



MEMORANDUM

To: Steve Koper, Assistant Community Development Director

From: Mike McCarthy, City Engineer

Date: June 6, 2025

Subject: Tualatin Rd/115th Traffic Analysis

Attached are the results of traffic analysis for the intersection of Tualatin Road with 115th Avenue. The analysis considered three scenarios: a) current conditions; b) anticipated 2045 traffic volumes with no additional traffic on the south leg of 115th; and c) anticipated 2045 traffic volumes with additional development traffic on the south leg of 115th.

The analysis concluded it is currently difficult for drivers to turn left from 115th Avenue onto Tualatin Road during the morning and afternoon peak hours.

With anticipated traffic volume growth over the next 20 years it is anticipated to become considerably more difficult for drivers to turn left from 115th Ave onto Tualatin Road (even with no additional development traffic on the south leg of the intersection). With this increase in left-turning difficulty drivers would have to wait longer to find a gap in traffic to turn, and potential crash rates would increase as some drivers lose patience waiting for a gap in traffic and try to go when they really don't have enough space.

Additional traffic on the south side of the intersection would make it more difficult for traffic turning left from 115th Ave.

The traffic volumes on Tualatin Road also make it difficult for pedestrians to cross at 115th Ave, and anticipated traffic growth on Tualatin Road would make it more difficult for pedestrians to cross.

With the current and forecast traffic volumes, a traffic signal at the intersection of Tualatin Road with 115th Avenue would be an appropriate traffic control device to address these difficulties by stopping traffic on Tualatin Road for drivers to turn left from 115th Ave onto Tualatin Road and for pedestrians to cross Tualatin Road at this location. Therefore it is my recommendation to keep the traffic signal at this location in the Transportation System Plan.



Intersection

Int Delay, s/veh 2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	677	5	4	218	128	2	1	1	40	2	29
Future Vol, veh/h	62	677	5	4	218	128	2	1	1	40	2	29
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	2	40	50	9	7	100	2	100	10	2	14
Mvmt Flow	67	736	5	4	237	139	2	1	1	43	2	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	377	0	0	742	0	0	1121	1260	740	1187	1193	308
Stage 1	-	-	-	-	-	-	874	874	-	316	316	-
Stage 2	-	-	-	-	-	-	247	386	-	871	877	-
Critical Hdwy	4.13	-	-	4.6	-	-	8.1	6.52	7.2	7.2	6.52	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	7.1	5.52	-	6.2	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.1	5.52	-	6.2	5.52	-
Follow-up Hdwy	2.227	-	-	2.65	-	-	4.4	4.018	4.2	3.59	4.018	3.426
Pot Cap-1 Maneuver	1176	-	-	683	-	-	121	170	291	159	187	705
Stage 1	-	-	-	-	-	-	237	367	-	678	655	-
Stage 2	-	-	-	-	-	-	583	610	-	335	366	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1175	-	-	682	-	-	107	159	291	147	175	705
Mov Cap-2 Maneuver	-	-	-	-	-	-	107	159	-	147	175	-
Stage 1	-	-	-	-	-	-	224	346	-	673	650	-
Stage 2	-	-	-	-	-	-	551	606	-	313	345	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.69	0.12	31.08	30.09
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	107	206	1175	-	-	682	-	-	219
HCM Lane V/C Ratio	0.02	0.011	0.057	-	-	0.006	-	-	0.352
HCM Control Delay (s/veh)	39.5	22.7	8.3	-	-	10.3	-	-	30.1
HCM Lane LOS	E	C	A	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.1	0	0.2	-	-	0	-	-	1.5

