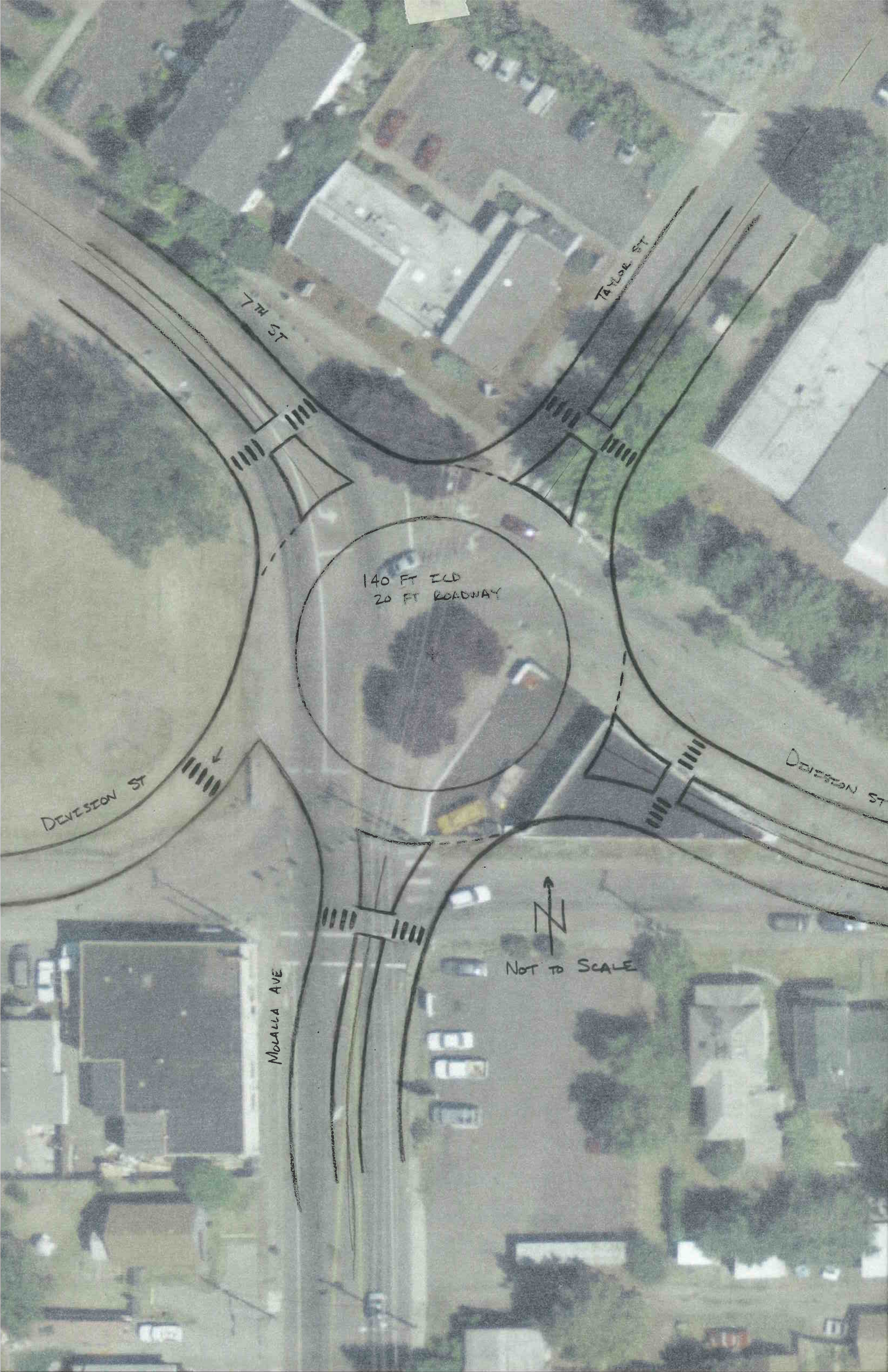




Taylor St

7th St

140 FT ICD
20 FT ROADWAY

Devesion St

Devesion St

Molalla Ave

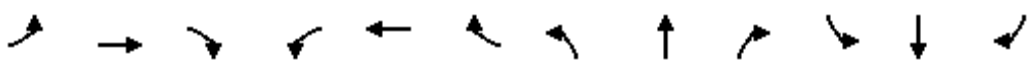


NOT TO SCALE

HCM Signalized Intersection Capacity Analysis

Oregon City TSP Update

10: South End Road & Warner Parrott Road-Lawton Road 2035 Financially Constrained System- DHV (PM Peak)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔		↔	↔	
Volume (vph)	25	45	5	185	50	120	15	180	170	130	485	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.97	1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00			0.99	1.00	0.99	1.00		1.00	1.00	
Frt		0.99			1.00	0.85	1.00	0.93		1.00	0.99	
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1844			1778	1548	1793	1694		1797	1846	
Flt Permitted		0.87			0.72	1.00	0.33	1.00		0.50	1.00	
Satd. Flow (perm)		1628			1331	1548	627	1694		953	1846	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	47	5	195	53	126	16	189	179	137	511	53
RTOR Reduction (vph)	0	3	0	0	0	87	0	58	0	0	6	0
Lane Group Flow (vph)	0	75	0	0	248	39	16	310	0	137	558	0
Confl. Peds. (#/hr)	9		8	8		9	13		6	6		13
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	2%	2%	1%	0%	3%	2%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)		13.6			13.6	13.6	22.0	22.0		22.0	22.0	
Effective Green, g (s)		13.6			13.6	13.6	22.0	22.0		22.0	22.0	
Actuated g/C Ratio		0.31			0.31	0.31	0.50	0.50		0.50	0.50	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		508			415	483	316	855		481	931	
v/s Ratio Prot								0.18			c0.30	
v/s Ratio Perm		0.05			c0.19	0.03	0.03			0.14		
v/c Ratio		0.15			0.60	0.08	0.05	0.36		0.28	0.60	
Uniform Delay, d1		10.8			12.7	10.6	5.5	6.5		6.2	7.7	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			2.3	0.1	0.1	0.3		0.3	1.0	
Delay (s)		11.0			15.0	10.7	5.6	6.8		6.6	8.7	
Level of Service		B			B	B	A	A		A	A	
Approach Delay (s)		11.0			13.5			6.8			8.3	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM Average Control Delay			9.3									
HCM Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			43.6									
Intersection Capacity Utilization			61.6%									
Analysis Period (min)			15									
c Critical Lane Group												

MOVEMENT SUMMARY

Site: Southend Road/Partlow Road
- Financially Constrained Syst

Southend Rd/Partlow Rd
2035 Financially Constrained System - PM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South East: Partlow Road											
11L	L	158	1.0	0.231	14.9	LOS B	1.6	41.1	0.58	0.78	28.5
16T	T	5	0.0	0.229	7.7	LOS A	1.6	41.1	0.58	0.61	30.8
16R	R	26	3.0	0.231	9.1	LOS A	1.6	41.1	0.58	0.66	30.7
Approach		189	1.3	0.231	13.9	LOS B	1.6	41.1	0.58	0.75	28.9
North East: South End Road											
17L	L	89	1.0	0.658	14.9	LOS B	7.8	196.8	0.71	0.81	29.3
14T	T	579	1.0	0.656	7.8	LOS A	7.8	196.8	0.71	0.65	31.0
14R	R	11	0.0	0.658	9.0	LOS A	7.8	196.8	0.71	0.69	31.0
Approach		679	1.0	0.656	8.7	LOS B	7.8	196.8	0.71	0.67	30.7
North West: Lafayette Avenue											
15L	L	5	0.0	0.075	18.7	LOS B	0.6	13.8	0.79	0.86	27.1
12T	T	11	0.0	0.075	11.5	LOS B	0.6	13.8	0.79	0.76	29.4
12R	R	21	0.0	0.075	12.8	LOS B	0.6	13.8	0.79	0.78	29.2
Approach		37	0.0	0.075	13.3	LOS B	0.6	13.8	0.79	0.79	28.9
South West: South End Road											
13L	L	42	0.0	0.405	13.0	LOS B	3.7	92.4	0.40	0.80	29.9
18T	T	321	0.0	0.403	5.8	LOS A	3.7	92.4	0.40	0.46	32.5
18R	R	111	1.0	0.403	7.1	LOS A	3.7	92.4	0.40	0.55	32.1
Approach		474	0.2	0.403	6.8	LOS B	3.7	92.4	0.40	0.51	32.2
All Vehicles		1379	0.7	0.656	8.9	LOS A	7.8	196.8	0.58	0.63	30.9

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout LOS Method: Same as Signalised Intersections.

Roundabout Capacity Model: SIDRA Standard.

Processed: Tuesday, August 28, 2012 3:42:20 PM

SIDRA INTERSECTION 5.0.5.1510

Project: X:\Projects\2010\IP10068-008 (Oregon City TSP Update)\Analysis\2035 Financially Constrained System

\OC TSP Update.sip

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SIDRA
INTERSECTION

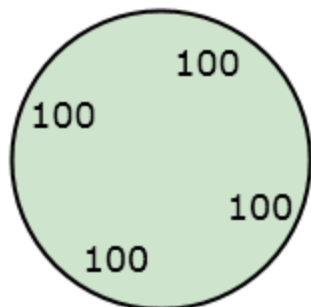


Lafayette Avenue

South End Road

South End Road

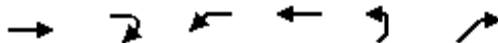
Partlow Road



HCM Unsignalized Intersection Capacity Analysis

12: Central Point Road & Warner Parrott Road

Oregon City TSP Update
2035 Financially Constrained System- DHV (PM Peak)



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↩		↩	↩	↩	↩
Volume (veh/h)	340	125	500	410	55	350
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	358	132	526	432	58	368
Pedestrians				1	5	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			494		1913	430
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			494		1913	430
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			51		0	41
cM capacity (veh/h)			1075		37	624
Direction, Lane #	EB 1	WB 1	WB 2	NE 1	NE 2	
Volume Total	489	526	432	58	368	
Volume Left	0	526	0	58	0	
Volume Right	132	0	0	0	368	
cSH	1700	1075	1700	37	624	
Volume to Capacity	0.29	0.49	0.25	1.55	0.59	
Queue Length 95th (ft)	0	69	0	153	96	
Control Delay (s)	0.0	11.5	0.0	514.9	18.7	
Lane LOS		B		F	C	
Approach Delay (s)	0.0	6.3		86.1		
Approach LOS				F		
Intersection Summary						
Average Delay			22.8			
Intersection Capacity Utilization			67.0%		ICU Level of Service	C
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

13: Clairmont Way/Fred Meyer & Molalla Avenue

Oregon City TSP Update
2035 Financially Constrained System- DHV (PM Peak)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	60	650	10	30	830	100	160	25	60	15	35	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96		1.00	0.96		0.95	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		0.95	1.00		1.00	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		0.93	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.99	
Satd. Flow (prot)	1805	1876		1805	1863	1542		1736	1499		1664	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.61	1.00		0.94	
Satd. Flow (perm)	1805	1876		1805	1863	1542		1108	1499		1583	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	684	11	32	874	105	168	26	63	16	37	58
RTOR Reduction (vph)	0	0	0	0	0	17	0	0	50	0	37	0
Lane Group Flow (vph)	63	695	0	32	874	88	0	194	13	0	74	0
Confl. Peds. (#/hr)	7		13	13		7	27		10	10		27
Heavy Vehicles (%)	0%	1%	0%	0%	2%	1%	0%	0%	3%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases						2	8		8	4		
Actuated Green, G (s)	6.4	71.6		3.7	68.9	68.9		21.7	21.7		21.7	
Effective Green, g (s)	6.4	72.1		3.7	69.4	69.4		22.2	22.2		22.2	
Actuated g/C Ratio	0.06	0.66		0.03	0.63	0.63		0.20	0.20		0.20	
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5		4.5	4.5		4.5	
Vehicle Extension (s)	2.5	3.0		2.5	3.0	3.0		2.5	2.5		2.5	
Lane Grp Cap (vph)	105	1230		61	1175	973		224	303		319	
v/s Ratio Prot	0.03	c0.37		0.02	c0.47							
v/s Ratio Perm						0.06		c0.18	0.01		0.05	
v/c Ratio	0.60	0.56		0.52	0.74	0.09		0.87	0.04		0.23	
Uniform Delay, d1	50.6	10.4		52.3	14.1	7.9		42.5	35.3		36.8	
Progression Factor	1.09	1.11		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	6.1	1.5		6.1	4.3	0.2		27.4	0.0		0.3	
Delay (s)	61.1	13.1		58.4	18.4	8.1		69.9	35.4		37.0	
Level of Service	E	B		E	B	A		E	D		D	
Approach Delay (s)		17.0			18.6			61.4			37.0	
Approach LOS		B			B			E			D	
Intersection Summary												
HCM Average Control Delay			24.2			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			73.4%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

14: Gaffney Lane & Molalla Avenue

Oregon City TSP Update

2035 Financially Constrained System- DHV (PM Peak)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	50	435	155	195	625	85	60	80	70	140	80	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.95		0.98			1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			0.98	1.00
Frt	1.00	0.96		1.00	1.00	0.85		0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.97	1.00
Satd. Flow (prot)	1805	1788		1787	1845	1509		1698			1789	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.69			0.57	1.00
Satd. Flow (perm)	1805	1788		1787	1845	1509		1182			1059	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	458	163	205	658	89	63	84	74	147	84	237
RTOR Reduction (vph)	0	11	0	0	0	18	0	17	0	0	0	177
Lane Group Flow (vph)	53	610	0	205	658	71	0	204	0	0	231	60
Confl. Peds. (#/hr)	9		16	16		9			16	16		
Heavy Vehicles (%)	0%	0%	1%	1%	3%	2%	0%	6%	2%	1%	2%	0%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases						2	8			4		4
Actuated Green, G (s)	6.2	53.0		17.8	64.6	64.6		26.2			26.2	26.2
Effective Green, g (s)	6.2	53.5		17.8	65.1	65.1		26.7			26.7	26.7
Actuated g/C Ratio	0.06	0.49		0.16	0.59	0.59		0.24			0.24	0.24
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)	2.5	3.0		2.5	3.0	3.0		2.5			2.5	2.5
Lane Grp Cap (vph)	102	870		289	1092	893		287			257	392
v/s Ratio Prot	0.03	c0.34		c0.11	0.36							
v/s Ratio Perm						0.05		0.17			c0.22	0.04
v/c Ratio	0.52	0.70		0.71	0.60	0.08		0.71			0.90	0.15
Uniform Delay, d1	50.5	22.0		43.7	14.2	9.6		38.1			40.3	32.8
Progression Factor	1.00	1.00		0.73	0.52	0.56		1.00			1.00	1.00
Incremental Delay, d2	3.3	4.7		5.3	1.8	0.1		7.3			30.6	0.1
Delay (s)	53.8	26.7		37.2	9.2	5.5		45.4			70.9	32.9
Level of Service	D	C		D	A	A		D			E	C
Approach Delay (s)		28.8			14.9			45.4			51.7	
Approach LOS		C			B			D			D	
Intersection Summary												
HCM Average Control Delay			29.3				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			77.7%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

15: Molalla Avenue & Fir Street

Oregon City TSP Update
2035 Financially Constrained System- DHV (PM Peak)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	50	70	570	55	45	790
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	52	73	594	57	47	823
Pedestrians	6		1			
Lane Width (ft)	12.0		12.0			
Walking Speed (ft/s)	4.0		4.0			
Percent Blockage	1		0			
Right turn flare (veh)						
Median type			TWLT		TWLT	
Median storage (veh)			2		2	
Upstream signal (ft)					481	
pX, platoon unblocked	0.77					
vC, conflicting volume	1546	628			657	
vC1, stage 1 conf vol	628					
vC2, stage 2 conf vol	918					
vCu, unblocked vol	1560	628			657	
tC, single (s)	6.4	6.2			4.3	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.4	
p0 queue free %	82	85			94	
cM capacity (veh/h)	293	478			847	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2		
Volume Total	125	651	47	823		
Volume Left	52	0	47	0		
Volume Right	73	57	0	0		
cSH	379	1700	847	1700		
Volume to Capacity	0.33	0.38	0.06	0.48		
Queue Length 95th (ft)	35	0	4	0		
Control Delay (s)	19.1	0.0	9.5	0.0		
Lane LOS	C		A			
Approach Delay (s)	19.1	0.0	0.5			
Approach LOS	C					
Intersection Summary						
Average Delay		1.7				
Intersection Capacity Utilization		55.3%		ICU Level of Service	B	
Analysis Period (min)		15				

HCM Signalized Intersection Capacity Analysis

16: OR 213 & Beaver Creek Road

Oregon City TSP Update
2035 Financially Constrained System- DHV (PM Peak)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	490	945	70	90	700	560	55	710	130	1045	1425	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3521		3502	3610	1583	1703	3505	1599	3433	3505	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3521		3502	3610	1583	1703	3505	1599	3433	3505	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	516	995	74	95	737	589	58	747	137	1100	1500	695
RTOR Reduction (vph)	0	5	0	0	0	386	0	0	68	0	0	269
Lane Group Flow (vph)	516	1064	0	95	737	203	58	747	69	1100	1500	426
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Prot	Prot	NA	Prot	Prot	NA	Prot
Protected Phases	7	4		3	8	8	1	6	6	5	2	2
Permitted Phases												
Actuated Green, G (s)	14.7	31.1		4.1	20.5	20.5	4.0	20.8	20.8	32.5	49.3	49.3
Effective Green, g (s)	15.2	31.6		4.6	21.0	21.0	4.5	22.8	22.8	33.0	51.3	51.3
Actuated g/C Ratio	0.14	0.28		0.04	0.19	0.19	0.04	0.20	0.20	0.29	0.46	0.46
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	466	993		144	677	297	68	714	326	1012	1605	725
v/s Ratio Prot	0.15	c0.30		0.03	c0.20	0.13	0.03	c0.21	0.04	c0.32	0.43	0.27
v/s Ratio Perm												
v/c Ratio	1.11	1.07		0.66	1.09	0.68	0.85	1.05	0.21	1.09	0.93	0.59
Uniform Delay, d1	48.4	40.2		52.9	45.5	42.4	53.4	44.6	37.1	39.5	28.8	22.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	74.2	49.7		8.8	61.2	5.5	59.8	46.4	0.6	55.0	10.8	1.8
Delay (s)	122.6	89.9		61.8	106.7	48.0	113.2	91.0	37.7	94.5	39.6	24.3
Level of Service	F	F		E	F	D	F	F	D	F	D	C
Approach Delay (s)		100.6			79.3			84.6			54.7	
Approach LOS		F			E			F			D	
Intersection Summary												
HCM Average Control Delay			73.4			HCM Level of Service				E		
HCM Volume to Capacity ratio			1.05									
Actuated Cycle Length (s)			112.0			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			99.4%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

17: Beavercreek Road & Maple Lane Road

Oregon City TSP Update

2035 Financially Constrained System- DHV (PM Peak)

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	485	1490	115	20	855	55	165	110	125	65	75	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3500		1805	3511		1803	1748		1805	1900	1578
Flt Permitted	0.95	1.00		0.95	1.00		0.44	1.00		0.38	1.00	1.00
Satd. Flow (perm)	1770	3500		1805	3511		843	1748		717	1900	1578
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	511	1568	121	21	900	58	174	116	132	68	79	347
RTOR Reduction (vph)	0	3	0	0	3	0	0	29	0	0	0	77
Lane Group Flow (vph)	511	1686	0	21	955	0	174	219	0	68	79	270
Confl. Peds. (#/hr)			1	1			2					2
Heavy Vehicles (%)	2%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	2%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases							8			4		4
Actuated Green, G (s)	40.1	82.0		2.9	44.8		30.6	18.8		17.4	10.1	50.2
Effective Green, g (s)	40.1	82.5		2.9	45.3		31.1	19.3		18.4	10.6	50.2
Actuated g/C Ratio	0.31	0.64		0.02	0.35		0.24	0.15		0.14	0.08	0.39
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	4.0
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	552	2247		41	1238		327	263		169	157	616
v/s Ratio Prot	c0.29	c0.48		0.01	0.27		c0.07	c0.13		0.02	0.04	0.14
v/s Ratio Perm							0.06			0.03		0.03
v/c Ratio	0.93	0.75		0.51	0.77		0.53	0.83		0.40	0.50	0.44
Uniform Delay, d1	42.8	15.9		62.1	37.0		41.0	53.0		49.1	56.4	28.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	21.5	2.4		7.8	4.7		1.3	19.4		1.1	1.8	0.4
Delay (s)	64.3	18.2		69.9	41.7		42.3	72.4		50.2	58.3	29.2
Level of Service	E	B		E	D		D	E		D	E	C
Approach Delay (s)		28.9			42.3			60.0			36.7	
Approach LOS		C			D			E			D	
Intersection Summary												
HCM Average Control Delay			36.3			HCM Level of Service				D		
HCM Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			128.5			Sum of lost time (s)				12.0		
Intersection Capacity Utilization			82.6%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

