	11	0	2	115	5	0	8	10	26	0	17	9	3	0	950	3703
03:35:00 PM	39	110	12	0	7	75	2	0	4	8	30	0	24	15	0	0	966	3711
03:40:00 PM	24	101	13	0	3	78	1	0	10	5	30	0	23	16	11	0	969	3722
03:45:00 PM	27	105	16	0	6	111	0	0	8	10	29	0	14	18	2	0	987	3769
03:50:00 PM	35	141	15	0	4	101	1	0	7	9	25	0	15	9	8	0	1031	3840
03:55:00 PM	23	99	11	0	2	85	2	0	7	21	16	0	21	19	3	0	1025	3826

04:00:00 PM	24	103	21	0	4	99	2	0	2	7	28	0	22	14	4	0	1009	3886
04:05:00 PM	31	112	12	0	4	105	1	0	7	11	32	0	10	20	7	0	991	3957
04:10:00 PM	22	103	20	0	4	83	3	0	5	15	34	0	21	11	3	0	1006	3968
04:15:00 PM	28	95	15	0	7	67	1	0	7	8	25	0	26	21	7	0	983	3929
04:20:00 PM	22	124	15	0	1	111	5	0	5	8	27	0	18	10	4	0	981	3969
04:25:00 PM	26	111	16	0	2	79	1	0	4	13	39	0	15	15	5	0	983	3983
04:30:00 PM	20	94	14	0	9	96	5	0	4	8	23	0	21	10	4	0	984	3963
04:35:00 PM	22	124	18	0	6	113	4	0	5	6	25	0	14	16	5	0	992	3995
04:40:00 PM	30	126	18	1	1	88	2	0	7	12	33	0	19	20	4	0	1027	4041
04:45:00 PM	26	91	14	1	2	83	1	0	6	19	20	0	22	21	3	0	1028	4004
04:50:00 PM	14	126	11	0	4	108	4	0	5	12	26	0	15	5	8	0	1008	3972
04:55:00 PM	44	135	12	1	2	95	2	0	5	11	31	0	13	10	2	0	1010	4026
05:00:00 PM	27	99	13	0	5	87	3	0	4	17	23	0	21	23	4	0	1027	4022
05:05:00 PM	28	100	17	0	4	103	0	0	7	9	21	0	23	15	2	0	1018	3999
05:10:00 PM	40	126	13	0	1	93	3	0	1	5	30	0	21	14	3	0	1005	4025
05:15:00 PM	28	113	18	0	2	81	2	0	6	12	32	0	15	14	2	0	1004	4043
05:20:00 PM	17	98	7	1	6	93	1	0	2	9	25	0	29	19	7	0	989	4007
05:25:00 PM	29	121	11	0	6	115	0	0	3	8	16	0	9	9	3	0	969	4011
05:30:00 PM	37	115	13	0	5	98	3	0	9	11	28	0	13	11	3	0	990	4049
05:35:00 PM	25	95	17	0	6	96	1	0	6	14	25	0	27	18	3	0	1009	4024
05:40:00 PM	29	111	11	0	3	85	1	0	6	7	16	0	16	15	3	0	982	3966
05:45:00 PM	34	119	19	0	2	89	3	0	5	11	21	1	18	6	4	0	968	3989
05:50:00 PM	26	112	18	0	5	82	1	0	5	10	33	1	9	22	1	0	960	3976
05:55:00 PM	23	110	18	0	2	92	5	0	2	16	13	0	13	16	1	0	968	3924

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Wallace Rd NW*
E/W street	*Orchard Heights Rd NW*
City, State	Salem OR
Site Notes	
Location	44.95334 - -123.05251
Start Date	Thursday, September 16, 2021
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:00:00 PM
Peak 15 Min Start	04:45:00 PM
PHF (15-Min Int)	0.97



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
372	1130	0	0	0	938	27	0	36	0	351	0	0	0	0	0	1502	965	387	0	1289	1166	399	0

Percent Heavy Vehicles

1.6%	2.7%	0.0%	0.0%	0.0%	3.3%	3.7%	0.0%	2.8%	0.0%	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	3.3%	2.6%	0.0%	3.1%	2.7%	1.8%	0.0%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	**Sum**
5	1	1	0	7