Intersection

Int Delay, s/veh 13.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	70	774	221	97	229	134	21	6	15	48	2	35
Future Vol, veh/h	70	774	221	97	229	134	21	6	15	48	2	35
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	2	40	50	9	7	100	2	100	10	2	14
Mvmt Flow	76	841	240	105	249	146	23	7	16	52	2	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	396	0	0	1083	0	0	1575	1721	962	1530	1768	323
Stage 1	-	-	-	-	-	-	1115	1115	-	534	534	-
Stage 2	-	-	-	-	-	-	461	606	-	997	1235	-
Critical Hdwy	4.13	-	-	4.6	-	-	8.1	6.52	7.2	7.2	6.52	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	7.1	5.52	-	6.2	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.1	5.52	-	6.2	5.52	-
Follow-up Hdwy	2.227	-	-	2.65	-	-	4.4	4.018	4.2	3.59	4.018	3.426
Pot Cap-1 Maneuver	1158	-	-	494	-	-	53	89	208	92	83	691
Stage 1	-	-	-	-	-	-	166	283	-	516	525	-
Stage 2	-	-	-	-	-	-	431	487	-	284	249	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1156	-	-	494	-	-	36	65	208	57	61	691
Mov Cap-2 Maneuver	-	-	-	-	-	-	36	65	-	57	61	-
Stage 1	-	-	-	-	-	-	155	265	-	405	412	-
Stage 2	-	-	-	-	-	-	319	382	-	239	232	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v 0.55		3.01	124.98	176.69
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	36	128	1156	-	-	494	-	-	92
HCM Lane V/C Ratio	0.635	0.178	0.066	-	-	0.214	-	-	1.001
HCM Control Delay (s/veh)	210.9	39.1	8.3	-	-	14.3	-	-	176.7
HCM Lane LOS	F	E	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.2	0.6	0.2	-	-	0.8	-	-	5.9

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	70	765	6	4	228	134	2	1	1	48	2	35
Future Vol, veh/h	70	765	6	4	228	134	2	1	1	48	2	35
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	2	40	50	9	7	100	2	100	10	2	14
Mvmt Flow	76	832	7	4	248	146	2	1	1	52	2	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	394	0	0	839	0	0	1246	1391	836	1315	1322	322
Stage 1	-	-	-	-	-	-	988	988	-	330	330	-
Stage 2	-	-	-	-	-	-	258	403	-	984	991	-
Critical Hdwy	4.13	-	-	4.6	-	-	8.1	6.52	7.2	7.2	6.52	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	7.1	5.52	-	6.2	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.1	5.52	-	6.2	5.52	-
Follow-up Hdwy	2.227	-	-	2.65	-	-	4.4	4.018	4.2	3.59	4.018	3.426
Pot Cap-1 Maneuver	1159	-	-	623	-	-	97	142	252	130	156	692
Stage 1	-	-	-	-	-	-	201	325	-	666	646	-
Stage 2	-	-	-	-	-	-	574	600	-	289	324	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1158	-	-	623	-	-	83	132	252	119	145	692
Mov Cap-2 Maneuver	-	-	-	-	-	-	83	132	-	119	145	-
Stage 1	-	-	-	-	-	-	187	303	-	661	640	-
Stage 2	-	-	-	-	-	-	537	595	-	268	302	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.69			0.12			37.69			43.75		
HCM LOS							E			E		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	83	173	1158	-	-	623	-	-	182
HCM Lane V/C Ratio	0.026	0.013	0.066	-	-	0.007	-	-	0.509
HCM Control Delay (s/veh)	49.3	26.1	8.3	-	-	10.8	-	-	43.7
HCM Lane LOS	E	D	A	-	-	B	-	-	E
HCM 95th %tile Q(veh)	0.1	0	0.2	-	-	0	-	-	2.5

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	370	1	4	600	243	0	4	5	20	2	22
Future Vol, veh/h	48	370	1	4	600	243	0	4	5	20	2	22
Conflicting Peds, #/hr	4	0	0	0	0	4	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	3	2	2	2	2	2	2	14	5	2	17
Mvmt Flow	51	389	1	4	632	256	0	4	5	21	2	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	891	0	0	391	0	0	1133	1391	390	1265	1263	764
Stage 1	-	-	-	-	-	-	491	491	-	772	772	-
Stage 2	-	-	-	-	-	-	642	900	-	493	492	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.34	7.15	6.52	6.37
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.15	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.15	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.426	3.545	4.018	3.453
Pot Cap-1 Maneuver	761	-	-	1168	-	-	180	142	633	144	170	380
Stage 1	-	-	-	-	-	-	559	548	-	388	409	-
Stage 2	-	-	-	-	-	-	463	357	-	552	548	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	758	-	-	1168	-	-	155	132	633	128	157	379
Mov Cap-2 Maneuver	-	-	-	-	-	-	155	132	-	128	157	-
Stage 1	-	-	-	-	-	-	522	512	-	385	406	-
Stage 2	-	-	-	-	-	-	430	355	-	507	511	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	1.16			0.04			20.95			29.25		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	235	758	-	-	1168	-	-	194
HCM Lane V/C Ratio	-	0.04	0.067	-	-	0.004	-	-	0.238
HCM Control Delay (s/veh)	0	21	10.1	-	-	8.1	-	-	29.2
HCM Lane LOS	A	C	B	-	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0.1	0.2	-	-	0	-	-	0.9