18: Maple Lane Road & Thayer Road

Oregon City TSP Update
2035 Financially Constrained System- DHV (PM Peak)



Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	50	10	620	30	10	420
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	53	11	653	32	11	442
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			391			
pX, platoon unblocked						
vC, conflicting volume	1132	668			684	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1132	668			684	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	77	98			99	
cM capacity (veh/h)	224	461			919	
Direction, Lane #	WB 1	NE 1	SW 1	SW 2		
Volume Total	63	684	11	442		
Volume Left	53	0	11	0		
Volume Right	11	32	0	0		
cSH	245	1700	919	1700		
Volume to Capacity	0.26	0.40	0.01	0.26		
Queue Length 95th (ft)	25	0	1	0		
Control Delay (s)	24.7	0.0	9.0	0.0		
Lane LOS	C		A			
Approach Delay (s)	24.7	0.0	0.2			
Approach LOS	C					
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			44.5%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

19: Maple Lane Road & Grove Way

Oregon City TSP Update

2035 Financially Constrained System- DHV (PM Peak)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	45	5	50	65	5	5	100	460	70	5	315	110
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	47	5	53	68	5	5	105	484	74	5	332	116
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								982				
pX, platoon unblocked												
vC, conflicting volume	1139	1168	389	1187	1189	521	447			558		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1139	1168	389	1187	1189	521	447			558		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	70	97	92	48	97	99	91			99		
cM capacity (veh/h)	159	174	659	131	169	559	1113			1023		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	105	79	663	453								
Volume Left	47	68	105	5								
Volume Right	53	5	74	116								
cSH	258	140	1113	1023								
Volume to Capacity	0.41	0.56	0.09	0.01								
Queue Length 95th (ft)	47	70	8	0								
Control Delay (s)	28.2	59.4	2.4	0.2								
Lane LOS	D	F	A	A								
Approach Delay (s)	28.2	59.4	2.4	0.2								
Approach LOS	D	F										
Intersection Summary												
Average Delay			7.2									
Intersection Capacity Utilization			74.9%		ICU Level of Service				D			
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

20: OR 213 & Glen Oak Road-Caufield Road

Oregon City TSP Update
2035 Financially Constrained System- DHV (PM Peak)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	35	5	195	10	70	5	630	85	40	1235	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.99			1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1753			1814	1599	1357	1787		1805	1820	
Flt Permitted		0.63			0.67	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1134			1280	1599	1357	1787		1805	1820	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	37	5	205	11	74	5	663	89	42	1300	105
RTOR Reduction (vph)	0	2	0	0	0	61	0	4	0	0	2	0
Lane Group Flow (vph)	0	72	0	0	216	13	5	748	0	42	1403	0
Heavy Vehicles (%)	4%	0%	50%	0%	0%	1%	33%	5%	0%	0%	3%	6%
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4						
Actuated Green, G (s)		21.9			21.9	21.9	0.8	80.8		7.8	87.8	
Effective Green, g (s)		22.4			22.4	22.4	0.8	82.8		7.8	89.8	
Actuated g/C Ratio		0.18			0.18	0.18	0.01	0.66		0.06	0.72	
Clearance Time (s)		4.5			4.5	4.5	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.5			2.5	2.5	2.3	4.5		2.3	4.5	
Lane Grp Cap (vph)		203			229	287	9	1184		113	1307	
v/s Ratio Prot							0.00	0.42		c0.02	c0.77	
v/s Ratio Perm		0.06			c0.17	0.01						
v/c Ratio		0.35			0.94	0.05	0.56	0.63		0.37	1.07	
Uniform Delay, d1		44.9			50.7	42.5	61.9	12.2		56.2	17.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.31	2.31	
Incremental Delay, d2		0.8			43.6	0.0	43.5	2.6		1.0	45.6	
Delay (s)		45.7			94.3	42.5	105.4	14.8		74.6	86.3	
Level of Service		D			F	D	F	B		E	F	
Approach Delay (s)		45.7			81.1			15.4			86.0	
Approach LOS		D			F			B			F	
Intersection Summary												
HCM Average Control Delay		63.5			HCM Level of Service			E				
HCM Volume to Capacity ratio		1.01										
Actuated Cycle Length (s)		125.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		95.7%			ICU Level of Service			F				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

21: Glen Oak Road & Beaver Creek Road

Oregon City TSP Update
2035 Financially Constrained System- DHV (PM Peak)

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	20	1215	125	25	530	35	50	20	35	10	10	60
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	21	1279	132	26	558	37	53	21	37	11	11	63
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLT			TWLT							
Median storage veh		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	595			1411			2066	2034	1345	1997	2082	576
vC1, stage 1 conf vol							1387	1387		629	629	
vC2, stage 2 conf vol							679	647		1368	1453	
vCu, unblocked vol	595			1411			2066	2034	1345	1997	2082	576
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			95			65	89	80	89	93	88
cM capacity (veh/h)	981			490			151	185	184	97	155	517
Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	NE 2	SW 1	SW 2				
Volume Total	21	1411	26	595	53	58	11	74				
Volume Left	21	0	26	0	53	0	11	0				
Volume Right	0	132	0	37	0	37	0	63				
cSH	981	1700	490	1700	151	184	97	387				
Volume to Capacity	0.02	0.83	0.05	0.35	0.35	0.31	0.11	0.19				
Queue Length 95th (ft)	2	0	4	0	36	32	9	17				
Control Delay (s)	8.7	0.0	12.8	0.0	41.0	33.3	46.6	16.5				
Lane LOS	A		B		E	D	E	C				
Approach Delay (s)	0.1		0.5		36.9		20.2					
Approach LOS					E		C					
Intersection Summary												
Average Delay			2.8									
Intersection Capacity Utilization			87.6%		ICU Level of Service				E			
Analysis Period (min)			15									

2035 Planned Transportation System SIDRA and HCM Capacity Analysis Results

HCM Signalized Intersection Capacity Analysis

1: Highway 99E & Dunes Drive

Oregon City TSP Update

2035 Planned System- DHV (PM Peak)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	145	15	115	225	20	270	70	1395	225	380	1815	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.87		1.00	0.86		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1649	1519		1768	1592		1719	4890		1770	4735	
Flt Permitted	0.32	1.00		0.61	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	549	1519		1129	1592		1719	4890		1770	4735	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	149	15	119	232	21	278	72	1438	232	392	1871	423
RTOR Reduction (vph)	0	55	0	0	209	0	0	20	0	0	23	0
Lane Group Flow (vph)	149	79	0	232	91	0	72	1650	0	392	2271	0
Confl. Peds. (#/hr)	10		2	2		10	3					3
Heavy Vehicles (%)	9%	0%	8%	2%	12%	0%	5%	4%	3%	2%	6%	6%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)	27.0	27.0		27.0	27.0		4.0	33.6		35.9	65.5	
Effective Green, g (s)	27.5	27.5		27.5	27.5		4.0	34.6		35.9	66.5	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.04	0.31		0.33	0.60	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.3	4.8		2.3	4.8	
Lane Grp Cap (vph)	137	380		282	398		63	1538		578	2863	
v/s Ratio Prot		0.05			0.06		0.04	c0.34		0.22	c0.48	
v/s Ratio Perm	c0.27			0.21								
v/c Ratio	1.09	0.21		0.82	0.23		1.14	1.07		0.68	0.79	
Uniform Delay, d1	41.2	32.6		38.9	32.8		53.0	37.7		32.1	16.5	
Progression Factor	1.00	1.00		1.00	1.00		0.87	0.78		1.00	1.00	
Incremental Delay, d2	102.3	0.2		17.0	0.2		125.3	40.1		2.7	2.4	
Delay (s)	143.5	32.8		55.9	33.0		171.2	69.6		34.8	18.9	
Level of Service	F	C		E	C		F	E		C	B	
Approach Delay (s)		91.1			43.0			73.8			21.2	
Approach LOS		F			D			E			C	
Intersection Summary												
HCM Average Control Delay			44.7			HCM Level of Service				D		
HCM Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			98.2%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: Highway 99E & I-205 SB Ramps

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1255	455	1285	540	640	1515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	3.5	4.0	4.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3367	1553	4988	1568	3367	4988
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3367	1553	4988	1568	3367	4988
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1321	479	1353	568	674	1595
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1321	479	1353	568	674	1595
Heavy Vehicles (%)	4%	4%	4%	3%	4%	4%
Turn Type	NA	pm+ov	NA	Free	Prot	NA
Protected Phases	4	5	6		5	2
Permitted Phases		4		Free		
Actuated Green, G (s)	44.0	67.0	30.5	110.0	23.0	57.5
Effective Green, g (s)	44.0	67.0	31.0	110.0	23.0	58.0
Actuated g/C Ratio	0.40	0.61	0.28	1.00	0.21	0.53
Clearance Time (s)	4.0	4.0	4.5		4.0	4.5
Vehicle Extension (s)	2.3	2.3	4.7		2.3	4.7
Lane Grp Cap (vph)	1347	1002	1406	1568	704	2630
v/s Ratio Prot	c0.39	0.10	c0.27		c0.20	0.32
v/s Ratio Perm		0.21		0.36		
v/c Ratio	0.98	0.48	0.96	0.36	0.96	0.61
Uniform Delay, d1	32.6	11.9	38.9	0.0	43.0	18.1
Progression Factor	1.00	1.00	0.35	1.00	0.93	0.47
Incremental Delay, d2	19.9	0.2	11.7	0.4	18.3	0.7
Delay (s)	52.5	12.1	25.5	0.4	58.3	9.2
Level of Service	D	B	C	A	E	A
Approach Delay (s)	41.7		18.1			23.8
Approach LOS	D		B			C
Intersection Summary						
HCM Average Control Delay			27.3		HCM Level of Service	C
HCM Volume to Capacity ratio			0.97			
Actuated Cycle Length (s)			110.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			88.9%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

3: Highway 99E & I-205 NB Ramps

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	625	550	1275	935	530	2240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	5036	1583	1736	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	5036	1583	1736	5085
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	651	573	1328	974	552	2333
RTOR Reduction (vph)	0	0	0	47	0	0
Lane Group Flow (vph)	651	573	1328	927	552	2333
Heavy Vehicles (%)	2%	2%	3%	2%	4%	2%
Turn Type	NA	Free	NA	pm+ov	Prot	NA
Protected Phases	4		6	4	5	2
Permitted Phases		Free		6		
Actuated Green, G (s)	32.0	110.0	29.0	61.0	35.0	68.0
Effective Green, g (s)	33.0	110.0	30.0	63.0	35.0	69.0
Actuated g/C Ratio	0.30	1.00	0.27	0.57	0.32	0.63
Clearance Time (s)	5.0		5.0	5.0	4.0	5.0
Vehicle Extension (s)	2.3		4.8	2.3	2.3	4.8
Lane Grp Cap (vph)	1030	1583	1373	964	552	3190
v/s Ratio Prot	0.19		0.26	c0.29	c0.32	0.46
v/s Ratio Perm		0.36		0.30		
v/c Ratio	0.63	0.36	0.97	0.96	1.00	0.73
Uniform Delay, d1	33.3	0.0	39.5	22.4	37.5	14.1
Progression Factor	1.00	1.00	0.87	1.03	1.16	1.33
Incremental Delay, d2	1.0	0.6	16.7	19.1	29.8	0.9
Delay (s)	34.3	0.6	51.2	42.1	73.4	19.7
Level of Service	C	A	D	D	E	B
Approach Delay (s)	18.5		47.4			29.9
Approach LOS	B		D			C
Intersection Summary						
HCM Average Control Delay			34.0		HCM Level of Service	C
HCM Volume to Capacity ratio			0.97			
Actuated Cycle Length (s)			110.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			93.9%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis 4: Main Street & 14th Street

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control	Stop				Stop			Stop			Stop	
Volume (vph)	65	475	145	65	395	10	50	95	185	40	35	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	68	500	153	68	416	11	53	100	195	42	37	26
Direction, Lane #	SE 1	SE 2	NW 1	NE 1	NE 2	SW 1						
Volume Total (vph)	68	653	495	153	195	105						
Volume Left (vph)	68	0	68	53	0	42						
Volume Right (vph)	0	153	11	0	195	26						
Hadj (s)	0.50	-0.14	0.04	0.22	-0.61	-0.05						
Departure Headway (s)	7.7	7.1	7.4	8.3	7.5	9.0						
Degree Utilization, x	0.15	1.28	1.01	0.35	0.41	0.26						
Capacity (veh/h)	457	519	495	425	471	386						
Control Delay (s)	10.8	161.2	70.6	14.6	14.4	15.2						
Approach Delay (s)	147.0		70.6	14.5		15.2						
Approach LOS	F		F	B		C						
Intersection Summary												
Delay			88.4									
HCM Level of Service			F									
Intersection Capacity Utilization			81.6%	ICU Level of Service		D						
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

5: Washington Street & 12th Street

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	55	130	205	5	55	80	185	520	5	115	805	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1795	1702		1803	1704		1736	1860		1805	1877	
Flt Permitted	0.63	1.00		0.27	1.00		0.10	1.00		0.38	1.00	
Satd. Flow (perm)	1199	1702		510	1704		186	1860		718	1877	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	137	216	5	58	84	195	547	5	121	847	11
RTOR Reduction (vph)	0	79	0	0	66	0	0	0	0	0	0	0
Lane Group Flow (vph)	58	274	0	5	76	0	195	552	0	121	858	0
Confl. Peds. (#/hr)	3		1	1		3	1					1
Confl. Bikes (#/hr)									2			1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	4%	2%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		6			2		7	4		3	8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	14.9	14.9		14.9	14.9		46.4	39.3		39.8	36.0	
Effective Green, g (s)	14.9	14.9		14.9	14.9		46.4	39.3		39.8	36.0	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.66	0.56		0.57	0.51	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	255	362		109	363		281	1044		467	965	
v/s Ratio Prot		c0.16			0.04		c0.07	0.30		0.01	c0.46	
v/s Ratio Perm	0.05			0.01			0.39			0.13		
v/c Ratio	0.23	0.76		0.05	0.21		0.69	0.53		0.26	0.89	
Uniform Delay, d1	22.8	25.9		21.9	22.7		13.8	9.6		7.3	15.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	8.8		0.2	0.3		7.2	0.5		0.3	10.0	
Delay (s)	23.2	34.6		22.1	23.0		21.0	10.1		7.6	25.2	
Level of Service	C	C		C	C		C	B		A	C	
Approach Delay (s)		33.0			23.0			12.9			23.0	
Approach LOS		C			C			B			C	
Intersection Summary												
HCM Average Control Delay			21.5			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			70.0			Sum of lost time (s)				16.0		
Intersection Capacity Utilization			89.4%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

6: 7th Street/Singer Hill & High Street

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	60	120	115	385	525	90
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	63	126	121	405	553	95
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		1				
Median type				TWLT	None	
Median storage (veh)				2		
Upstream signal (ft)				424	1279	
pX, platoon unblocked	0.95					
vC, conflicting volume	1247	600	647			
vC1, stage 1 conf vol	600					
vC2, stage 2 conf vol	647					
vCu, unblocked vol	1234	600	647			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	75	87			
cM capacity (veh/h)	375	505	948			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	189	121	405	647		
Volume Left	63	121	0	0		
Volume Right	126	0	0	95		
cSH	757	948	1700	1700		
Volume to Capacity	0.25	0.13	0.24	0.38		
Queue Length 95th (ft)	25	11	0	0		
Control Delay (s)	15.2	9.4	0.0	0.0		
Lane LOS	C	A				
Approach Delay (s)	15.2	2.2		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay		2.9				
Intersection Capacity Utilization		52.8%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Signalized Intersection Capacity Analysis

7: High Street & S 2nd Street

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	125	205	575	25	180	5	180	90	5	20	100	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0			4.0			4.0	
Lane Util. Factor		1.00	1.00		1.00			1.00			1.00	
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			0.94	
Flt Protected		0.98	1.00		0.99			0.97			1.00	
Satd. Flow (prot)		1828	1599		1851			1835			1731	
Flt Permitted		0.81	1.00		0.94			0.71			0.96	
Satd. Flow (perm)		1504	1599		1756			1350			1666	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	130	214	599	26	188	5	188	94	5	21	104	99
RTOR Reduction (vph)	0	0	336	0	2	0	0	1	0	0	51	0
Lane Group Flow (vph)	0	344	263	0	217	0	0	286	0	0	173	0
Confl. Peds. (#/hr)									5	5		
Heavy Vehicles (%)	2%	2%	1%	0%	2%	0%	0%	0%	0%	0%	2%	4%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		17.9	17.9		17.9			14.9			14.9	
Effective Green, g (s)		17.9	17.9		17.9			14.9			14.9	
Actuated g/C Ratio		0.44	0.44		0.44			0.37			0.37	
Clearance Time (s)		4.0	4.0		4.0			4.0			4.0	
Vehicle Extension (s)		3.0	3.0		3.0			3.0			3.0	
Lane Grp Cap (vph)		660	702		770			493			608	
v/s Ratio Prot												
v/s Ratio Perm		c0.23	0.16		0.12			c0.21			0.10	
v/c Ratio		0.52	0.37		0.28			0.58			0.28	
Uniform Delay, d1		8.3	7.7		7.3			10.4			9.2	
Progression Factor		1.00	1.00		1.00			1.00			1.00	
Incremental Delay, d2		0.7	0.3		0.2			1.7			0.3	
Delay (s)		9.1	8.0		7.5			12.1			9.4	
Level of Service		A	A		A			B			A	
Approach Delay (s)		8.4			7.5			12.1			9.4	
Approach LOS		A			A			B			A	
Intersection Summary												
HCM Average Control Delay			9.1				HCM Level of Service				A	
HCM Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			40.8				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			69.4%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

MOVEMENT SUMMARY

Site: 7th/Molalla/Taylor/Division -
Planned System

7th/Molalla/Taylor/Division
2035 Planned System - PM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: RoadName											
3L	L	617	4.0	0.800	9.6	LOS A	13.9	356.6	0.85	0.63	24.3
8R	R	284	3.0	0.801	4.9	LOS A	13.9	356.6	0.85	0.57	24.6
Approach		901	3.7	0.801	8.1	LOS A	13.9	356.6	0.85	0.61	24.4
South East: RoadName											
11L	L	91	4.0	0.314	17.9	LOS B	2.5	64.5	0.90	0.98	21.8
16T	T	32	1.0	0.316	10.6	LOS B	2.5	64.5	0.90	0.92	23.1
16R	R	1	1.0	0.351	11.9	LOS B	2.5	64.5	0.90	0.93	23.0
Approach		123	3.2	0.315	16.0	LOS B	2.5	64.5	0.90	0.96	22.1
North East: RoadName											
17L	L	59	3.9	0.149	14.0	LOS B	1.1	28.4	0.80	0.86	22.9
14T	T	1	1.0	0.150	8.6	LOS A	1.1	28.4	0.80	0.76	24.0
14R	R	11	1.0	0.150	9.9	LOS A	1.1	28.4	0.80	0.79	23.8
Approach		71	3.5	0.149	13.3	LOS B	1.1	28.4	0.80	0.85	23.0
North West: RoadName											
15L	L	42	1.0	0.979	27.9	LOS C	42.2	1080.0	1.00	1.09	19.2
12T	T	79	1.0	0.987	21.7	LOS C	42.2	1080.0	1.00	1.09	19.7
12R	R	974	3.1	0.991	21.7	LOS C	42.2	1080.0	1.00	1.10	19.7
Approach		1095	2.8	0.990	21.9	LOS C	42.2	1080.0	1.00	1.09	19.7
All Vehicles		2189	3.2	0.990	15.6	LOS B	42.2	1080.0	0.93	0.88	21.7

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS C. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout LOS Method: Same as Signalised Intersections.

Roundabout Capacity Model: SIDRA Standard.