All Vehicle Volumes

	Northbound Wallace Rd NW				Southbound Wallace Rd NW				Eastbound Orchard Heights Rd NW				Westbound Orchard Heights Rd NW				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
02:00:00 PM	23	50	0	0	0	65	4	0	2	0	21	0	0	0	0	0		
02:05:00 PM	47	77	0	0	0	55	2	0	1	0	28	0	0	0	0	0		
02:10:00 PM	35	65	0	0	0	65	0	0	2	0	24	0	0	0	0	0	566	
02:15:00 PM	33	71	0	0	0	61	1	0	3	0	25	0	0	0	0	0	595	
02:20:00 PM	21	74	0	0	0	60	3	0	0	0	29	0	0	0	0	0	572	
02:25:00 PM	25	79	0	0	0	86	1	0	0	0	23	0	0	0	0	0	595	
02:30:00 PM	24	73	0	0	0	86	0	0	2	0	39	0	0	0	0	0	625	
02:35:00 PM	28	84	0	0	0	80	0	0	0	0	36	0	0	0	0	0	666	
02:40:00 PM	21	86	0	0	0	74	2	0	0	0	43	0	0	0	0	0	678	
02:45:00 PM	21	70	0	0	0	74	1	0	1	0	26	0	0	0	0	0	647	
02:50:00 PM	29	68	0	0	0	60	2	0	4	0	35	0	0	0	0	0	617	
02:55:00 PM	30	88	0	0	0	43	1	1	1	0	24	0	0	0	0	0	579	2418
03:00:00 PM	27	74	0	0	0	69	1	0	1	0	28	0	0	0	0	0	586	2453
03:05:00 PM	23	69	0	0	0	82	2	0	0	0	26	0	0	0	0	0	590	2445
03:10:00 PM	40	96	0	0	0	74	3	0	1	0	24	0	0	0	0	0	640	2492
03:15:00 PM	36	86	0	0	0	65	1	0	2	0	25	0	0	0	0	0	655	2513
03:20:00 PM	28	90	0	0	0	110	1	0	0	0	11	0	0	0	0	0	693	2566
03:25:00 PM	22	82	0	0	0	83	1	0	3	0	31	0	0	0	0	0	677	2574
03:30:00 PM	44	77	0	0	0	67	5	0	3	0	31	0	0	0	0	0	689	2577
03:35:00 PM	26	82	0	0	0	75	1	0	3	0	39	0	0	0	0	0	675	2575
03:40:00 PM	27	105	0	0	0	87	2	0	3	0	30	0	0	0	0	0	707	2603
03:45:00 PM	41	86	0	0	0	61	3	0	3	0	43	0	0	0	0	0	717	2647
03:50:00 PM	28	93	0	0	0	73	0	0	3	0	27	0	0	0	0	0	715	2673
03:55:00 PM	24	82	0	0	0	103	3	0	0	0	19	0	0	0	0	0	692	2716

04:00:00 PM	35	90	0	0	0	75	9	0	0	0	30	0	0	0	0	0	694	2755
04:05:00 PM	31	82	0	0	0	86	2	0	5	0	30	0	0	0	0	0	706	2789
04:10:00 PM	33	83	0	0	0	74	1	0	4	0	31	0	0	0	0	0	701	2777
04:15:00 PM	26	99	0	0	0	58	1	0	9	0	39	0	0	0	0	0	694	2794
04:20:00 PM	32	100	0	0	0	59	2	0	3	0	36	0	0	0	0	0	690	2786
04:25:00 PM	34	76	0	0	0	92	2	0	0	0	22	0	0	0	0	0	690	2790
04:30:00 PM	28	91	0	0	0	94	6	0	0	0	17	0	0	0	0	0	694	2799
04:35:00 PM	30	108	0	0	0	78	1	0	1	0	29	0	0	0	0	0	709	2820
04:40:00 PM	26	95	0	0	0	76	0	0	6	0	43	0	0	0	0	0	729	2812
04:45:00 PM	29	83	0	0	0	72	1	0	5	0	25	0	0	0	0	0	708	2790
04:50:00 PM	45	118	0	0	0	75	0	0	0	0	31	0	0	0	0	0	730	2835
04:55:00 PM	23	105	0	0	0	99	2	0	3	0	18	0	0	0	0	0	734	2854
05:00:00 PM	43	79	0	0	0	88	2	0	0	0	20	0	0	0	0	0	751	2847
05:05:00 PM	26	95	0	0	0	77	2	0	2	0	24	0	0	0	0	0	708	2837
05:10:00 PM	31	91	0	0	0	69	1	0	2	0	35	0	0	0	0	0	687	2840
05:15:00 PM	37	83	0	0	0	70	0	0	0	0	22	0	0	0	0	0	667	2820
05:20:00 PM	23	104	0	0	0	91	2	0	2	0	25	0	0	0	0	0	688	2835
05:25:00 PM	27	87	0	0	0	89	1	0	0	0	16	0	0	0	0	0	679	2829
05:30:00 PM	33	90	0	0	0	96	5	0	2	0	15	0	0	0	0	0	708	2834
05:35:00 PM	41	93	0	0	0	86	2	0	2	0	23	0	0	0	0	0	708	2834
05:40:00 PM	41	84	0	0	0	72	2	0	0	0	32	0	0	0	0	0	719	2819
05:45:00 PM	29	77	0	0	0	67	2	0	3	0	38	0	0	0	0	0	694	2820
05:50:00 PM	44	89	0	0	0	73	1	0	1	0	24	0	0	0	0	0	679	2783
05:55:00 PM	38	90	0	0	0	74	2	0	5	0	24	0	0	0	0	0	681	2766