Intersection												
Int Delay, s/veh	34.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	54	420	21	21	634	254	158	46	100	24	2	27
Future Vol, veh/h	54	420	21	21	634	254	158	46	100	24	2	27
Conflicting Peds, #/hr	4	0	0	0	0	4	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	3	2	2	2	2	2	2	14	5	2	17
Mvmt Flow	57	442	22	22	667	267	166	48	105	25	2	28
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	939	0	0	464	0	0	1280	1550	453	1429	1427	806
Stage 1	-	-	-	-	-	-	567	567	-	849	849	-
Stage 2	-	-	-	-	-	-	714	983	-	580	578	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.34	7.15	6.52	6.37
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.15	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.15	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.426	3.545	4.018	3.453
Pot Cap-1 Maneuver	730	-	-	1097	-	-	~ 143	114	582	111	135	360
Stage 1	-	-	-	-	-	-	508	507	-	351	377	-
Stage 2	-	-	-	-	-	-	422	327	-	495	501	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	727	-	-	1097	-	-	~ 117	102	582	45	122	358
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 117	102	-	45	122	-
Stage 1	-	-	-	-	-	-	469	467	-	343	368	-
Stage 2	-	-	-	-	-	-	379	319	-	335	462	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	1.13			0.19			178.92			106.25		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1		NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	117		235	727	-	-	1097	-	-	85		
HCM Lane V/C Ratio	1.427		0.654	0.078	-	-	0.02	-	-	0.657		
HCM Control Delay (s/veh)	\$ 302.4		45.2	10.4	-	-	8.3	-	-	106.2		
HCM Lane LOS	F		E	B	-	-	A	-	-	F		
HCM 95th %tile Q(veh)	11.6		4.1	0.3	-	-	0.1	-	-	3.1		
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	54	418	1	4	626	254	0	5	6	24	2	27
Future Vol, veh/h	54	418	1	4	626	254	0	5	6	24	2	27
Conflicting Peds, #/hr	4	0	0	0	0	4	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	3	2	2	2	2	2	2	14	5	2	17
Mvmt Flow	57	440	1	4	659	267	0	5	6	25	2	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	930	0	0	441	0	0	1224	1493	441	1361	1360	798
Stage 1	-	-	-	-	-	-	554	554	-	805	805	-
Stage 2	-	-	-	-	-	-	669	939	-	556	555	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.34	7.15	6.52	6.37
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.15	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.15	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.426	3.545	4.018	3.453
Pot Cap-1 Maneuver	735	-	-	1119	-	-	156	123	592	123	148	364
Stage 1	-	-	-	-	-	-	517	514	-	372	395	-
Stage 2	-	-	-	-	-	-	447	343	-	510	513	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	733	-	-	1119	-	-	130	113	592	107	136	362
Mov Cap-2 Maneuver	-	-	-	-	-	-	130	113	-	107	136	-
Stage 1	-	-	-	-	-	-	476	474	-	369	392	-
Stage 2	-	-	-	-	-	-	408	340	-	460	474	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	1.18			0.04			23.9			36.46		
HCM LOS							C			E		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	202	733	-	-	1119	-	-	169
HCM Lane V/C Ratio	-	0.057	0.078	-	-	0.004	-	-	0.33
HCM Control Delay (s/veh)	0	23.9	10.3	-	-	8.2	-	-	36.5
HCM Lane LOS	A	C	B	-	-	A	-	-	E
HCM 95th %tile Q(veh)	-	0.2	0.3	-	-	0	-	-	1.3