Processed: Tuesday, August 28, 2012 3:41:45 PM

SIDRA INTERSECTION 5.0.5.1510

Project: X:\Projects\2010\IP10068-008 (Oregon City TSP Update)\Analysis\2035 Financially Constrained System

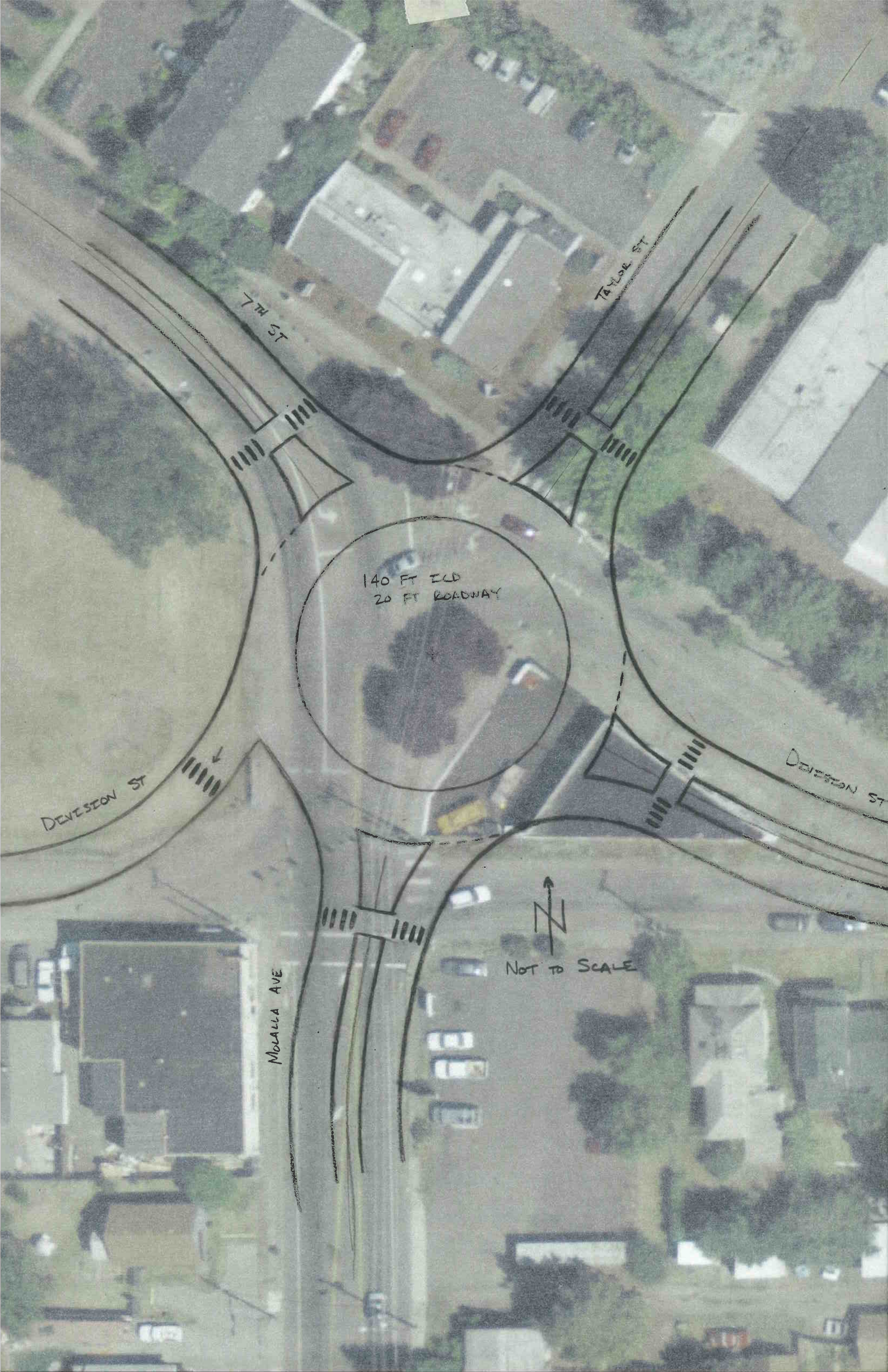
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SIDRA
INTERSECTION



Taylor St

7th St

140 FT ICD
20 FT ROADWAY

Devesion St

Devesion St

Molalla Ave



NOT TO SCALE

HCM Signalized Intersection Capacity Analysis

10: South End Road & Warner Parrott Road-Lawton Road

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	45	5	190	50	120	15	175	170	125	500	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.97	1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00			0.99	1.00	0.99	1.00		1.00	1.00	
Frt		0.99			1.00	0.85	1.00	0.93		1.00	0.99	
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1844			1778	1548	1793	1692		1796	1847	
Flt Permitted		0.87			0.72	1.00	0.32	1.00		0.51	1.00	
Satd. Flow (perm)		1627			1329	1548	602	1692		960	1847	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	47	5	200	53	126	16	184	179	132	526	53
RTOR Reduction (vph)	0	3	0	0	0	86	0	60	0	0	6	0
Lane Group Flow (vph)	0	75	0	0	253	40	16	303	0	132	573	0
Confl. Peds. (#/hr)	9		8	8		9	13		6	6		13
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	2%	2%	1%	0%	3%	2%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)		13.8			13.8	13.8	22.2	22.2		22.2	22.2	
Effective Green, g (s)		13.8			13.8	13.8	22.2	22.2		22.2	22.2	
Actuated g/C Ratio		0.31			0.31	0.31	0.50	0.50		0.50	0.50	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		510			417	486	304	854		484	932	
v/s Ratio Prot								0.18			c0.31	
v/s Ratio Perm		0.05			c0.19	0.03	0.03			0.14		
v/c Ratio		0.15			0.61	0.08	0.05	0.35		0.27	0.61	
Uniform Delay, d1		10.9			12.8	10.6	5.5	6.6		6.3	7.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			2.5	0.1	0.1	0.3		0.3	1.2	
Delay (s)		11.0			15.3	10.7	5.6	6.8		6.6	9.0	
Level of Service		B			B	B	A	A		A	A	
Approach Delay (s)		11.0			13.8			6.8			8.6	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM Average Control Delay		9.5										
HCM Volume to Capacity ratio		0.61										
Actuated Cycle Length (s)		44.0										
Intersection Capacity Utilization		62.6%										
Analysis Period (min)		15										
c Critical Lane Group												

MOVEMENT SUMMARY

Site: Southend Road/Partlow Road
- Planned System

Southend Rd/Partlow Rd
2035 Planned System - PM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South East: Partlow Road											
11L	L	142	1.0	0.213	14.9	LOS B	1.5	37.7	0.58	0.77	28.6
16T	T	5	0.0	0.211	7.7	LOS A	1.5	37.7	0.58	0.61	30.9
16R	R	26	3.0	0.214	9.1	LOS A	1.5	37.7	0.58	0.66	30.7
Approach		174	1.3	0.213	13.8	LOS B	1.5	37.7	0.58	0.75	28.9
North East: South End Road											
17L	L	100	1.0	0.667	15.0	LOS B	8.2	205.6	0.71	0.81	29.3
14T	T	589	1.0	0.669	7.8	LOS A	8.2	205.6	0.71	0.65	30.9
14R	R	11	0.0	0.658	9.0	LOS A	8.2	205.6	0.71	0.68	31.0
Approach		700	1.0	0.669	8.8	LOS B	8.2	205.6	0.71	0.67	30.7
North West: Lafayette Avenue											
15L	L	5	0.0	0.076	18.8	LOS B	0.6	14.1	0.80	0.86	27.0
12T	T	11	0.0	0.076	11.6	LOS B	0.6	14.1	0.80	0.76	29.4
12R	R	21	0.0	0.076	12.8	LOS B	0.6	14.1	0.80	0.79	29.1
Approach		37	0.0	0.076	13.3	LOS B	0.6	14.1	0.80	0.79	28.8
South West: South End Road											
13L	L	53	0.0	0.414	13.1	LOS B	3.8	95.8	0.42	0.79	29.9
18T	T	316	0.0	0.415	5.9	LOS A	3.8	95.8	0.42	0.48	32.4
18R	R	111	1.0	0.416	7.2	LOS A	3.8	95.8	0.42	0.55	32.0
Approach		479	0.2	0.415	7.0	LOS B	3.8	95.8	0.42	0.53	32.0
All Vehicles		1389	0.7	0.669	9.0	LOS A	8.2	205.6	0.60	0.63	30.8

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout LOS Method: Same as Signalised Intersections.

Roundabout Capacity Model: SIDRA Standard.

Processed: Tuesday, August 28, 2012 3:45:20 PM

SIDRA INTERSECTION 5.0.5.1510

Project: X:\Projects\2010\IP10068-008 (Oregon City TSP Update)\Analysis\2035 Financially Constrained System

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INTERSECTION



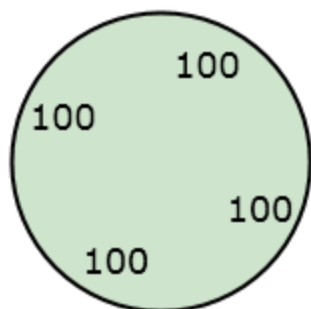


Lafayette Avenue

South End Road

South End Road

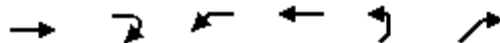
Partlow Road



HCM Unsignalized Intersection Capacity Analysis

12: Central Point Road & Warner Parrott Road

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	345	120	475	410	0	400
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	363	126	500	432	0	421
Pedestrians				1	5	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			494		1863	432
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			494		1863	432
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			53		100	32
cM capacity (veh/h)			1075		42	622
Direction, Lane #	EB 1	WB 1	WB 2	NE 1		
Volume Total	489	500	432	421		
Volume Left	0	500	0	0		
Volume Right	126	0	0	421		
cSH	1700	1075	1700	622		
Volume to Capacity	0.29	0.47	0.25	0.68		
Queue Length 95th (ft)	0	63	0	130		
Control Delay (s)	0.0	11.2	0.0	22.0		
Lane LOS		B		C		
Approach Delay (s)	0.0	6.0		22.0		
Approach LOS				C		
Intersection Summary						
Average Delay			8.1			
Intersection Capacity Utilization			65.6%	ICU Level of Service		C
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

13: Clairmont Way/Fred Meyer & Molalla Avenue

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	60	645	10	35	830	100	155	25	60	15	35	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.96		1.00	0.96		0.95	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		0.95	1.00		1.00	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		0.93	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.99	
Satd. Flow (prot)	1805	1876		1805	1863	1542		1736	1498		1664	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.61	1.00		0.94	
Satd. Flow (perm)	1805	1876		1805	1863	1542		1106	1498		1584	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	679	11	37	874	105	163	26	63	16	37	58
RTOR Reduction (vph)	0	0	0	0	0	16	0	0	51	0	37	0
Lane Group Flow (vph)	63	690	0	37	874	89	0	189	12	0	74	0
Confl. Peds. (#/hr)	7		13	13		7	27		10	10		27
Heavy Vehicles (%)	0%	1%	0%	0%	2%	1%	0%	0%	3%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	1	6		5	2			8				4
Permitted Phases						2	8		8	4		
Actuated Green, G (s)	6.4	71.7		4.0	69.3	69.3		21.3	21.3		21.3	
Effective Green, g (s)	6.4	72.2		4.0	69.8	69.8		21.8	21.8		21.8	
Actuated g/C Ratio	0.06	0.66		0.04	0.63	0.63		0.20	0.20		0.20	
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5		4.5	4.5		4.5	
Vehicle Extension (s)	2.5	3.0		2.5	3.0	3.0		2.5	2.5		2.5	
Lane Grp Cap (vph)	105	1231		66	1182	978		219	297		314	
v/s Ratio Prot	0.03	c0.37		0.02	c0.47							
v/s Ratio Perm						0.06		c0.17	0.01		0.05	
v/c Ratio	0.60	0.56		0.56	0.74	0.09		0.86	0.04		0.24	
Uniform Delay, d1	50.6	10.3		52.1	13.8	7.8		42.7	35.7		37.1	
Progression Factor	1.09	1.09		1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	6.1	1.5		8.5	4.2	0.2		27.5	0.0		0.3	
Delay (s)	61.0	12.7		60.7	18.0	8.0		70.2	35.7		37.4	
Level of Service	E	B		E	B	A		E	D		D	
Approach Delay (s)		16.8			18.5			61.5			37.4	
Approach LOS		B			B			E			D	
Intersection Summary												
HCM Average Control Delay			24.0				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			73.1%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

14: Gaffney Lane & Molalla Avenue

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	50	435	160	190	635	80	60	80	75	140	80	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.95		0.98			1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			0.98	1.00
Frt	1.00	0.96		1.00	1.00	0.85		0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.97	1.00
Satd. Flow (prot)	1805	1785		1787	1845	1509		1693			1789	1615
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.69			0.57	1.00
Satd. Flow (perm)	1805	1785		1787	1845	1509		1189			1048	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	458	168	200	668	84	63	84	79	147	84	232
RTOR Reduction (vph)	0	11	0	0	0	17	0	18	0	0	0	173
Lane Group Flow (vph)	53	615	0	200	668	67	0	208	0	0	231	59
Confl. Peds. (#/hr)	9		16	16		9			16	16		
Heavy Vehicles (%)	0%	0%	1%	1%	3%	2%	0%	6%	2%	1%	2%	0%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases						2	8			4		4
Actuated Green, G (s)	6.2	52.7		17.9	64.4	64.4		26.4			26.4	26.4
Effective Green, g (s)	6.2	53.2		17.9	64.9	64.9		26.9			26.9	26.9
Actuated g/C Ratio	0.06	0.48		0.16	0.59	0.59		0.24			0.24	0.24
Clearance Time (s)	4.0	4.5		4.0	4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)	2.5	3.0		2.5	3.0	3.0		2.5			2.5	2.5
Lane Grp Cap (vph)	102	863		291	1089	890		291			256	395
v/s Ratio Prot	0.03	c0.34		0.11	c0.36							
v/s Ratio Perm						0.04		0.17			c0.22	0.04
v/c Ratio	0.52	0.71		0.69	0.61	0.08		0.71			0.90	0.15
Uniform Delay, d1	50.5	22.4		43.4	14.5	9.7		38.0			40.3	32.6
Progression Factor	1.00	1.00		0.73	0.52	0.57		1.00			1.00	1.00
Incremental Delay, d2	3.3	5.0		4.4	1.9	0.1		7.5			31.7	0.1
Delay (s)	53.8	27.3		36.3	9.4	5.6		45.6			72.0	32.7
Level of Service	D	C		D	A	A		D			E	C
Approach Delay (s)		29.4			14.7			45.6			52.3	
Approach LOS		C			B			D			D	
Intersection Summary												
HCM Average Control Delay			29.5				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			78.2%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

15: Molalla Avenue & Fir Street

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	50	70	575	50	45	805
Sign Control	Stop		Free		Free	Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	52	73	599	52	47	839
Pedestrians	6		1			
Lane Width (ft)	12.0		12.0			
Walking Speed (ft/s)	4.0		4.0			
Percent Blockage	1		0			
Right turn flare (veh)						
Median type			TWLT		TWLT	
Median storage veh			2		2	
Upstream signal (ft)					481	
pX, platoon unblocked	0.76					
vC, conflicting volume	1564	631			657	
vC1, stage 1 conf vol	631					
vC2, stage 2 conf vol	933					
vCu, unblocked vol	1584	631			657	
tC, single (s)	6.4	6.2			4.3	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.4	
p0 queue free %	82	85			94	
cM capacity (veh/h)	287	477			847	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2		
Volume Total	125	651	47	839		
Volume Left	52	0	47	0		
Volume Right	73	52	0	0		
cSH	374	1700	847	1700		
Volume to Capacity	0.33	0.38	0.06	0.49		
Queue Length 95th (ft)	36	0	4	0		
Control Delay (s)	19.4	0.0	9.5	0.0		
Lane LOS	C		A			
Approach Delay (s)	19.4	0.0	0.5			
Approach LOS	C					
Intersection Summary						
Average Delay		1.7				
Intersection Capacity Utilization		56.1%		ICU Level of Service	B	
Analysis Period (min)		15				

HCM Signalized Intersection Capacity Analysis

16: OR 213 & Beaver Creek Road

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	490	950	70	110	665	535	65	765	130	980	1510	665
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3522		3502	3610	1583	1703	3505	1599	3433	3505	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3522		3502	3610	1583	1703	3505	1599	3433	3505	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	516	1000	74	116	700	563	68	805	137	1032	1589	700
RTOR Reduction (vph)	0	5	0	0	0	364	0	0	69	0	0	275
Lane Group Flow (vph)	516	1069	0	116	700	199	68	805	68	1032	1589	425
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Prot	Prot	NA	Prot	Prot	NA	Prot
Protected Phases	7	4		3	8	8	1	6	6	5	2	2
Permitted Phases												
Actuated Green, G (s)	15.2	31.1		4.1	20.0	20.0	4.0	22.3	22.3	31.0	49.3	49.3
Effective Green, g (s)	15.7	31.6		4.6	20.5	20.5	4.5	24.3	24.3	31.5	51.3	51.3
Actuated g/C Ratio	0.14	0.28		0.04	0.18	0.18	0.04	0.22	0.22	0.28	0.46	0.46
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	481	994		144	661	290	68	760	347	966	1605	725
v/s Ratio Prot	0.15	c0.30		0.03	c0.19	0.13	0.04	0.23	0.04	c0.30	c0.45	0.27
v/s Ratio Perm												
v/c Ratio	1.07	1.08		0.81	1.06	0.69	1.00	1.06	0.20	1.07	0.99	0.59
Uniform Delay, d1	48.1	40.2		53.3	45.8	42.8	53.8	43.9	35.9	40.2	30.1	22.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	61.9	51.1		26.0	51.7	5.8	109.1	49.5	0.5	49.0	20.1	1.7
Delay (s)	110.1	91.3		79.3	97.4	48.5	162.9	93.3	36.4	89.3	50.2	24.2
Level of Service	F	F		E	F	D	F	F	D	F	D	C
Approach Delay (s)		97.4			75.9			90.3			56.9	
Approach LOS		F			E			F			E	
Intersection Summary												
HCM Average Control Delay			73.9			HCM Level of Service				E		
HCM Volume to Capacity ratio			1.05									
Actuated Cycle Length (s)			112.0			Sum of lost time (s)			15.0			
Intersection Capacity Utilization			98.1%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

17: Beavercreek Road & Maple Lane Road

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	475	1440	115	30	815	55	180	110	110	60	70	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3499		1805	3510		1803	1758		1805	1900	1578
Flt Permitted	0.95	1.00		0.95	1.00		0.45	1.00		0.42	1.00	1.00
Satd. Flow (perm)	1770	3499		1805	3510		860	1758		790	1900	1578
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	500	1516	121	32	858	58	189	116	116	63	74	332
RTOR Reduction (vph)	0	4	0	0	3	0	0	26	0	0	0	75
Lane Group Flow (vph)	500	1633	0	32	913	0	189	206	0	63	74	257
Confl. Peds. (#/hr)			1	1			2					2
Heavy Vehicles (%)	2%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	2%
Turn Type	Prot	NA		Prot	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases							8			4		4
Actuated Green, G (s)	38.7	80.9		3.1	45.3		29.8	18.2		16.5	9.4	48.1
Effective Green, g (s)	38.7	81.4		3.1	45.8		30.3	18.7		17.5	9.9	48.1
Actuated g/C Ratio	0.31	0.64		0.02	0.36		0.24	0.15		0.14	0.08	0.38
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	4.0
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	540	2246		44	1268		327	259		170	148	599
v/s Ratio Prot	c0.28	c0.47		0.02	0.26		c0.07	c0.12		0.02	0.04	0.13
v/s Ratio Perm							0.06			0.03		0.03
v/c Ratio	0.93	0.73		0.73	0.72		0.58	0.80		0.37	0.50	0.43
Uniform Delay, d1	42.7	15.2		61.4	35.0		41.1	52.2		48.9	56.1	29.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	21.9	2.1		43.0	3.5		2.0	15.1		1.0	1.9	0.4
Delay (s)	64.6	17.3		104.4	38.5		43.2	67.3		49.8	58.0	29.5
Level of Service	E	B		F	D		D	E		D	E	C
Approach Delay (s)		28.4			40.7			56.5			36.8	
Approach LOS		C			D			E			D	
Intersection Summary												
HCM Average Control Delay			35.3			HCM Level of Service				D		
HCM Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			126.8			Sum of lost time (s)				12.0		
Intersection Capacity Utilization			79.8%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis 18: Maple Lane Road & Thayer Road

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)



Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	35	10	610	30	10	410
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	37	11	642	32	11	432
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			391			
pX, platoon unblocked						
vC, conflicting volume	1111	658			674	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1111	658			674	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	84	98			99	
cM capacity (veh/h)	231	468			927	
Direction, Lane #	WB 1	NE 1	SW 1	SW 2		
Volume Total	47	674	11	432		
Volume Left	37	0	11	0		
Volume Right	11	32	0	0		
cSH	260	1700	927	1700		
Volume to Capacity	0.18	0.40	0.01	0.25		
Queue Length 95th (ft)	16	0	1	0		
Control Delay (s)	21.9	0.0	8.9	0.0		
Lane LOS	C		A			
Approach Delay (s)	21.9	0.0	0.2			
Approach LOS	C					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			43.9%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 19: Maple Lane Road & Grove Way

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Volume (veh/h)	45	5	50	60	5	5	100	390	130	5	310	110
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	47	5	53	63	5	5	105	411	137	5	326	116
Approach Volume (veh/h)	105			74			653			447		
Crossing Volume (veh/h)	395			563			58			174		
High Capacity (veh/h)	1015			887			1324			1209		
High v/c (veh/h)	0.10			0.08			0.49			0.37		
Low Capacity (veh/h)	827			714			1106			1001		
Low v/c (veh/h)	0.13			0.10			0.59			0.45		
Intersection Summary												
Maximum v/c High	0.49											
Maximum v/c Low	0.59											
Intersection Capacity Utilization	74.1%			ICU Level of Service					D			

HCM Signalized Intersection Capacity Analysis

20: OR 213 & Glen Oak Road-Caufield Road

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	35	10	115	15	115	5	730	75	35	1495	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1685			1820	1599	1357	3405		1805	3471	
Flt Permitted		0.77			0.66	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1323			1260	1599	1357	3405		1805	3471	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	37	11	121	16	121	5	768	79	37	1574	89
RTOR Reduction (vph)	0	5	0	0	0	103	0	5	0	0	2	0
Lane Group Flow (vph)	0	75	0	0	137	18	5	842	0	37	1661	0
Heavy Vehicles (%)	4%	0%	50%	0%	0%	1%	33%	5%	0%	0%	3%	6%
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4						
Actuated Green, G (s)		17.9			17.9	17.9	0.8	87.4		5.2	91.8	
Effective Green, g (s)		18.4			18.4	18.4	0.8	89.4		5.2	93.8	
Actuated g/C Ratio		0.15			0.15	0.15	0.01	0.72		0.04	0.75	
Clearance Time (s)		4.5			4.5	4.5	4.0	6.0		4.0	6.0	
Vehicle Extension (s)		2.5			2.5	2.5	2.3	4.5		2.3	4.5	
Lane Grp Cap (vph)		195			185	235	9	2435		75	2605	
v/s Ratio Prot							0.00	0.25		c0.02	c0.48	
v/s Ratio Perm		0.06			c0.11	0.01						
v/c Ratio		0.38			0.74	0.08	0.56	0.35		0.49	0.64	
Uniform Delay, d1		48.2			51.0	46.0	61.9	6.7		58.6	7.5	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.19	1.43	
Incremental Delay, d2		0.9			14.0	0.1	43.5	0.4		2.7	1.1	
Delay (s)		49.1			65.0	46.1	105.4	7.1		72.3	11.8	
Level of Service		D			E	D	F	A		E	B	
Approach Delay (s)		49.1			56.1			7.7			13.1	
Approach LOS		D			E			A			B	
Intersection Summary												
HCM Average Control Delay		16.3										
HCM Volume to Capacity ratio		0.64										
Actuated Cycle Length (s)		125.0										
Intersection Capacity Utilization		64.5%										
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis 21: Glen Oak Road & Beaver Creek Road

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Right Turn Channelized												
Volume (veh/h)	15	1145	125	10	485	45	60	20	10	10	10	60
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	16	1205	132	11	511	47	63	21	11	11	11	63
Approach Volume (veh/h)		1353			568			95			84	
Crossing Volume (veh/h)		32			100			1232#			584	
High Capacity (veh/h)		1351			1281			514			873	
High v/c (veh/h)		1.00			0.44			0.18			0.10	
Low Capacity (veh/h)		1131			1067			391			701	
Low v/c (veh/h)		1.20			0.53			0.24			0.12	
Intersection Summary												
Maximum v/c High			1.00									
Maximum v/c Low			1.20									
Intersection Capacity Utilization			86.3%		ICU Level of Service					E		
# Crossing flow exceeds 1200, method is not applicable												

Main Street/14th Street Supplemental Improvement HCM Capacity Analysis Results

HCM Unsignalized Intersection Capacity Analysis

4: Main Street & 14th Street

Oregon City TSP Update

2035 Financially Constrained System- DHV (PM Peak)

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	75	480	145	0	0	0	0	145	190	340	60	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	79	505	153	0	0	0	0	153	200	358	63	0
Direction, Lane #	SE 1	SE 2	NE 1	NE 2	SW 1							
Volume Total (vph)	332	405	153	200	421							
Volume Left (vph)	79	0	0	0	358							
Volume Right (vph)	0	153	0	200	0							
Hadj (s)	0.14	-0.24	0.07	-0.61	0.18							
Departure Headway (s)	7.1	6.7	7.5	6.8	7.1							
Degree Utilization, x	0.65	0.75	0.32	0.38	0.84							
Capacity (veh/h)	493	528	464	509	490							
Control Delay (s)	21.0	25.7	12.7	12.7	36.9							
Approach Delay (s)	23.6		12.7		36.9							
Approach LOS	C		B		E							
Intersection Summary												
Delay			24.8									
HCM Level of Service			C									
Intersection Capacity Utilization			64.5%			ICU Level of Service			C			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis 4: Main Street & 14th Street

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	65	475	145	0	0	0	0	145	185	375	60	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	68	500	153	0	0	0	0	153	195	395	63	0
Direction, Lane #	SE 1	SE 2	NE 1	NE 2	SW 1							
Volume Total (vph)	318	403	153	195	458							
Volume Left (vph)	68	0	0	0	395							
Volume Right (vph)	0	153	0	195	0							
Hadj (s)	0.13	-0.24	0.07	-0.61	0.18							
Departure Headway (s)	7.1	6.8	7.6	6.9	7.1							
Degree Utilization, x	0.63	0.76	0.32	0.37	0.91							
Capacity (veh/h)	494	520	459	504	458							
Control Delay (s)	20.4	26.5	12.9	12.6	47.4							
Approach Delay (s)	23.8		12.7		47.4							
Approach LOS	C		B		E							
Intersection Summary												
Delay			28.4									
HCM Level of Service			D									
Intersection Capacity Utilization			65.8%	ICU Level of Service					C			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis 4: Main Street & 14th Street

Oregon City TSP Update
2035 Planned System- DHV (PM Peak)

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	65	475	145	65	395	10	50	95	185	40	35	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	68	500	153	68	416	11	53	100	195	42	37	26
Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	NE 2	SW 1					
Volume Total (vph)	318	403	276	218	153	195	105					
Volume Left (vph)	68	0	68	0	53	0	42					
Volume Right (vph)	0	153	0	11	0	195	26					
Hadj (s)	0.13	-0.24	0.15	0.00	0.22	-0.61	-0.05					
Departure Headway (s)	7.2	6.8	7.5	7.3	8.1	7.3	8.2					
Degree Utilization, x	0.64	0.76	0.58	0.45	0.34	0.39	0.24					
Capacity (veh/h)	488	517	459	475	414	471	409					
Control Delay (s)	20.7	27.0	18.9	14.9	14.1	13.7	13.7					
Approach Delay (s)	24.2		17.2		13.8		13.7					
Approach LOS	C		C		B		B					
Intersection Summary												
Delay			19.3									
HCM Level of Service			C									
Intersection Capacity Utilization			55.5%	ICU Level of Service					B			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

4: Main Street & 14th Street

Oregon City TSP Update

2035 Financially Constrained System- DHV (PM Peak)

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	75	480	145	65	395	10	60	85	190	5	25	35
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	79	505	153	68	416	11	63	89	200	5	26	37
Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	NE 2	SW 1					
Volume Total (vph)	332	405	276	218	153	200	68					
Volume Left (vph)	79	0	68	0	63	0	5					
Volume Right (vph)	0	153	0	11	0	200	37					
Hadj (s)	0.14	-0.24	0.15	0.00	0.25	-0.61	-0.29					
Departure Headway (s)	7.0	6.6	7.3	7.2	8.0	7.1	7.9					
Degree Utilization, x	0.64	0.74	0.56	0.43	0.34	0.39	0.15					
Capacity (veh/h)	501	532	470	487	422	482	418					
Control Delay (s)	20.6	25.1	18.0	14.3	13.8	13.4	12.3					
Approach Delay (s)	23.1		16.4		13.6		12.3					
Approach LOS	C		C		B		B					
Intersection Summary												
Delay			18.6									
HCM Level of Service			C									
Intersection Capacity Utilization			57.8%		ICU Level of Service				B			
Analysis Period (min)			15									

2035 Planned Transportation System Supplemental Intersection SIDRA Analysis Results

MOVEMENT SUMMARY

Site: Warner Milne/Linn - Planned System

Warner Milne Road/Linn Avenue
2035 Planned System - PM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Leland Road											
3L	L	158	2.0	0.863	38.8	LOS D	15.6	393.8	1.00	1.38	20.3
8T	T	189	1.0	0.865	29.9	LOS C	15.6	393.8	1.00	1.38	20.9
8R	R	121	0.0	0.865	31.6	LOS C	15.6	393.8	1.00	1.38	20.8
Approach		468	1.1	0.863	33.3	LOS D	15.6	393.8	1.00	1.38	20.7
East: Warner Milne Road											
1L	L	168	0.0	0.525	16.2	LOS B	5.4	136.0	0.80	0.90	28.9
6T	T	647	2.0	0.524	7.2	LOS A	5.5	139.1	0.79	0.67	30.9
6R	R	189	0.0	0.523	8.5	LOS A	5.5	139.1	0.79	0.73	31.2
Approach		1005	1.3	0.524	8.9	LOS B	5.5	139.1	0.79	0.72	30.6
North: Linn Avenue											
7L	L	179	0.0	0.673	19.5	LOS B	6.4	159.8	0.87	1.10	27.3
4T	T	284	1.0	0.672	10.9	LOS B	6.4	159.8	0.87	1.02	29.7
4R	R	126	2.0	0.325	12.3	LOS B	1.8	46.0	0.74	0.87	29.5
Approach		589	0.9	0.673	13.8	LOS B	6.4	159.8	0.84	1.01	28.8
West: Warner Parrott Road											
5L	L	95	2.0	0.658	19.7	LOS B	9.2	233.4	0.95	1.03	27.6
2T	T	511	2.0	0.659	11.0	LOS B	9.2	233.4	0.95	0.99	30.0
2R	R	121	2.0	0.208	10.4	LOS B	1.5	38.9	0.75	0.79	30.7
Approach		726	2.0	0.659	12.1	LOS B	9.2	233.4	0.91	0.96	29.7
All Vehicles		2789	1.4	0.863	14.9	LOS B	15.6	393.8	0.87	0.96	27.7

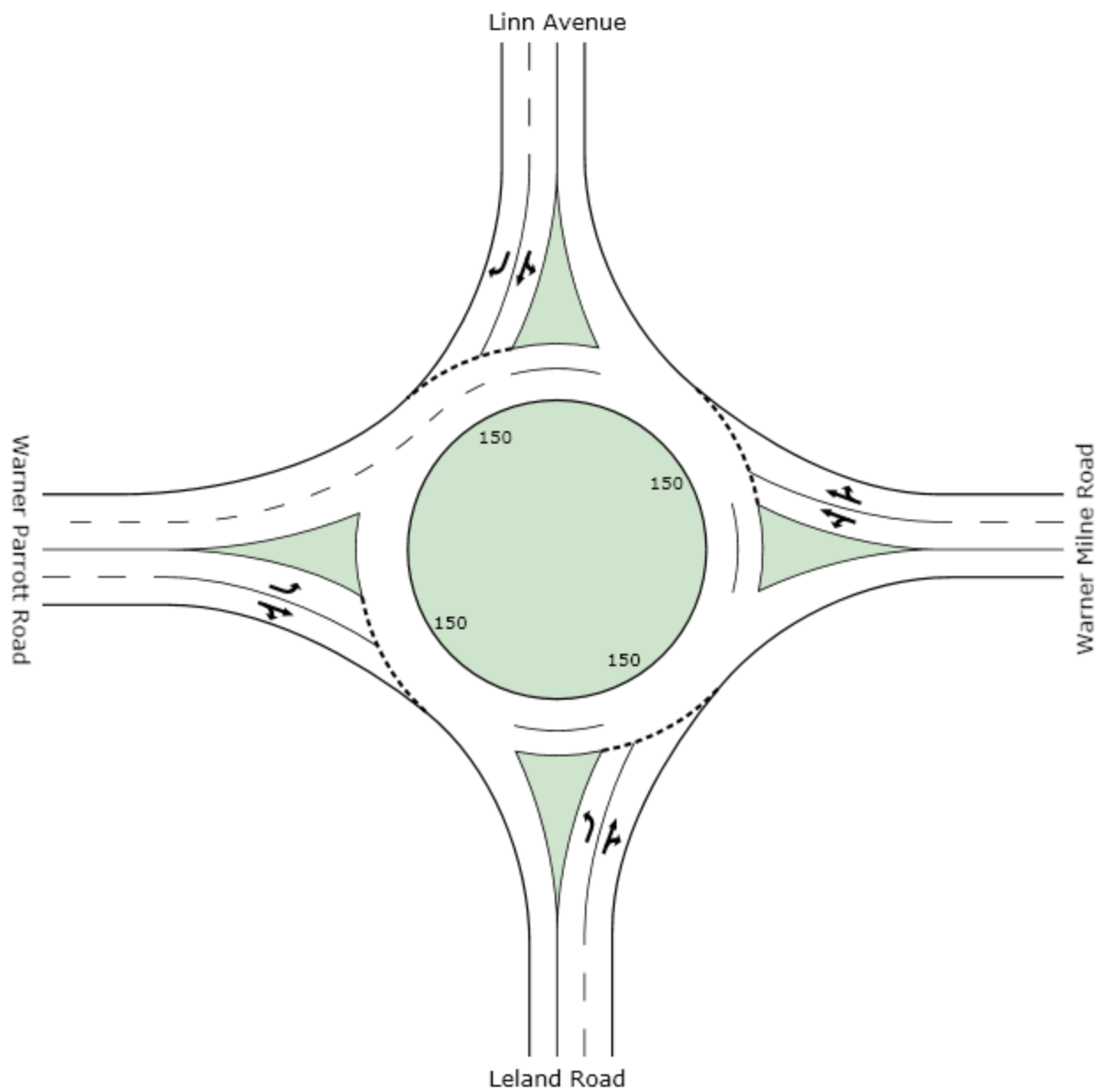
Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS D. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout LOS Method: Same as Signalised Intersections.

Roundabout Capacity Model: SIDRA Standard.



MOVEMENT SUMMARY

Site: Maple Lane/Holly Lane -
Planned System

Maple Lane Rd/Holly Lane
2035 Planned System - PM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South East: Holly Lane Extension											
11L	L	11	1.0	0.702	25.1	LOS C	9.2	234.2	0.97	1.17	24.6
16T	T	347	2.0	0.709	18.0	LOS B	9.2	234.2	0.97	1.15	26.1
16R	R	63	3.0	0.710	19.2	LOS B	9.2	234.2	0.97	1.15	26.0
Approach		421	2.1	0.709	18.3	LOS C	9.2	234.2	0.97	1.15	26.1
North East: Maple Lane Road											
17L	L	63	1.0	0.619	19.8	LOS B	7.0	178.2	0.87	1.03	26.7
14T	T	232	2.0	0.618	12.7	LOS B	7.0	178.2	0.87	0.97	28.8
14R	R	132	1.0	0.618	13.9	LOS B	7.0	178.2	0.87	0.98	28.6
Approach		426	1.5	0.617	14.1	LOS B	7.0	178.2	0.87	0.98	28.4
North West: Holly Lane											
15L	L	195	1.0	0.732	18.7	LOS B	11.0	278.4	0.90	0.94	27.1
12T	T	300	2.0	0.732	11.6	LOS B	11.0	278.4	0.90	0.89	29.3
12R	R	142	2.0	0.733	12.9	LOS B	11.0	278.4	0.90	0.90	29.1
Approach		637	1.7	0.732	14.1	LOS B	11.0	278.4	0.90	0.91	28.5
South West: Maple Lane Road											
13L	L	132	2.0	0.700	23.1	LOS C	9.1	229.3	0.96	1.13	25.2
18T	T	300	1.0	0.699	15.9	LOS B	9.1	229.3	0.96	1.11	26.9
18R	R	11	1.0	0.702	17.2	LOS B	9.1	229.3	0.96	1.11	26.8
Approach		442	1.3	0.699	18.1	LOS C	9.1	229.3	0.96	1.11	26.4
All Vehicles		1926	1.7	0.732	15.9	LOS B	11.0	278.4	0.92	1.02	27.4

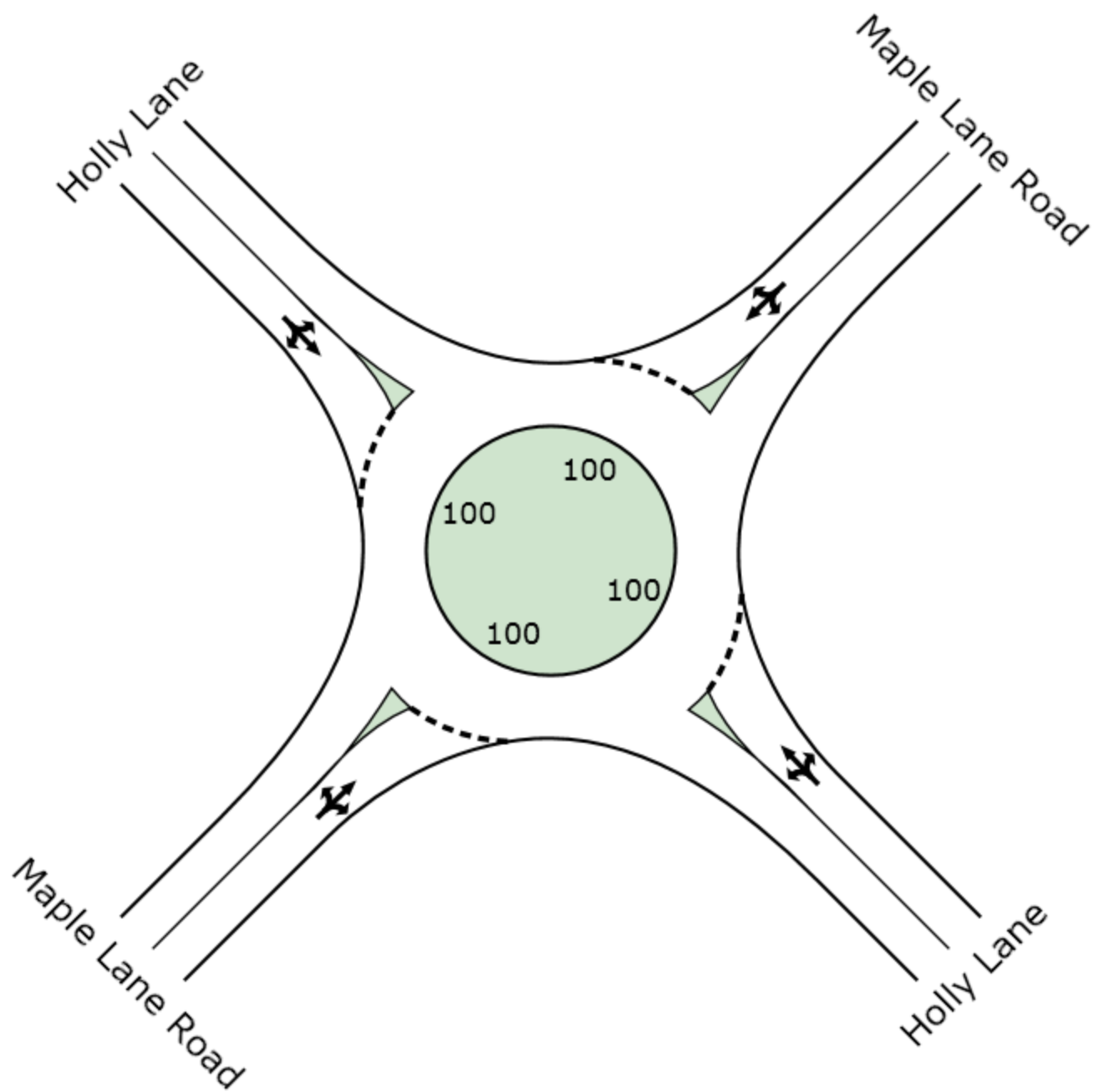
Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS C. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout LOS Method: Same as Signalised Intersections.