Middle Housing: HB 2001 Frequently Asked Questions

The State Legislature passed House Bill 2001 (https://olis.leg.state.or.us/liz/2019R1/Downloads/MeasureDocument/HB2001/Enrolled) in 2019 to help increase housing choices and housing supply in Oregon. Below are answers to some frequently asked questions about the new law and its impact on Salem. You can also learn more by visiting the State's webpage (https://www.oregon.gov/lcd/UP/Pages/Housing-Choices.aspx) on HB 2001.

The Planning Commission will hold a work session on proposed code changes to implement HB 2001 on Tuesday, June 1.

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1. How does HB 2001 affect the types of housing allowed in Salem?

HB 2001 requires large cities like Salem to allow a duplex on each lot that is zoned for residential use that allows development of a detached single-family dwelling. Salem must also allow other types of middle housing – triplexes, quadplexes, townhouses, and cottage clusters – in *areas* zoned for residential use that allow detached single-family dwellings.

2. What areas of Salem will be impacted?

HB 2001 will impact all areas in Salem that are zoned residential *and* allow detached single-family dwellings. That includes the Single-Family Residential (RS) zone, Residential Agriculture (RA) zone, Duplex Residential (RD) zone, and Multiple Family Residential I (RM-I) zone. You can find the zoning of your property online (/Pages/find-your-property-zone.aspx).

3. Will all middle housing types be allowed on lots in those residential zones

No. Duplexes will be allowed on all lots in the RS, RA, RD, and RM-I zone that allow detached single-family dwellings. That means duplexes, like a single-family dwellings, will be allowed on lots that are at least 4,000 square feet in size. However, the State has recently adopted new administrative rules that include a provision that requires triplexes, quadplexes, and cottage clusters to be allowed in residential areas based on lot size. In Salem, the requirement is:

- A triplex is allowed on a lot that is at least 5,000 square feet in size

- A quadplex is allowed on a lot that is at least 7,000 square feet in size
- A cottage cluster is allowed on a lot that is at least 7,000 square feet in size

4. What is a cottage cluster?

The State has generally defined a cottage cluster as a grouping of at least four detached dwelling units per acre that are clustered around a common courtyard. Each building must have a footprint of less than 900 square feet.

5. Will single-family homes be banned?

No. Detached single-family dwellings will still be allowed. HB 2001 allows a broader mix of housing types but does not prohibit detached single-family homes.

6. Will accessory dwelling units still be allowed?

Yes. Accessory dwelling units (ADUs) will continue to be allowed with a single-family detached dwelling. They will continue to be limited in size to 900 square feet or 75 percent of the main building gross area, whichever is less. HB 2001 prohibits cities from requiring owner occupancy or parking for ADUs; Salem's zoning code already complies with these parts of the law.

7. How much parking will be required?

Under the State's rules, the City can generally require up to two parking spaces for a duplex, three spaces for a triplex, four spaces for a quadplex, one space for each townhouse, and one space for each dwelling unit in a cottage cluster. If a detached single-family dwelling is converted to a triplex or quadplex, the City cannot require any additional parking spaces.

8. When must Salem comply with HB 2001?

The City must comply with the new law and its associated administrative rules by June 30, 2022.

9. When does Salem expect to implement HB 2001?

The City is reviewing the State's recently-adopted rules and will propose changes to Salem's zoning code to comply. This work was initially going to be incorporated into the Our Salem project (/our-salem) but might be done in advance of that larger project this spring or summer, given the State-mandated deadline for adoption.

10. How do I stay informed?

You can sign up to receive updates (https://cityofsalem.us1.list-manage.com/subscribe?u=9c537ef0aeb7914e4fe4f6d5c&id=21d07b5555) on this and other Planning projects. If you have more questions, you can also contact Eunice Kim, Long Range Planning Manager.