Roundabout Capacity Model: SIDRA Standard.



MOVEMENT SUMMARY

Site: Meyers Ext/Loder Ext -
Planned System

Meyer Road/Loder Road Ext
2035 Planned System - PM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South East: Meyers Road Extension											
11L	L	16	5.0	0.116	13.9	LOS B	0.7	19.0	0.42	0.82	29.6
16T	T	74	5.0	0.116	6.7	LOS A	0.7	19.0	0.42	0.51	32.4
16R	R	16	5.0	0.116	8.0	LOS A	0.7	19.0	0.42	0.59	32.0
Approach		105	5.0	0.116	8.0	LOS B	0.7	19.0	0.42	0.57	31.9
North East: Loder Road Extension											
17L	L	16	5.0	0.190	13.1	LOS B	1.3	34.6	0.32	0.81	29.9
14T	T	111	5.0	0.191	5.9	LOS A	1.3	34.6	0.32	0.45	32.9
14R	R	74	5.0	0.191	7.2	LOS A	1.3	34.6	0.32	0.54	32.4
Approach		200	5.0	0.191	7.0	LOS B	1.3	34.6	0.32	0.51	32.4
North West: Meyers Road Extension											
15L	L	121	5.0	0.252	13.5	LOS B	1.8	47.1	0.39	0.75	29.5
12T	T	79	5.0	0.252	6.3	LOS A	1.8	47.1	0.39	0.47	32.3
12R	R	53	5.0	0.252	7.6	LOS A	1.8	47.1	0.39	0.54	31.9
Approach		253	5.0	0.252	10.0	LOS B	1.8	47.1	0.39	0.62	30.8
South West: Loder Road Extension											
13L	L	16	5.0	0.117	13.9	LOS B	0.8	19.7	0.44	0.82	29.6
18T	T	74	5.0	0.117	6.7	LOS A	0.8	19.7	0.44	0.52	32.3
18R	R	16	5.0	0.117	8.0	LOS A	0.8	19.7	0.44	0.59	32.0
Approach		105	5.0	0.117	8.0	LOS B	0.8	19.7	0.44	0.57	31.8
All Vehicles		663	5.0	0.252	8.5	LOS A	1.8	47.1	0.38	0.57	31.6

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout LOS Method: Same as Signalised Intersections.

Roundabout Capacity Model: SIDRA Standard.

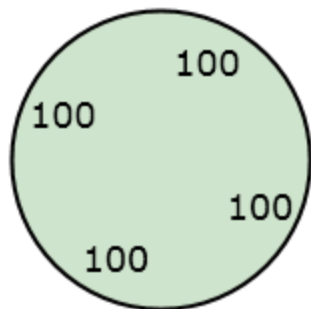


Meyers Road Extension

Loder Road Extension

Loder Road Extension

Meyers Road Extension



Section K



IMPLEMENTING ORDINANCES

ORDINANCE NO. 13-1002

**AN ORDINANCE OF THE CITY OF OREGON CITY ADOPTING AN UPDATED
TRANSPORTATION SYSTEM PLAN**

WHEREAS, the Transportation System Plan (TSP) is an ancillary document to the Oregon City Comprehensive Plan;

WHEREAS, these standards reflect the vision for the future development of Oregon City ("City"), implement the City's Comprehensive Plan, and allow the City to manage future growth effectively;

WHEREAS, the proposed Transportation System Plan will replace the existing Transportation System Plan to guide transportation improvements through 2035;

WHEREAS, the proposed Transportation System Plan complies and is consistent with state statutes and Metro regulations, Statewide Planning Goals, and the goals and policies of the Oregon City Comprehensive Plan;

WHEREAS, the Oregon City Planning Commission held a series of publicly noticed work sessions and hearings to review the proposed Transportation System Plan;

WHEREAS, the Planning Commission, based on the oral and written testimony received at the public hearings, adopted the Transportation System Plan and unanimously recommended that the City Commission adopt the revisions;

WHEREAS, Ordinance 13-1002 provides the City with a deadline of July 1, 2015, to create and adopt alternate mobility standards through the adoption of a refinement plan under OAR 660-012-0025; and

WHEREAS, adoption of the Transportation System Plan is in the best interest of Oregon City to ensure that the goals and policies of the City can be realized.

NOW, THEREFORE, OREGON CITY ORDAINS AS FOLLOWS:

Section 1. The Oregon City Transportation System Plan, Exhibit 1, is hereby amended based on the findings contained in Exhibit 2, all of which are incorporated herein by reference.

Section 2. The City shall adopt a refinement plan to establish alternative mobility standards as described in Exhibit 2, not later than July 1, 2015.

Read for the first time at a regular meeting of the City Commission held on the ____ day of _____, 2013, and the City Commission finally enacted the foregoing ordinance this ____ day of _____, 2013.

DOUG NEELEY, Mayor

Attested to this ____ day of _____ 2013:

Approved as to legal sufficiency:

Nancy Ide, City Recorder

City Attorney

Exhibits:

Exhibit 1 - Volume 1 and 2 of the Transportation System Plan

Exhibit 2 - Staff Report and findings for Legislative File L 13-01 and 13-02

Ordinance No. 13-1002

Effective Date: _____

ORDINANCE NO. 13-1003

AN ORDINANCE OF THE CITY OF OREGON CITY AMENDING THE OREGON CITY MUNICIPAL CODE.

WHEREAS, the development regulation sections of the Oregon City Municipal Code (found in Titles 12, 16, and 17) are comprised of standards governing street design, site development, land division, and other similar topics;

WHEREAS, these standards reflect the vision for the future development of Oregon City ("City"), implement the City's Comprehensive Plan, and allow the City to manage future growth effectively;

WHEREAS, the development of the Oregon City Municipal Code amendments involved a collaborative process whereby the City worked with interested citizens to improve the livability of the City;

WHEREAS, Oregon City Municipal Code amendments are necessary to implement the Transportation System Plan (Ordinance 13-1002);

WHEREAS, the proposed amendments comply and are consistent with state statutes and Metro regulations, Statewide Planning Goals, the goals and policies of the Oregon City Comprehensive Plan and approved Concept Plans;

WHEREAS, the Oregon City Planning Commission held a series of publicly noticed work sessions and hearings to review proposed amendments to the Oregon City Municipal Code;

WHEREAS, the Planning Commission, based on the oral and written testimony received at the public hearings, adopted amendments to the Oregon City Municipal Code and unanimously recommended that the City Commission adopt the revisions; and

WHEREAS, adopting the revisions to the Oregon City Municipal Code is in the best interest of Oregon City to ensure that the goals and policies of the City can be realized.

NOW, THEREFORE, OREGON CITY ORDAINS AS FOLLOWS:

Section 1. The Oregon City Zoning and Development Code is hereby amended to include amendments as set forth in Exhibit 1, based on the findings contained in Exhibit 2, and incorporated herein by reference.

Read for the first time at a regular meeting of the City Commission held on the ____ day of _____, 2013, and the City Commission finally enacted the foregoing ordinance this ____ day of _____, 2013.

DOUG NEELEY, Mayor

Attested to this ____ day of _____ 2013:

Approved as to legal sufficiency:

Nancy Ide, City Recorder

City Attorney

Exhibits:

Exhibit 1 – Amendments to the Oregon City Municipal Code

Exhibit 2 - Staff Report and findings for Legislative File L 13-01 and 13-02

Ordinance No. 13-1003

Effective Date: _____

Amendments to the Oregon City Municipal Code

June 13, 2013

The following are proposed amendments with code sections numbered as they would be in the OCMC and are presented in adoption-ready format. Where new language is proposed to be added, it is underlined; where it is proposed to be removed, it is ~~struck through~~.

OCMC CHAPTER 12.04 - STREETS, SIDEWALKS AND PUBLIC PLACES

12.04.003 Applicability

- A. Compliance with this chapter is required for all Land Divisions, Site Plan and Design Review, Master Plan, Detailed Development Plan and Conditional Use applications and all public improvements.
- B. Compliance with this chapter is also required for new construction or additions which exceed 50 percent of the existing square footage, of all single and two-family dwellings. All applicable single and two-family dwellings shall provide any necessary dedications, easements or agreements as identified in the Transportation System Plan and this Chapter. In addition, the frontage of the site shall comply with the following prioritized standards identified in this chapter:
1. Improve street pavement, construct curbs, gutters, sidewalks and planter strips; and
 2. Plant street trees

The cost of compliance with the standards identified in 12.04.003.B.1 and 12.04.003.B.2 is limited to ten (10%) percent of the total construction costs. The value of the alterations and improvements as determined by the Community Development Director is based on the entire project and not individual building permits. It is the responsibility of the applicant to submit to the Community Development Director the value of the required improvements. Additional costs may be required to comply with other applicable requirements associated with the proposal such as access or landscaping requirements.

12.04.007 Modifications.

The review body may consider modification of this standard resulting from constitutional limitations restricting the City's ability to require the dedication of property or for any other reason, based upon the criteria listed below and other criteria identified in the standard to be modified. All modifications shall be processed through a Type II Land Use application and may require additional evidence from a transportation engineer or others to verify compliance.

Compliance with the following criteria is required:

- A. The modification meets the intent of the standard;
- B. The modification provides safe and efficient movement of pedestrians, motor vehicles, bicyclists and freight;
- C. The modification is consistent with an adopted plan; and
- D. The modification is complementary with a surrounding street design; or, in the alternative,
- E. If a modification is requested for constitutional reasons, the applicant shall demonstrate the constitutional provision or provisions to be avoided by the modification and propose a modification that complies with the state or federal constitution. The City shall be under no obligation to grant a modification in excess of that which is necessary to meet its constitutional obligations.

12.04.025 - Street design—Driveway Curb cuts.

- A. With the exception of the limitations identified in 12.04.025.B, all driveway curb cuts shall be limited to the following dimensions.

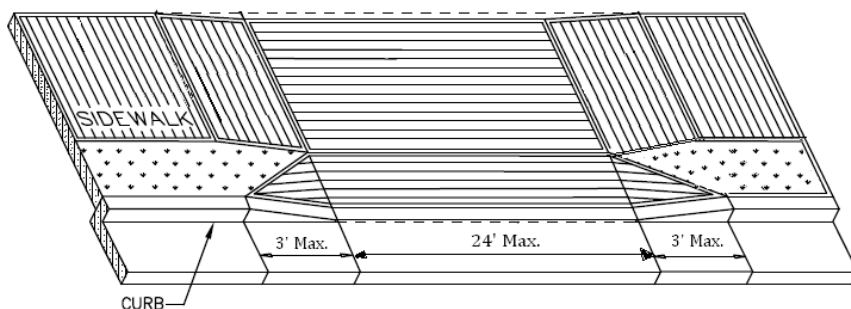
<u>Property Use</u>	<u>Minimum Driveway Width at sidewalk</u>	<u>Maximum Driveway Width at sidewalk or</u>
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	<u>or property line</u>	<u>property line</u>
<u>Single or Two-Family Residential Dwelling with one Car Garage/Parking Space</u>	<u>10 feet</u>	<u>12 feet</u>
<u>Single or Two-Family Residential Dwelling with two Car Garage/Parking Space</u>	<u>18 feet</u>	<u>24 feet</u>
<u>Single or Two-Family Residential Dwelling with three or more Car Garages/Parking Space</u>	<u>18 feet</u>	<u>30 feet</u>
<u>Non Residential or Multi-Family Residential Driveway Access</u>	<u>15 feet</u>	<u>40 feet</u>

The driveway width abutting the street pavement may be extended 3 feet on either side of the driveway to accommodate turn movements. Driveways may be widened onsite in locations other than where the driveway meets sidewalk or property line (for example between the property line and the entrance to a garage).

Figure 12.04.025: Example Driveway Curb Cut

Single-Family Dwelling with a Two Car Garage



~~BA. To assure public safety, reduce traffic hazards and promote the welfare of pedestrians, bicyclists and residents of the subject area, such as a cul-de-sac or dead-end street, the decision maker shall be authorized through a Type II process, unless another procedure applicable to the proposal applies, to minimize the number and size of curb cuts (including driveways) as far as practicable for any of the following purposes where any of the following conditions are necessary:~~

1. To provide adequate space for on-street parking;
2. To facilitate street tree planting requirements;
3. To assure pedestrian and vehicular safety by limiting vehicular access points; and
4. To assure that adequate sight distance requirements are met.

~~Where the decision maker determines any of these situations exist or may occur due to approval of a proposed development, driveway curb cuts shall be limited to those widths as approved by the public works street standard drawings.~~

- a. Where the decision maker determines any of these situations exist or may occur due to the approval of a proposed development for non-residential uses or attached or multi-family housing, a shared driveway shall be required and limited to twenty-four feet in width adjacent to the sidewalk or property line and may extend to a maximum of thirty feet abutting the street pavement to facilitate turning movements.

~~Shared residential driveways shall be limited to twenty-four feet in width adjacent to the sidewalk and property line and may extend to a maximum of thirty feet abutting the street pavement to facilitate turning movements. Non-residential development driveway curb cuts in these situations shall be limited to those widths as approved by the public works street standard drawings or as approved by the city engineer upon review of the vehicle turning radii~~

~~based on a professional engineer's design submittal.~~

- b. Where the decision maker determines any of these situations exist or may occur due to approval of a proposed development for detached housing within the "R-5" Single –Family Dwelling District or "R-3.5" Dwelling District, driveway curb cuts shall be limited to twelve feet in width adjacent to the sidewalk or property line and may extend to a maximum of eighteen feet abutting the street pavement to facilitate turning movements.

CB. For all driveways, the following standards apply.

1. Each new or redeveloped curb cut shall have an approved concrete approach or asphalted street connection where there is no concrete curb and a minimum hard surface for at least ten feet and preferably twenty feet back into the lot as measured from the current edge of street pavement to provide for controlling gravel tracking onto the public street. The hard surface may be concrete, asphalt, or other surface approved by the city engineer.

~~2C. It shall be a code violation to drive~~ Driving vehicles, trailers, boats, or other wheeled objects across a sidewalk or roadside planter strip at a location other than an approved permanent or city-approved temporary driveway approach is prohibited. Damages caused by such action shall be corrected by the adjoining property owner.

~~3D. It shall be a code violation to place~~ Placing soil, gravel, wood, or other material in the gutter or space next to the curb of a public street with the intention of using it as a permanent or temporary driveway is prohibited. Damages caused by such action shall be corrected by the adjoining property owner.

~~4E.~~ Any driveway built within public street or alley right-of-way shall be built and permitted per city requirements as approved by the city engineer.

DF. Exceptions. The public works director reserves the right to waive this ~~policy in certain instances~~ standard, if it is determined through a Type II decision including written findings, that it is in the best interest of the public to do so.

Examples of allowable exceptions include:

1. Corner properties or properties adjacent to more than one street frontage provided at least one on-street parking space on each frontage remains available after the installation of a second driveway.
2. Special needs for disabled access.
3. When the size of the lot or the length of the street frontage is adequate to support more than one driveway, the installation of a driveway will result in the loss of no more than one on-street parking space and there is no shortage of on-street parking available for neighboring property.

In no case shall more than two driveways be allowed on any single family residential property.

~~G. Appeals. Decisions made by the public works director are final unless appealed in writing to the transportation advisory committee for review and recommendation to the city commission.~~

~~H. Failure to Comply. Failure to meet the intent of this section shall be a violation of this Code and enforceable as a civil infraction.~~

~~12.04.045 – Street Design – Constrained local streets and/or rights-of-way.~~

~~Any accessway with a pavement width of less than thirty two feet shall require the approval of the city engineer, community development director and fire chief and shall meet minimum life safety requirements, which may include fire suppression devices as determined by the fire marshal to assure an adequate level of fire and life safety. The standard width for constrained streets is twenty feet of paving with no on-street parking and twenty-eight feet with on-street parking on one side only. Constrained local streets shall maintain a twenty-foot wide unobstructed accessway. Constrained local streets and/or right-of-way shall comply with necessary slope easements, sidewalk easements and altered curve radius, as approved by the city engineer and community development director.~~

~~Table 12.04.045~~

STREET DESIGN STANDARDS FOR LOCAL CONSTRAINED STREETS

	Minimum	Required
--	---------	----------

Type of Street	Right-of-way	Pavement Width
Constrained local street	20 to 40	20 to less than 32 feet

12.04.095—Street Design—Curb Cuts.

To assure public safety, reduce traffic hazards and promote the welfare of pedestrians, bicyclists and residents of the subject area, such as a cul-de-sac or dead-end street, the decision maker shall be authorized to minimize the number and size of curb cuts (including driveways) as far as practicable where any of the following conditions are necessary:

- A. To provide adequate space for on-street parking;
- B. To facilitate street tree planting requirements;
- C. To assure pedestrian and vehicular safety by limiting vehicular access points; and
- D. To assure that adequate sight distance requirements are met.

Where the decision maker determines any of these situations exist or may occur due to approval of a proposed development, single residential driveway curb cuts shall be limited to twelve feet in width adjacent to the sidewalk and property line and may extend to a maximum of eighteen feet abutting the street pavement to facilitate turning movements. Shared residential driveways shall be limited to twenty four feet in width adjacent to the sidewalk and property line and may extend to a maximum of thirty feet abutting the street pavement to facilitate turning movements. Non-residential development driveway curb cuts in these situations shall be limited to the minimum required widths based on vehicle turning radii based on a professional engineer's design submittal and as approved by the decision maker.

12.04.175 - Street design—Generally.

The location, width and grade of street shall be considered in relation to: existing and planned streets, topographical conditions, public convenience and safety for all modes of travel, existing and identified future transit routes and pedestrian/bicycle accessways, overlay districts, and the proposed use of land to be served by the streets. The street system shall assure an adequate traffic circulation system with intersection angles, grades, tangents and curves appropriate for the traffic to be carried considering the terrain. To the extent possible, proposed streets shall connect to all existing or approved stub streets that abut the development site. ~~Where location not shown in the development plan,~~ The arrangement of streets shall either:

- A. Provide for the continuation or appropriate projection of existing principal streets in the surrounding area and on adjacent parcels or conform to a plan for the area approved or adopted by the city to meet a particular situation where topographical or other conditions make continuance or conformance to existing streets impractical;
- B. Where necessary to give access to or permit a satisfactory future development of adjoining land, streets shall be extended to the boundary of the development and the resulting dead-end street (stub) may be approved with a temporary turnaround as approved by the city engineer. Notification that the street is planned for future extension shall be posted on the stub street until the street is extended and shall inform the public that the dead-end street may be extended in the future. Access control in accordance with section 12.04.200 shall be required to preserve the objectives of street extensions.

12.04.180 - Street design ~~Minimum right-of-way~~

~~All development shall provide adequate right-of-way and pavement width. Adequate right-of-way and pavement width shall be provided by:~~

- A. ~~Complying with the street design standards contained in the table provided in Chapter 12.04. The street design standards are based on the classification of streets that occurred in the Oregon City Transportation System Plan (TSP); in particular, the following TSP figures provide the appropriate classification for each street in Oregon City: Figure 5-1: Functional Classification System and New Roadway Connections; Figure 5-3: Pedestrian System Plan; Figure 5.6: Bicycle System Plan; and Figure 5.7: Public Transit System Plan. These TSP figures from the Oregon City Transportation System Plan are incorporated herein by reference in order to determine the classification of particular streets.~~

Type of Street	Maximum Right-of-Way Width	Pavement Width
Major arterial	124 feet	98 feet
Minor arterial	114 feet	88 feet
Collector street	86 feet	62 feet
Neighborhood Collector street	81 feet	59 feet
Local street*	54 feet	32 feet
Alley	20 feet	16 feet

B. The applicant may submit an alternative street design plan that varies from the street design standards identified above. An alternative street design plan may be approved by the city engineer if it is found the alternative allows for adequate and safe traffic, pedestrian and bicycle flows and transportation alternatives and protects and provides adequate multi modal transportation services for the development as well as the

All development regulated by this Chapter shall provide street improvements in compliance with the standards in Figure 12.04.180 depending on the street classification set forth in the Transportation System Plan and the Comprehensive Plan designation of the adjacent property, unless an alternative plan has been adopted. The standards provided below are maximum design standards and may be reduced with an alternative street design which may be approved based on the modification criteria in 12.04.007. The steps for reducing the maximum design below are found in the Transportation System Plan.

Table 12.04.180 Street Design

To read the table below, select the road classification as identified in the Transportation System Plan and the Comprehensive Plan designation of the adjacent properties to find the maximum design standards for the road cross section. If the Comprehensive Plan designation on either side of the street differs, the wider right-of-way standard shall apply.

Road Classification	Comprehensive Plan Designation	Right-of-Way Width	Pavement Width	Public Access	Sidewalk	Landscape Strip	Bike Lane	Street Parking	Travel Lanes	Median
Major Arterial	Mixed Use, Commercial or Public/Quasi Public	116 ft.	94 ft.	0.5 ft.	10.5 ft. sidewalk including 5 ft.x5 ft. tree wells		6 ft.	8 ft.	(5) 12 ft. Lanes	6 ft.
	Industrial	120 ft.	88 ft.	0.5 ft.	5 ft.	10.5 ft.	6 ft.	N/A	(5) 14 ft. Lanes	6 ft.
	Residential	126 ft.	94 ft.	0.5 ft.	5 ft.	10.5 ft.	6 ft.	8 ft.	(5) 12 ft. Lanes	6 ft.

Road Classification	Comprehensive Plan Designation	Right-of-Way Width	Pavement Width	Public Access	Sidewalk	Landscape Strip	Bike Lane	Street Parking	Travel Lanes	Median
Minor Arterial	Mixed Use, Commercial or Public/Quasi Public	116 ft.	94 ft.	0.5 ft.	10.5 ft. sidewalk including 5 ft.x5 ft. tree wells		6 ft.	8 ft.	(5) 12 ft. Lanes	6 ft.
	Industrial	118 ft.	86 ft.	0.5 ft.	5 ft.	10.5 ft.	6 ft.	7 ft.	(5) 12 ft. Lanes	N/A
	Residential	100 ft.	68 ft.	0.5 ft.	5 ft.	10.5 ft.	6 ft.	7 ft.	(3) 12 ft. Lanes	6 ft.

<u>Road Classification</u>	<u>Comprehensive Plan Designation</u>	<u>Right-of-Way Width</u>	<u>Pavement Width</u>	<u>Public Access</u>	<u>Sidewalk</u>	<u>Landscape Strip</u>	<u>Bike Lane</u>	<u>Street Parking</u>	<u>Travel Lanes</u>	<u>Median</u>
Collector	Mixed Use, Commercial or Public/Quasi Public	86 ft.	64 ft.	0.5 ft.	10.5 ft. sidewalk including 5 ft.x5 ft. tree wells		6 ft.	8 ft.	(3) 12 ft. Lanes	N/A
	Industrial	88 ft.	62 ft.	0.5 ft.	5 ft.	7.5 ft.	6 ft.	7 ft.	(3) 12 ft. Lanes	N/A
	Residential	85 ft.	59 ft.	0.5 ft.	5 ft.	7.5 ft.	6 ft.	7 ft.	(3) 11 ft. Lanes	N/A

<u>Road Classification</u>	<u>Comprehensive Plan Designation</u>	<u>Right-of-Way Width</u>	<u>Pavement Width</u>	<u>Public Access</u>	<u>Sidewalk</u>	<u>Landscape Strip</u>	<u>Bike Lane</u>	<u>Street Parking</u>	<u>Travel Lanes</u>	<u>Median</u>
Local	Mixed Use, Commercial or Public/Quasi Public	62 ft.	40 ft.	0.5 ft.	10.5 ft. sidewalk including 5 ft.x5 ft. tree wells		N/A	8 ft.	(2) 12 ft. Lanes	N/A
	Industrial	60 ft.	38 ft.	0.5 ft.	5 ft.	5.5 ft.	(2) 19 ft. Shared Space		N/A	N/A
	Residential	54 ft.	32 ft.	0.5 ft.	5 ft.	5.5 ft.	(2) 16 ft. Shared Space		N/A	N/A

1. Pavement width includes, bike lane, street parking, travel lanes and median.
2. Public access, sidewalks, landscape strips, bike lanes and on-street parking are required on both sides of the street in all designations. The right-of-way width and pavement widths identified above include the total street section.
3. A 0.5'- foot curb is included in landscape strip or sidewalk width.
4. Travel lanes may be through lanes or turn lanes.
5. The 0.5'- foot public access provides access to adjacent public improvements.
6. Alleys shall have a minimum right-of-way width of 20 feet and a minimum pavement width of 16 feet. If alleys are provided, garage access shall be provided from the alley.

12.04.190 Street Design--Alignment.

The centerline of streets shall be:

- A. Aligned with existing streets by continuation of the centerlines; or
- B. Offset from the centerline by no more than ~~five~~ 10(5) feet, provided appropriate mitigation, in the judgment of the City Engineer, is provided to ensure that the offset intersection will not pose a safety hazard.

12.04.194 Traffic Sight Obstructions

All new streets shall comply with the Traffic Sight Obstructions in eChapter 10.32.

12.04.195 – Minimum Street Intersection Spacing Standards

- A. All new development and redevelopment shall meet the following Public intersection spacing standards

Table 12.04.040 – Public Street Intersection Spacing Standards

	Distance in Feet between Streets of Various Classifications								
	Between Arterial and Arterial	Between Arterial and Collector	Between Collector and Neighborhood	Between Arterial and Local Street	Between Street and Collector Street and Collector	Between Neighborhood and Collector Street	Between Collector and Local Street	Between Local Street and Collector	Between two adjacent local streets
Measured along an Arterial Street	1320	800	600	300	600	300	150	150	150
Measured along a Collector Street	800	800	600	300	600	300	150	150	150
Measured along a Neighborhood Collector Street	800	600	300	300	300	150	150	150	150
Measured along a Local Street	600	600	300	300	300	150	150	150	150

Note: With regard to public intersection spacing standards, same distances apply to both major arterial and minor arterial streets. In this table, the term “arterial” applies to both major arterial and minor arterial streets.

or

B. A lesser distance between intersections may be allowed, provided appropriate mitigation, in the judgment of the City Engineer, is provided to ensure that the reduction in intersection spacing will not pose a safety hazard.

All new development and redevelopment shall meet the spacing standards identified in Table 12.04.195, as measured between the right-of-way centerlines. The spacing standards within this section do not apply to alleys.

Table 12.04.195 Spacing Standards

<u>Street Functional Classification</u>	<u>Spacing Standards</u>	<u>Mixed-Use, Residential or Public/Quasi Public Comprehensive Plan Designation</u>	<u>Commercial or Industrial Comprehensive Plan Designation</u>
<u>Major Arterial Streets</u>	<u>Location identified in Figure 8 of the Transportation System Plan.</u>		
	<u>Minimum Driveway Spacing (Street to Driveway)</u>	<u>175 ft.</u>	<u>225 ft.</u>
<u>Minor Arterial Streets</u>	<u>Location identified in Figure 8 of the Transportation System Plan.</u>		
	<u>Minimum Driveway Spacing (Street to Driveway)</u>	<u>175 ft.</u>	<u>225 ft.</u>
<u>Collector Streets</u>	<u>Location identified in Figure 8 of the Transportation System Plan.</u>		
	<u>Minimum Driveway Spacing (Street to Driveway)</u>	<u>100 ft.</u>	<u>150 ft.</u>
<u>Local Streets</u>	<u>Location complies with minimum and maximum block spacing standards.</u>		
	<u>Minimum Driveway Spacing (Street to Driveway)</u>	<u>25 ft.</u>	<u>25 ft.</u>

The maximum block spacing between streets is 530 feet and the minimum block spacing between streets is 150 feet. If the maximum block size is exceeded, pedestrian accessways must be provided every 330 feet. All new streets shall be designed as local streets unless otherwise designated in the Transportation System Plan.

12.04.199 Pedestrian and Bicycle Accessways

Pedestrian/bicycle accessways are intended to provide direct, safe and convenient connections between residential areas, retail and office areas, institutional facilities, industrial parks, transit streets, neighborhood activity centers, rights-of-way, and pedestrian/bicycle accessways which minimize out-of-direction travel, and transit-orientated developments where public street connections for automobiles, bicycles and pedestrians are unavailable.

Pedestrian/bicycle accessways are appropriate in areas where public street options are unavailable, impractical or inappropriate. Pedestrian and bicycle accessways are required through private property or as right-of-way connecting development to the right-of-way at intervals not exceeding three-hundred-and-thirty feet of frontage; or where the lack of street continuity creates inconvenient or out of direction travel patterns for local pedestrian or bicycle trips.

A. Entry points shall align with pedestrian crossing points along adjacent streets and with adjacent street intersections.

B. Accessways shall be free of horizontal obstructions and have a nine-foot, six-inch high vertical clearance to accommodate bicyclists. To safely accommodate both pedestrians and bicycles, accessway right-of-way widths shall be as follows:

1. Accessways shall have a fifteen-foot-wide right-of-way with a seven-foot wide paved surface between a five foot planter strip and a three foot planter strip.
2. If an accessway also provides secondary fire access, the right-of-way width shall be at least twenty-three feet wide with a fifteen-foot paved surface a five foot planter strip and a three foot planter strip.

C. Accessways shall be direct with at least one end point of the accessway always visible from any point along the accessway. On-street parking shall be prohibited within fifteen feet of the intersection of the accessway with public streets to preserve safe sight distance and promote safety.

D. To enhance pedestrian and bicycle safety, accessways shall be lighted with pedestrian-scale lighting. Accessway lighting shall be to a minimum level of one-half foot-candles, a one and one-half foot-candle average, and a maximum to minimum ratio of seven-to-one and shall be oriented not to shine upon adjacent properties. Street lighting shall be provided at both entrances.

E. Accessways shall comply with Americans with Disabilities Act (ADA).

F. The planter strips on either side of the accessway shall be landscaped along adjacent property by installation of the following:

1. Within the three foot planter strip, an evergreen hedge screen of thirty to forty-two inches high or shrubs spaced no more than four feet apart on average;
2. Ground cover covering one hundred percent of the exposed ground. No bark mulch shall be allowed except under the canopy of shrubs and within two feet of the base of trees;
3. Within the five foot planter strip, two-inch minimum caliper trees with a maximum of thirty-five feet of separation between the trees to increase the tree canopy over the accessway;
4. In satisfying the requirements of this section, evergreen plant materials that grow over forty-two inches in height shall be avoided. All plant materials shall be selected from the Oregon City Native Plant List.

G. Accessways shall be designed to prohibit unauthorized motorized traffic. Curbs and removable, lockable bollards are suggested mechanisms to achieve this.

H. Accessway surfaces shall be paved with all-weather materials as approved by the city. Pervious materials are encouraged. Accessway surfaces shall be designed to drain stormwater runoff to the side or sides of the accessway. Minimum cross slope shall be two percent.

I. In parks, greenways or other natural resource areas, accessways may be approved with a five-foot wide gravel path with wooden, brick or concrete edgings.

J. The Community Development Director may approve an alternative accessway design due to existing site constraints through the modification process set forth in Section 12.04.007.

K. Ownership, liability and maintenance of accessways.

To ensure that all pedestrian/bicycle accessways will be adequately maintained over time, the hearings body shall require one of the following:

- 1 Dedicate the accessways to the public as public right-of-way prior to the final approval of the development; or

- 2 The developer incorporates the accessway into a recorded easement or tract that specifically requires the property owner and future property owners to provide for the ownership, liability and maintenance of the accessway.

12.04.200 Street Design—Constrained Local Streets and/or Rights-of-Way.

Any accessway with a pavement width of less than thirty-two feet shall require the approval of the City Engineer, Community Development Director and Fire Chief and shall meet minimum life safety requirements, which may include fire suppression devices as determined by the fire marshal to assure an adequate level of fire and life safety. The standard width for constrained streets is twenty feet of paving with no on-street parking and twenty-eight feet with on-street parking on one side only. Constrained local streets shall maintain a twenty foot wide unobstructed accessway. Constrained local streets and/or right-of-way shall comply with necessary slope easements, sidewalk easements and altered curve radius, as approved by the City Engineer and Community Development Director.

Table 12.04.045 STREET DESIGN STANDARDS FOR LOCAL CONSTRAINED STREETS		
	Minimum	Required
Type of Street	Right-of-Way	Pavement Width
Constrained local street	30 to 40 feet	20 to less than 32 feet

12.04.205 - Intersection level of Service Mobility Standards.

When reviewing new developments, the City of Oregon City requires all relevant intersections to be maintained at the minimum acceptable Level Of Service (LOS) upon full build-out of the proposed development. The minimum acceptable LOS standards are as follows:

- A. ——— For signalized intersection areas of the city that are located outside the Regional Center boundaries a LOS of "D" or better for the intersection as a whole and no approach operating at worse than LOS "E" and a v/c ratio not higher than 1.0 for the sum of critical movements.
- B. ——— For signalized intersections within the Regional Center boundaries a LOS "D" can be exceeded during the peak hour; however, during the second peak hour, LOS "D" or better will be required as a whole and no approach operating at worse than LOS "E" and a v/c ratio not higher than 1.0.
- C. ——— For unsignalized intersection throughout the city a LOS "E" or better for the poorest approach and with no movement serving more than twenty peak hour vehicles operating at worse than LOS "F" will be tolerated for minor movements during a peak hour.

Development shall demonstrate compliance with intersection mobility standards. When evaluating the performance of the transportation system, the City of Oregon City requires all intersections, except for the facilities identified in subsection D below, to be maintained at or below the following mobility standards during the two-hour peak operating conditions. The first hour has the highest weekday traffic volumes and the second hour is the next highest hour before or after the first hour. Except as provided otherwise below, this may require the installation of mobility improvements as set forth in the Transportation System Plan or as otherwise identified by the City Transportation Engineer.

- A. For intersections within the Regional Center, the following mobility standards apply:
1. During the first hour, a maximum v/c ratio of 1.10 shall be maintained. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.
 2. During the second hour, a maximum v/c ratio of 0.99 shall be maintained at signalized intersections. For

signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.

3. Intersections located on the Regional Center boundary shall be considered within the Regional Center.

B. For intersections outside of the Regional Center but designated on the Arterial and Thoroughway Network, as defined in the Regional Transportation Plan, the following mobility standards apply:

1. During the first hour, a maximum v/c ratio of 0.99 shall be maintained. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.

2. During the second hour, a maximum v/c ratio of 0.99 shall be maintained at signalized intersections. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.

C. For intersections outside the boundaries of the Regional Center and not designated on the Arterial and Thoroughway Network, as defined in the Regional Transportation Plan, the following mobility standards apply:

1. For signalized intersections:

- a. During the first hour, LOS "D" or better will be required for the intersection as a whole and no approach operating at worse than LOS "E" and a v/c ratio not higher than 1.0 for the sum of the critical movements.
- b. During the second hour, LOS "D" or better will be required for the intersection as a whole and no approach operating at worse than LOS "E" and a v/c ratio not higher than 1.0 for the sum of the critical movements.

2. For unsignalized intersections outside of the boundaries of the Regional Center:

- a. For unsignalized intersections, during the peak hour, all movements serving more than 20 vehicles shall be maintained at LOS "E" or better. LOS "F" will be tolerated at movements serving no more than 20 vehicles during the peak hour.

D. Until the City adopts new performance measures that identify alternative mobility targets, the City shall exempt proposed development that is permitted, either conditionally, outright, or through detailed development master plan approval, from compliance with the above-referenced mobility standards for the following state-owned facilities:

I-205 / OR 99E Interchange

I-205 / OR 213 Interchange

OR 213 / Beaver Creek Road

State intersections located within or on the Regional Center Boundaries

1. In the case of conceptual development approval for a master plan that impacts the above references intersections:

- a. the form of mitigation will be determined at the time of the detailed development plan review for subsequent phases utilizing the Code in place at the time the detailed development plan is submitted; and
- b. only those trips approved by a detailed development plan review are vested.

2. Development which does not comply with the mobility standards for the intersections identified in 12.04.205.D shall provide for the improvements identified in the Transportation System Plan (TSP) in an effort to improve intersection mobility as necessary to offset the impact caused by development. Where required by other provisions of the Code, the applicant shall provide a traffic impact study that includes an assessment of the development's impact on the intersections identified in this exemption and shall construct the intersection improvements listed in the TSP or required by the Code.

12.04.220 Street Design--Half Street.

Half streets, while generally not acceptable, may be approved where essential to the development, when in conformance with all other applicable requirements, and where it will not create a safety hazard. When approving half streets, the decision maker must first determine that it will be practical to require the dedication of the other half of the street when the adjoining property is divided or developed. Where the decision maker approves a half street, the

applicant must construct an additional ten feet of pavement width so as to make the half street safe and usable until such time as the other half is constructed. Whenever a half street is adjacent to property capable of being divided or developed, the other half of the street shall be provided and improved when that adjacent property divides or develops. Access Control as described in 12.04.200 may be required to preserve the objectives of half streets.

When the remainder of an existing half-street improvement is made it shall include the following items: dedication of required right-of-way, construction of the remaining portion of the street including pavement, curb and gutter, landscape strip, sidewalk, street trees, lighting and other improvements as required for that particular street. It shall also include at a minimum the pavement replacement to the centerline of the street. Any damage to the existing street shall be repaired in accordance with the City's "Moratorium Pavement Cut Standard" or as approved by the City Engineer.

12.04.225 - Street design—Cul-de-sacs and dead-end streets.

The city discourages the use of cul-de-sacs and permanent dead-end streets except where construction of a through street is found by the decision maker to be impracticable due to topography or some significant physical constraint such as ~~unstable soils, geologic hazards~~, wetland, natural or historic resource areas, dedicated open space, existing development patterns, ~~or arterial access restrictions~~ or similar situation as determined by the Community Development Director. When permitted, access from new cul-de-sacs and permanent dead-end streets shall be limited to have a maximum of 25 dwelling units and a maximum street length of three hundred fifty two hundred feet, as measured from the right-of-way line of the nearest intersecting street to the back of the cul-de-sac curb face. In addition, cul-de-sacs and dead end roads shall and include pedestrian/bicycle accessways as provided in Section 17.90.220 of required in this code and Chapter 12.24. This section is not intended to preclude the use of curvilinear eyebrow widening of a street where needed ~~to provide adequate lot coverage.~~

Where approved, cul-de-sacs shall have sufficient radius to provide adequate turn-around for emergency vehicles in accordance with Fire District and City adopted street standards. Permanent dead-end streets other than cul-de-sacs shall provide public street right-of-way / easements sufficient to provide turn-around space with appropriate no-parking signs or markings for waste disposal, sweepers, and other long vehicles in the form of a hammerhead or other design to be approved by the decision maker. Driveways shall be encouraged off the turnaround to provide for additional on-street parking space.

12.04.260 - Street design—Transit.

Streets shall be designed and laid out in a manner that promotes pedestrian and bicycle circulation. The applicant shall coordinate with ~~Tri-Met transit agencies~~ where the application impacts transit streets as identified in 17.04.1310 on Figure 5.7: Public Transit System Plan of the Oregon City Transportation System Plan. Pedestrian/bicycle access ways shall be provided as necessary ~~in conformance with the requirements in Section 17.90.220 of this code and Chapter 12.24~~ 12.04 to minimize the travel distance to transit streets and stops and neighborhood activity centers. The decision maker may require provisions, including easements, for transit facilities along transit streets where a need for bus stops, bus pullouts or other transit facilities within or adjacent to the development has been identified.

OCMC CHAPTER 12.24 PEDESTRIAN/BICYCLE ACCESSWAYS

Delete entire chapter.

OCMC CHAPTER 16.12 - MINIMUM IMPROVEMENTS AND DESIGN STANDARDS FOR LAND DIVISIONS

16.12.015 - Street design—Generally.

~~Street design standards for all new development and land divisions shall comply with Chapter 12.04—Street Design Standards.~~ Development shall demonstrate compliance with Chapter 12.04 - Streets, Sidewalks and Public Places.

~~16.12.025 Blocks—Length.~~

~~Block lengths for local streets and collectors shall not exceed five hundred feet between through streets, as measured between nearside right-of-way lines.~~

~~16.12.035 Blocks—Pedestrian and bicycle access.~~

~~A. To facilitate the most practicable and direct pedestrian and bicycle connections to adjoining or nearby neighborhood activity centers, public rights-of-way, and pedestrian/bicycle accessways which minimize out-of-direction travel, subdivisions shall include pedestrian/bicycle access ways between discontinuous street right-of-way where the following applies:~~

- ~~1. Where a new street is not practicable;~~
- ~~2. Through excessively long blocks at intervals not exceeding five hundred feet of frontage as measured between nearside right-of-way lines;~~
- ~~3. Where the lack of street continuity creates inconvenient or out of direction travel patterns for local pedestrian or bicycle trips.~~

~~B. Pedestrian/bicycle accessways shall be provided:~~

- ~~1. To provide direct access to nearby neighborhood activity centers, transit streets and other transit facilities;~~
- ~~2. Where practicable, to provide direct access to other adjacent developments and to adjacent undeveloped property likely to be subdivided or otherwise developed in the future;~~
- ~~3. To provide direct connections from cul-de-sacs and internal private drives to the nearest available street or neighborhood activity center;~~
- ~~4. To provide connections from cul-de-sacs or local streets to arterial or collector streets.~~

~~C. An exception may be made where the community development director determines that construction of a separate accessway is not feasible due to physical or jurisdictional constraints. Such evidence may include but is not limited to:~~

- ~~1. That other federal, state or local requirements prevent construction of an accessway;~~
- ~~2. That the nature of abutting existing development makes construction of an accessway impracticable;~~
- ~~3. That the accessway would cross an area affected by an overlay district in a manner incompatible with the purposes of the overlay district;~~
- ~~4. That the accessway would cross topography consisting predominantly of slopes over twenty-five percent;~~
- ~~5. That the accessway would terminate at the urban growth boundary and extension to another public right-of-way is not part of an adopted plan.~~

~~D. Pedestrian/bicycle accessways shall comply with the development standards set out in Section 12.24 of this code, with the ownership, liability and maintenance standards in Section 12.24 of this code, and with such other design standards as the city may adopt.~~

16.12.095 Minimum Improvements--Public Facilities and Services.

The following minimum improvements shall be required of all applicants for a land division under Title 16, unless the decision-maker determines that any such improvement is not proportional to the impact imposed on the City's public systems and facilities:

A. Transportation System. Applicants and all subsequent lot owners shall be responsible for improving the city's planned level of service on all public streets, including alleys within the land division and those portions of public streets adjacent to but only partially within the land division. All applicants shall execute a binding agreement to not remonstrate against the formation of a local improvement district for street improvements that benefit the applicant's property. Applicants are responsible for designing and providing adequate vehicular, bicycle and pedestrian access to their developments and for accommodating future access to neighboring undeveloped properties that are suitably zoned for future development. Storm drainage facilities shall be installed and connected to off-site natural or man-made drainageways. Upon completion of the street improvement survey, the applicant shall reestablish and protect

monuments of the type required by ORS 92.060 in monument boxes with covers at every public street intersection and all points of curvature and points of tangency of their center line, and at such other points as directed by the city engineer.

B. Stormwater Drainage System. Applicants shall design and install drainage facilities within land divisions and shall connect the development's drainage system to the appropriate downstream storm drainage system as a minimum requirement for providing services to the applicant's development. The applicant shall obtain county or state approval when appropriate. All applicants shall execute a binding agreement to not remonstrate against the formation of a local improvement district for stormwater drainage improvements that benefit the applicant's property. Applicants are responsible for extending the appropriate storm drainage system to the development site and for providing for the connection of upgradient properties to that system. The applicant shall design the drainage facilities in accordance with city drainage master plan requirements, Chapter 13.12 and the Public Works Stormwater and Grading Design Standards.

C. Sanitary Sewer System. The applicant shall design and install a sanitary sewer system to serve all lots or parcels within a land division in accordance with the city's sanitary sewer design standards, and shall connect those lots or parcels to the city's sanitary sewer system, except where connection is required to the county sanitary sewer system as approved by the county. All applicants shall execute a binding agreement to not remonstrate against the formation of a local improvement district for sanitary sewer improvements that benefit the applicant's property. Applicants are responsible for extending the city's sanitary sewer system to the development site and through the applicant's property to allow for the future connection of neighboring undeveloped properties that are suitably zoned for future development. The applicant shall obtain all required permits and approvals from all affected jurisdictions prior to final approval and prior to commencement of construction. Design shall be approved by the city engineer before construction begins.

D. Water System. The applicant shall design and install a water system to serve all lots or parcels within a land division in accordance with the city public works water system design standards, and shall connect those lots or parcels to the city's water system. All applicants shall execute a binding agreement to not remonstrate against the formation of a local improvement district for water improvements that benefit the applicant's property. Applicants are responsible for extending the city's water system to the development site and through the applicant's property to allow for the future connection of neighboring undeveloped properties that are suitably zoned for future development.

E. Sidewalks. The applicant shall provide for sidewalks on both sides of all public streets, on any private street if so required by the decision-maker, and in any special pedestrian way within the land division. Exceptions to this requirement may be allowed in order to accommodate topography, trees or some similar site constraint. In the case of major or minor arterials, the decision-maker may approve a land division without sidewalks where sidewalks are found to be dangerous or otherwise impractical to construct or are not reasonably related to the applicant's development. The decision-maker may require the applicant to provide sidewalks concurrent with the issuance of the initial building permit within the area that is the subject of the land division application. Applicants for partitions may be allowed to meet this requirement by executing a binding agreement to not remonstrate against the formation of a local improvement district for sidewalk improvements that benefit the applicant's property.

F. Bicycle Routes. If appropriate to the extension of a system of bicycle routes, existing or planned, the decision-maker may require the installation of separate bicycle lanes within streets and separate bicycle paths.

G. Street Name Signs and Traffic Control Devices. ~~The applicant shall pay the city and the city installs street name signs at all street intersections.~~ The applicant shall install street signs and traffic control devices as directed by the city engineer. Street name signs and traffic control devices shall be in conformance with all applicable city regulations and standards.

H. Street Lights. The applicant shall install street lights which shall be served from an underground source of supply. Street lights shall be in conformance with all city regulations.

I. Street Trees. Refer to Chapter 12.08, Street Trees.

J. Bench Marks. At least one bench mark shall be located within the subdivision boundaries using datum plane

specified by the city engineer.

K. Other. The applicant shall make all necessary arrangements with utility companies or other affected parties for the installation of underground lines and facilities. Electrical lines and other wires, including but not limited to communication, street lighting and cable television, shall be placed underground.

L. Oversizing of Facilities. All facilities and improvements shall be designed to city standards as set out in the city's facility master plan, public works design standards, or other city ordinances or regulations. Compliance with facility design standards shall be addressed during final engineering. The city may require oversizing of facilities to meet standards in the city's facility master plan or to allow for orderly and efficient development. Where oversizing is required, the applicant may request reimbursement from the city for oversizing based on the city's reimbursement policy and funds available, or provide for recovery of costs from intervening properties as they develop.

M. Erosion Control Plan--Mitigation. The applicant shall be responsible for complying with all applicable provisions of Chapter 17.47 with regard to erosion control.

OCMC CHAPTER 17.04 – DEFINITIONS

17.04.030 "Accessway, pedestrian/bicycle" means any off-street path or way as described in Chapter ~~12.24~~ 12.04, intended primarily for pedestrians or bicycles and which provides direct routes within and from new developments to residential areas, retail and office areas, transit streets and neighborhood activity centers.

17.04.712 "Major transit stop" means transit centers, high capacity transit stations, major bus stops, inter-city bus passenger terminals, inter-city rail passenger terminals, and bike-transit facilities as shown in the Regional Transportation Plan.

17.04.800 "Neighborhood activity center" refers to land uses which attract or are capable of attracting a greater than average level of pedestrian activity. Neighborhood activity centers include, but are not limited to, parks, schools, retail store and service areas, shopping centers, recreational centers, meeting rooms, theaters, museums, transit stops and other pedestrian oriented uses. substantial amount of pedestrian use. Neighborhood activity centers include, but are not limited to, parks, schools, retail store and service areas, shopping centers, recreational centers, meeting rooms, theaters, museums and other pedestrian oriented uses.

17.04.1310 "Transit street" means any street identified as an existing or planned bus, rail or mass transit route by a transit agency or a street on which transit operates. any street identified as an existing or planned bus or light rail transit route as shown in the city's transportation master plan (1989 or as subsequently amended).

17.04.1312 "Transportation facilities" shall include construction, operation, and maintenance of travel lanes, bike lanes and facilities, curbs, gutters, drainage facilities, sidewalks, transit stops, landscaping, and related improvements located within rights-of-ways controlled by a public agency, consistent with the City Transportation System Plan.

TRANSPORTATION FACILITIES ARE TO BE IDENTIFIED AS A PERMITTED USE IN ALL ZONING DESIGNATIONS WITH THE ADDITION OF THE FOLLOWING CODE SECTIONS:

17.08.020.J. Transportation facilities

17.10.020.J. Transportation facilities

17.12.020.J. Transportation facilities

17.14.020.J. Transportation facilities

17.16.020.K. Transportation facilities

17.18.020.I. Transportation facilities

17.29.020.AA. Transportation facilities

17.31.020.Q. Transportation facilities

17.36.020.O. Transportation facilities

17.37.020.O. Transportation facilities

17.39.020.G. Transportation facilities

OCMC CHAPTER 17.34 "MUD"—MIXED-USE DOWNTOWN DISTRICT

~~**17.34.070.H** — Parking Standards. The minimum number of off-street vehicular parking stalls required in Chapter 17.52 may be reduced by fifty percent.~~

OCMC CHAPTER 17.52 OFF-STREET PARKING AND LOADING

17.52.15 Planning Commission Adjustment of Parking Standards.

A. Purpose: The purpose of permitting a Planning Commission Adjustment to Parking Standards is to provide for flexibility in modifying parking standards in all zoning districts, without permitting an adjustment that would adversely impact the surrounding or planned neighborhood. The purpose of an adjustment is to provide flexibility to those uses which may be extraordinary, unique or to provide greater flexibility for areas that can accommodate a denser development pattern based on existing infrastructure and ability to access the site by means of walking, biking or transit. An adjustment to a minimum or maximum parking standard may be approved based on a determination by the Planning Commission that the adjustment is consistent with the purpose of this Code, and the approval criteria can be met.

B. Procedure: A request for a Planning Commission Parking Adjustment shall be initiated by a property owner or authorized agent by filing a land use application. The application shall be accompanied by a site plan, drawn to scale, showing the dimensions and arrangement of the proposed development and parking plan, the extent of the adjustment requested along with findings for each applicable approval criteria. A request for a parking adjustment shall be processed as a Type III application as set forth in Chapter 17.50.

C. Approval criteria for the adjustment are as follows:

1. Documentation: The applicant shall document that the individual project will require an amount of parking that is different from that required after all applicable reductions have been taken.
2. Parking analysis for surrounding uses and on- street parking availability- The applicant must show that there is a continued 15% parking vacancy in the area adjacent to the use during peak parking periods and that the applicant has permission to occupy this area to serve the use pursuant to the procedures set forth by the Community Development Director.
 - a. For the purposes of demonstrating the availability of on street parking as defined in 17.52.020.B.3 , the applicant shall undertake a parking study during time periods specified by the Community Development Director. The time periods shall include those during which the highest parking demand is anticipated by the proposed use. Multiple observations during multiple days shall be required. Distances are to be calculated as traversed by a pedestrian that utilizes sidewalks and legal crosswalks or an alternative manner as accepted by the Community Development Director.
 - b. The onsite parking requirements may be reduced based on the parking vacancy identified in the parking study. The amount of the reduction in onsite parking shall be calculated as follows:
 - i. Vacant on-street parking spaces within 300 feet of the site will reduce onsite parking requirements by 0.5 parking spaces; and
 - ii. Vacant on-street parking spaces between 300 and 600 feet of the will reduce onsite parking requirements by 0.2 parking spaces.
3. Function and Use of Site: The applicant shall demonstrate that modifying the amount of required parking spaces will not significantly impact the use or function of the site and/or adjacent sites;
4. Compatibility: The proposal is compatible with the character, scale and existing or planned uses of the surrounding neighborhood;
5. Safety: The proposal does not significantly impact the safety of adjacent properties and Rights-of-Way.

6. Services: The proposal will not create a significant impact to public services, including fire and emergency services.

17.52.020 Number of automobile spaces required. *(replace section with the following)*

A. The number of parking spaces shall comply with the minimum and maximum standards listed in Table 17.52.020. The parking requirements are based on spaces per one thousand square feet gross net leasable area unless otherwise stated.

<u>Table 17.52.020</u> <u>Number of automobile spaces required.</u>		
LAND USE	PARKING REQUIREMENTS	
	MINIMUM	MAXIMUM
~~Single-Family Dwelling~~	~~1.00 per unit~~	
Multi-Family: Studio	1.00 per unit	1.5 per unit
Multi-Family: 1 bedroom	1.25 per unit	2.00 per unit
Multi-Family: 2 bedroom	1.5 per unit	2.00 per unit
Multi-Family: 3 bedroom	1.75 per unit	2.50 per unit
Hotel, ~~/~~ Motel	1.0 per guest room	1.25 per guest room
~~Welfare~~ /Correctional Institution	1 per 7 beds	1 per 5 beds
Senior housing, including congregate care, residential care and assisted living facilities; nursing homes and other types of group homes;	1 per 7 beds	1 per 5 beds
Hospital	2.00	4.00
~~Religious Assembly Building~~	~~0.25 per seat~~	~~0.5 per seat~~
Preschool Nursery/Kindergarten	2.00	3.00
Elementary/Middle School	1 per classroom	1 per classroom + 1 per administrative employee + 0.25 per seat in auditorium/assembly room/stadium
High School, ~~/~~ College, ~~/~~ Commercial School for Adults	0.20 per # staff and students	0.30 per # staff and students
Auditorium, ~~/~~ Meeting Room, ~~/~~ Stadium, ~~/~~ ~~Religious Assembly Building, /movie theater,~~	.25 <u>per seat</u>	0.5 per seat
Retail Store, ~~/~~ Shopping Center, ~~/~~ Restaurants	4.10	5.00
Office	2.70	3.33
Medical or Dental Clinic	2.70	3.33
Sports Club, ~~/~~ Recreation Facilities	Case Specific	5.40

Storage Warehouse, ~~/~~ Freight Terminal	0.30 ~~per gross thousand square feet~~	0.40 ~~per gross thousand square feet~~
Manufacturing, ~~/~~ Wholesale Establishment	1.60 ~~per gross thousand square feet~~	1.67 ~~per gross thousand square feet~~
Light Industrial, ~~/~~ Industrial Park	1.3	1.60

1. Multiple Uses. In the event several uses occupy a single structure or parcel of land, the total requirements for off-street parking shall be the sum of the requirements of the several uses computed separately.
 2. Requirements for types of buildings and uses not specifically listed herein shall be determined by the community development director, based upon the requirements of comparable uses listed.
 3. Where calculation in accordance with the above list results in a fractional space, any fraction less than one-half shall be disregarded and any fraction of one-half or more shall require one space.
 4. The minimum required parking spaces shall be available for the parking of operable passenger automobiles of residents, customers, patrons and employees only, and shall not be used for storage of vehicles or materials or for the parking of vehicles used in conducting the business or use.
 5. A Change in use within an existing building located in the MUD Design District is exempt from additional parking requirements. Additions to an existing building and new construction are required to meet the minimum parking requirements for the areas as specified in Table 17.52.020 for the increased square footage.
- B. Parking requirements can be met either onsite, or offsite by meeting the following conditions:
1. Mixed uses. If more than one type of land use occupies a single structure or parcel of land, the total requirements for off-street automobile parking shall be the sum of the requirements for all uses, unless it can be shown that the peak parking demands are actually less (e.g. the uses operate on different days or at different times of the day). In that case, the total requirements shall be reduced accordingly, up to a maximum reduction of 50%, as determined by the community development director.
 2. Shared parking. Required parking facilities for two or more uses, structures, or parcels of land may be satisfied by the same parking facilities used jointly, to the extent that the owners or operators show that the need for parking facilities does not materially overlay (e.g., uses primarily of a daytime versus nighttime nature), that the shared parking facility is within 1,000 feet of the potential uses, and provided that the right of joint use is evidenced by a recorded deed, lease, contract, or similar written instrument authorizing the joint use.
 3. On-Street Parking. On-street parking may be counted toward the minimum standards when it is on the street face abutting the subject land use. An on-street parking space must not obstruct a required clear vision area and it shall not violate any law or street standard. On-street parking for commercial uses shall conform to the following standards:
 - a. Dimensions. The following constitutes one on-street parking space:
 1. Parallel parking, each [22] feet of uninterrupted and available curb;
 2. [45/60] degree diagonal, each with [15] feet of curb;
 3. 90 degree (perpendicular) parking, each with [12] feet of curb.
 4. Public Use Required for Credit. On-street parking spaces counted toward meeting the parking requirements of a specific use may not be used exclusively by that use, but shall be available for general public use at all times. Signs or other actions that limit general public use of on-street spaces are prohibited.
- C. Reduction of the Number of Automobile Spaces Required. The required number of parking stalls may be reduced in the
- Downtown Parking Overlay District: 50% reduction in the minimum number of spaces required is allowed prior to seeking further reductions in sections 2 and 3 below
1. Transit Oriented Development. For projects not located within the Downtown Parking Overlay District, the Community Development Director may reduce the required number of parking stalls up to 25% when it is

determined that a project in a commercial center (60,000 square feet or greater of retail or office use measured cumulatively within a 500 foot radius) or multi-family development with over 80 units, is adjacent to or within 1,320 feet of an existing or planned public transit street and is within 1,320 feet of the opposite use (commercial center or multi-family development with over 80 units)

2. Reduction in Parking for Tree Preservation. The Community Development Director may grant an adjustment to any standard of this requirement provided that the adjustment preserves a regulated tree or grove so that the reduction in the amount of required pavement can help preserve existing healthy trees in an undisturbed, natural condition. The amount of reduction must take into consideration any unique site conditions and the impact of the reduction on parking needs for the use, and must be approved by the Community Development Director. This reduction is discretionary.
3. Transportation Demand Management. The Community Development Director may reduce the required number of parking stalls up to 25% when a parking-traffic study prepared by a traffic engineer demonstrates:
 - a. Alternative modes of transportation, including transit, bicycles, and walking, and/or special characteristics of the customer, client, employee or resident population will reduce expected vehicle use and parking space demand for this development, as compared to standard Institute of Transportation Engineers vehicle trip generation rates and further that the Transportation Demand Management Program promotes or achieves parking utilization lower than minimum city parking requirements.
 - b. Transportation Demand Management (TDM) Program has been developed for approval by, and is approved by the City Engineer. The plan will contain strategies for reducing vehicle use and parking demand generated by the development and will be measured annually. If, at the annual assessment, the City determines the plan is not successful, the plan may be revised. If the City determines that no good-faith effort has been made to implement the plan, the City may take enforcement actions.

17.52.030.E ~~Carpool and Vanpool Parking. New office and industrial~~ Carpool and Vanpool Parking. New office and industrial developments with seventy-five or more parking spaces, and new hospitals, government offices, group homes, nursing and retirement homes, schools and transit park-and-ride facilities with fifty or more parking spaces, shall identify the spaces available for employee, student and commuter parking and designate at least five percent, but not fewer than two, of those spaces for exclusive carpool and vanpool parking. Carpool and vanpool parking spaces shall be located closer to the main employee, student or commuter entrance than all other employee, student or commuter parking spaces with the exception of handicapped ADA accessible parking spaces. The carpool/vanpool spaces shall be clearly marked "Reserved - Carpool/Vanpool Only."

17.52.040 - Bicycle parking standards.

- A. Purpose-Applicability. To encourage bicycle transportation to help reduce principal reliance on the automobile, and to ensure bicycle safety and security, bicycle parking shall be provided in conjunction with all uses other than single-family dwellings or duplexes.
- B. Number of Bicycle Spaces Required. For any use not specifically mentioned in Table A, the bicycle parking requirements shall be the same as the use which, as determined by the Community Development Director, is most similar to the use not specifically mentioned. Calculation of the number of bicycle parking spaces required shall be determined in the manner established in Section 17.52.020 for determining automobile parking space requirements. Modifications to bicycle parking requirements may be made through the Site Plan and Design, Conditional Use, or Master Plan review process.

TABLE A Required Bicycle Parking Spaces*

Where two options for a requirement are provided, the option resulting in more bicycle parking applies. Where a calculation results in a fraction, the result is rounded up to the nearest whole number.

USE	<u>MINIMUM BICYCLE PARKING</u>	<u>MINIMUM BICYCLE PARKING – COVERED</u> – The following percentage of bicycle parking is required to be covered
~~Multiple~~ <u>Multi-family</u> (three or more units)	1 per 10 units (minimum of 2)	<u>50%</u> (minimum of 1)
Institutional		
~~Welfare institution~~	~~1 per 20~~ 10 auto spaces	
Correctional institution	1 per ~~30~~ 15 auto spaces (minimum of 2)	<u>30%</u> (minimum of 1)
Nursing home <u>or</u> care facility, ~~sanitarium~~	1 per 30 auto spaces (minimum of 2)	<u>30%</u> (minimum of 1)
Hospital	1 per 20 auto spaces (minimum of 2)	<u>30%</u> (minimum of 1)
Park-and-ride lot	~~5~~ 1 per 5 auto spaces ~~acre, at least one of which is a locker~~ (minimum of 2)	<u>50%</u> (minimum of 1)
Transit center	~~5~~ 1 per 5 auto spaces ~~center at least one of which is a locker~~ (minimum of 2)	<u>50%</u> (minimum of 1)
Parks and open space	~~2, or~~ 1 per 10 auto spaces (minimum of 2)	<u>0%</u>
Public parking lots	1 per ~~20~~ 10 auto spaces (minimum of 2)	<u>50%</u> (minimum of 1)
Automobile parking structures	1 per ~~20~~ 10 auto spaces (minimum of 4)	<u>80%</u> (minimum of 2)
Religious institutions, <u>movie theater, auditorium or meeting room</u>	1 per ~~20~~ 10 auto spaces (minimum of 2)	<u>30%</u> (minimum of 1)
Libraries, museums	1 per ~~10~~ 5 auto spaces (minimum of 2)	<u>30%</u> (minimum of 1)
Preschool, nursery, kindergarten	<u>2 per classroom</u> (minimum of 2)	<u>50%</u> (minimum of 1)
Elementary, ~~junior high~~	4 per classroom (minimum of 2)	<u>50%</u> (minimum of 1)
<u>Junior high and High school</u>	2 per classroom (minimum of 2)	<u>50%</u> (minimum of 2)
College, business/commercial schools	2 per classroom (minimum of 2)	<u>50%</u> (minimum of 1)
~~Other auditorium/meeting room~~	~~1 per 20~~ auto spaces (minimum of 2)	
Swimming pools, gymnasiums, ball courts	1 per 10 auto spaces (minimum of 2)	<u>30%</u> (minimum of 1)
Retail stores and shopping centers	1 per 20 auto spaces	<u>50%</u> (minimum of 2)

USE	<u>MINIMUM BICYCLE PARKING</u>	<u>MINIMUM BICYCLE PARKING – COVERED</u> – The following percentage of bicycle parking is required to be covered
	(minimum of 2)	
Retail stores handling exclusively bulky merchandise such as automobile, boat or trailer sales or rental	1 per 40 auto spaces (minimum of 2)	0%
Bank, office	1 per 20 auto spaces (minimum of 2)	50% (minimum of 1)
Medical and dental clinic	1 per 20 auto spaces (minimum of 2)	50% (minimum of 1)
Convenience food store	1 per 10 auto spaces	
Furniture and appliance stores	1 per 40 auto spaces	
Eating and drinking establishment,	1 per 20 auto spaces (minimum of 2)	0%
Gasoline service station	12-per 10 auto spaces (minimum of 2)	0%

*Covered bicycle parking is not required for developments with 2 or fewer stalls.

C. Security of Bicycle Parking Location of Bicycle Parking

Bicycle parking facilities shall be secured. Acceptable secured bicycle parking area shall be in the form of a lockable enclosure onsite, secure room in a building onsite, a covered or uncovered rack onsite, bicycle parking within the adjacent right-of-way or another form of secure parking where the bicycle can be stored, as approved by the decision maker. All bicycle racks and lockers shall be securely anchored to the ground or to a structure. Bicycle racks shall be designed so that bicycles may be securely locked to them without undue inconvenience and, when in the right-of-way shall comply with clearance and ADA requirements.

~~1. Bicycle parking shall be located on-site, in one or more convenient, secure and accessible location. The City Engineer and the community development director may permit the bicycle parking to be provided within the public right-of-way. If sites have more than one building, bicycle parking shall be distributed as appropriate to serve all buildings. If a building has two or more main building entrances, the review authority may require bicycle parking to be distributed to serve all main building entrances, as it deems appropriate.~~

~~2. Bicycle parking areas shall be clearly marked or visible from on-site buildings or the street. If a bicycle parking area is not plainly visible from the street or main building entrance, a sign must be posted indicating the location of the bicycle parking area. Indoor bicycle parking areas shall not require stairs to access the space unless approved by the community development director.~~

~~3. All bicycle parking areas shall be located to avoid conflicts with pedestrian and motor vehicle movement.~~

~~a. Bicycle parking areas shall be separated from motor vehicle parking and maneuvering areas and from arterial streets by a barrier or a minimum of five feet.~~

~~b. Bicycle parking areas shall not obstruct pedestrian walkways; provided, however, that the review authority may allow bicycle parking in the public sidewalk where this does not conflict with pedestrian accessibility.~~

~~4. Accessibility:~~

~~a. Outdoor bicycle areas shall be connected to main building entrances by pedestrian accessible walks.~~

~~b. Outdoor bicycle parking areas shall have direct access to a public right of way.~~

D. Bicycle parking facilities shall offer security in the form of either a lockable enclosure or a stationary rack to which the bicycle can be locked. All bicycle racks and lockers shall be securely anchored to the ground or to a structure.

Bicycle racks shall be designed so that bicycles may be securely locked to them without undue inconvenience.

Location of Bicycle Parking

1. Bicycle parking shall be located on-site, in one or more convenient, secure and accessible location. The City Engineer and the Community Development Director may permit the bicycle parking to be provided within the right-of-way provided adequate clear zone and ADA requirements are met. If sites have more than one building, bicycle parking shall be distributed as appropriate to serve all buildings. If a building has two or more main building entrances, the review authority may require bicycle parking to be distributed to serve all main building entrances, as it deems appropriate.
2. Bicycle parking areas shall be clearly marked or visible from on-site buildings or the street. If a bicycle parking area is not plainly visible from the street or main building entrance, a sign must be posted indicating the location of the bicycle parking area. Indoor bicycle parking areas shall not require stairs to access the space unless approved by the community development director.
3. All bicycle parking areas shall be located to avoid conflicts with pedestrian and motor vehicle movement.
 - a. Bicycle parking areas shall be separated from motor vehicle parking and maneuvering areas and from arterial streets by a barrier or a minimum of five feet.
 - b. Bicycle parking areas shall not obstruct pedestrian walkways; provided, however, that the review authority may allow bicycle parking in the right-of-way where this does not conflict with pedestrian accessibility.
4. Accessibility.
 - a. Outdoor bicycle areas shall be connected to main building entrances by pedestrian accessible walkways.
 - b. Outdoor bicycle parking areas shall have direct access to a right-of-way.
 - c. Outdoor bicycle parking should be no farther from the main building entrance than the distance to the closest vehicle space, or 50 feet, whichever is less, unless otherwise determined by the community development director, city engineer, or planning commission.

17.52.090 - Loading Areas

A. Purpose.

1. The purpose of this section is to provide adequate loading areas for commercial, office, retail and industrial uses that do not interfere with the operation of adjacent streets.

B. Applicability.

1. Section 17.52.090 applies to uses that are expected to have service or delivery truck visits with a 40-foot or longer wheelbase, at a frequency of one or more vehicles per week. The City Engineer and decision maker shall determine through Site Plan and Design Review the number, size, and location of required loading areas, if any.

C. Standards.

1. The off-street loading space shall be large enough to accommodate the largest vehicle that is expected to serve the use without obstructing vehicles or pedestrian traffic on adjacent streets and driveways. Applicants are advised to provide complete and accurate information about the potential need for loading spaces because the City Engineer or decision maker may restrict the use of other public right-of-way to ensure efficient loading areas and reduce interference with other uses.

2. Where parking areas are prohibited between a building and the street, loading areas are also prohibited.

3. The City Engineer and decision maker, through Site Plan and Design Review, may approve a loading area adjacent to or within a street right-of-way when all of the following loading and unloading operations conditions are met:

- a. Short in duration (i.e., less than one hour);
- b. Infrequent (less than three operations daily between 5:00 a.m. and 12:00 a.m. or all operations between 12:00 a.m. and 5:00 a.m. at a location that is not adjacent to a residential zone);
- c. Does not obstruct traffic during peak traffic hours;
- d. Does not interfere with emergency response services; and
- e. Is acceptable to the applicable roadway authority.

OCMC CHAPTER 17.62 - SITE PLAN AND DESIGN REVIEW

17.62.050.A.2. Vehicular Access and Connectivity.

- a. Parking areas shall be located behind buildings, below buildings, or on one or both sides of buildings.
- b. Ingress and egress locations on ~~public~~ thoroughfares shall be located in the interest of public safety. Access for emergency services (fire and police) shall be provided.
- c. Alleys or vehicular access easements shall be provided in the following Districts: R-2, MUC-1, MUC-2, MUD and NC zones unless other permanent provisions for access to off-street parking and loading facilities are approved by the decision-maker. The corners of alley intersections shall have a radius of not less than ten feet.
- d. Sites abutting an alley shall be required to gain vehicular access from the alley unless deemed impracticable by the community development director.
- e. Where no alley access is available, the development shall be configured to allow only one driveway per frontage. On corner lots, the driveway(s) shall be located off of the side street (unless the side street is an arterial) and away from the street intersection. Shared driveways shall be required as needed to accomplish the requirements of this section. The location and design of pedestrian access from the ~~public~~ sidewalk shall be emphasized so as to be clearly visible and distinguishable from the vehicular access to the site. Special landscaping, paving, lighting, and architectural treatments may be required to accomplish this requirement.
- f. Driveways that are at least 24 feet wide shall align with existing or planned streets on adjacent sites.
- gf. Development shall be required to provide existing or future connections to adjacent sites through the use of vehicular and pedestrian access easements where applicable. Such easements shall be required in addition to applicable street dedications as required in Chapter 12.04.
- h. Vehicle and pedestrian access easements may serve in lieu of streets when approved by the decision maker only where dedication of a street is deemed impracticable by the city.
- i. Vehicular and pedestrian easements shall allow for public access and shall comply with all applicable pedestrian access requirements.
- j. In the case of dead-end stub streets that will connect to streets on adjacent sites in the future, notification that the street is planned for future extension shall be posted on the stub street until the street is extended and shall inform the public that the dead-end street may be extended in the future. k. Parcels larger than three acres shall provide streets as required in Chapter 12.04. The streets shall connect with existing or planned streets adjacent to the site.
- lg. Parking garage entries (~~both individual, private and shared parking garages~~) shall not dominate the streetscape. They shall be designed and situated to be ancillary to the use and architecture of the ground floor. This standard applies to both public garages and any individual private garages, whether they front on a street or private interior access road.
- mh. Buildings containing above-grade structured parking shall screen such parking areas with landscaping or landscaped berms, or incorporate contextual architectural elements that complement adjacent buildings or buildings in the area. Upper level parking garages shall use articulation or fenestration treatments that break up the massing of the garage and/or add visual interest.

17.62.050.A.15.

Adequate right-of-way and improvements to streets, pedestrian ways, bike routes and bikeways, and transit facilities shall be provided and be consistent with the city's transportation master plan and design standards and this title. Consideration shall be given to the need for street widening and other improvements in the area of the proposed development impacted by traffic generated by the proposed development. This shall include, but not be limited to, improvements to the right-of-way, such as installation of lighting, signalization, turn lanes, median and parking strips, traffic islands, paving, curbs and gutters, sidewalks, bikeways, street drainage facilities and other facilities needed because of anticipated vehicular and pedestrian traffic generation. Compliance with 12.04 - Streets, Sidewalks and Public Places shall be sufficient to achieve right-of-way and improvement adequacy.

When approving land use actions, Oregon City requires all relevant intersections to be maintained at the minimum acceptable level of service (LOS) upon full build-out of the proposed land use action. The minimum acceptable LOS standards are as follows:

- a. ~~For signalized intersection areas of the city that are located outside the Regional Center boundaries a LOS of "D" or better for the intersection as a whole and no approach operating at worse than LOS "E" and a v/c ratio not higher than 1.0 for the sum of critical movements.~~
- b. ~~For signalized intersections within the Regional Center boundaries a LOS "D" can be exceeded during the peak hour; however, during the second peak hour, LOS "D" or better will be required as a whole and no approach operating at worse than LOS "E" and a v/c ratio not higher than 1.0.~~
- c. ~~For unsignalized intersection throughout the city a LOS "E" or better for the poorest approach and with no movement serving more than twenty peak hour vehicles operating at worse than LOS "F" will be tolerated for minor movements during a peak hour.~~

17.62.050.A.16. If ~~a transit agency~~Tri-Met, upon review of an application for an industrial, institutional, retail or office development, recommends that a bus stop, bus turnout lane, bus shelter, accessible bus landing pad, lighting, or transit stop connection be constructed, or that an easement or dedication be provided for one of these uses, consistent with an agency adopted or approved plan at the time of development, the review authority shall require such improvement, using designs supportive of transit use. Improvements at a major transit stop may include intersection or mid-block traffic management improvements to allow for crossings at major transit stops, as identified in the Transportation System Plan.

OCMC CHAPTER 17.65 – MASTER PLANS

17.65.050.C.2 ~~The transportation system has sufficient capacity based on the city's level of service standards and is capable of supporting the development proposed in addition to the existing and planned uses in the area, or will be made adequate~~ Development shall demonstrate compliance with Chapter 12.04 - Streets, Sidewalks and Public Places.

OCMC CHAPTER 17.56 – CONDITIONAL USE

17.56.010.A.3 ~~The site and proposed development are timely, considering the adequacy of transportation systems, public facilities and services existing or planned for the area affected by the use.~~ Development shall demonstrate compliance with Chapter 12.04 - Streets, Sidewalks and Public Places.



FILE NO.: Legislative File: L 13-01 - Transportation System Plan
Legislative File L 13-02 – Associated Oregon City Municipal Code Amendments

APPLICANT: Oregon City Public Works Department
John Lewis
625 Center Street, Oregon City, Oregon 97045

REPRESENTATIVE: DKS Associates, Consulting Engineers
Carl D. Springer, PE
720 SW Washington Street, Suite 500, Portland, OR 97205

REQUEST: Update the Oregon City Transportation System Plan, an Ancillary Document to the Oregon City Comprehensive Plan and adopt associated amendments to the Oregon City Municipal Code.

LOCATION: City-wide.

REVIEWER: Laura Terway, AICP
Christina Robertson-Gardiner, AICP

17.50.170 - Legislative hearing process.

A. Purpose. Legislative actions involve the adoption or amendment of the city's land use regulations, comprehensive plan, maps, inventories and other policy documents that affect the entire city or large portions of it. Legislative actions which affect land use must begin with a public hearing before the planning commission.

B. Planning Commission Review.

1. Hearing Required. The planning commission shall hold at least one public hearing before recommending action on a legislative proposal. Any interested person may appear and provide written or oral testimony on the proposal at or prior to the hearing. The community development director shall notify the Oregon Department of Land Conservation and Development (DLCD) as required by the post-acknowledgment procedures of ORS 197.610 to 197.625, as applicable.

2. The community development director's Report. Once the planning commission hearing has been scheduled and noticed in accordance with Section 17.50.090(C) and any other applicable laws, the community development director shall prepare and make available a report on the legislative proposal at least seven days prior to the hearing.

3. Planning Commission Recommendation. At the conclusion of the hearing, the planning commission shall adopt a recommendation on the proposal to the city commission. The planning commission shall make a report and recommendation to the city commission on all legislative proposals. If the planning commission recommends adoption of some form of the proposal, the planning commission shall prepare and forward to the city commission a report and recommendation to that effect.

C. City Commission Review.

1. City Commission Action. Upon a recommendation from the planning commission on a legislative action, the city commission shall hold at least one public hearing on the proposal. Any interested person

may provide written or oral testimony on the proposal at or prior to the hearing. At the conclusion of the hearing, the city commission may adopt, modify or reject the legislative proposal, or it may remand the matter to the planning commission for further consideration. If the decision is to adopt at least some form of the proposal, and thereby amend the city's land use regulations, comprehensive plan, official zoning maps or some component of any of these documents, the city commission decision shall be enacted as an ordinance.

2. Notice of Final Decision. Not later than five days following the city commission final decision, the community development director shall mail notice of the decision to DLCD in accordance with ORS 197.615(2).

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

IF YOU HAVE ANY QUESTIONS ABOUT THIS APPLICATION, PLEASE CONTACT THE PLANNING DIVISION OFFICE AT 503-722-3789.

Proposed Project

The proposed Oregon City Transportation System Plan (TSP) will articulate policy and identify facilities that will guide the development and management of a multi-modal transportation system through 2035. The updated document reflects the changes that have occurred since the current Transportation System Plan was adopted in 2001. Since then new requirements have been integrated into the Oregon Transportation Plan, the Oregon Highway Plan, and the Metro RTP, many key transportation projects have been completed, the local UGB and Urban Reserve areas have changed, and the City's Comprehensive Plan and Municipal Code were updated. These regulatory, land use and transportation system changes informed the resulting TSP update.

The proposed development includes:

- Adoption of the Transportation System Plan as an ancillary document to the Comprehensive Plan
- Amendments to the Oregon City Municipal Code to implement the Transportation System Plan
- Adoption of the Regional Center boundary
- Temporarily exempting permitted and conditional uses from complying with the current mobility standards for three intersections on the state highway system: OR 99E/ I-205 ramps, I-205/OR 213 ramps, and OR 213/Beavercreek Road and all state facilities within or adjacent to the Regional Center.

FACTS

Public Involvement and Public Comment

The TSP update process provided opportunities for public involvement in the legislative decision making process through the public hearing process, newspaper noticing, meetings, online participation and open houses. The process was informed by a Stakeholder Advisory Team (SAT) which included representatives from the Citizen Involvement Council (CIC), Clackamas Community College, Chamber of Commerce, School District, Clackamas County, Main Street Oregon City, and private development interests as well as a Technical Advisory Team (TAT).

The public involvement process included (3) Technical Advisory Team meetings, four (4) Stakeholder Advisory Team meetings, four (4) Community Meetings and other tools identified in the Transportation System Plan Public Outreach Plan (Exhibit 1). The TSP was available for review on the Oregon City website at the following address: <http://www.octransportationplan.org/>.

Notice of the first Planning Commission public hearing for the proposal was published in the Clackamas Review on, and mailed to the affected agencies, the CIC and all Neighborhood Associations. In accordance with ORS 197.610 and OAR 660-018-000, a Notice of Proposed Amendment to the Oregon City Comprehensive Plan was provided to the Oregon Department of Land Conservation and Development 35 days prior to the first noticed Evidentiary Hearing on February 13, 2013. Notice was mailed to all property owners within the urban growth boundary (over 10,500) on February 13, 2013.

Comments received throughout the process are included in the record and have been provided to the Commission. The comments generally identified deficiencies in the transportation system and suggested opportunities for public improvements. The comments were reviewed and utilized when creating the list of projects identified in the Transportation System Plan. None of comments received were directed to any applicable approval criteria.

DECISION-MAKING CRITERIA:

Oregon City Comprehensive Plan

Section 1 Citizen Involvement

Goal 1.2 Community and Comprehensive Planning

Ensure that citizens, neighborhood groups, and affected property owners are involved in all phases of the comprehensive planning program.

Policy 1.2.1 - Encourage citizens to participate in appropriate government functions and land-use planning.

Goal 1.3 Community Education - Provide education for individuals, groups, and communities to ensure effective participation in decision-making processes that affect the livability of neighborhoods.

Goal 1.4 Community Involvement - Provide complete information for individuals, groups, and communities to participate in public policy planning and implementation of policies.

Policy 1.4.1 - Notify citizens about community involvement opportunities when they occur.

Goal 1.5 Government/Community Relations -Provide a framework for facilitating open, two-way communication between City representatives and individuals, groups, and communities.

Finding: Complies. Development of the plan included an extensive public involvement effort as documented in the Transportation System Plan Public Outreach Plan (Exhibit 1). Oregon City Public Works Department has presented the project to the public at a series of meetings including the Citizen Involvement Council, Neighborhood Associations, Planning Commission and City Commission. Documentation produced with the TSP update has been posted on the project website throughout the duration of the project and comments have been integrated into the final product. The product was reviewed through the Legislative approval process. Notification of the proposed Legislative action was sent to all property owners within the Urban Growth Boundary.

Section 2: Land Use

Goal 2.2 Downtown Oregon City

Develop the Downtown area, which includes the Historic Downtown Area, the “north end” of the Downtown, Clackamette Cove, and the End of the Oregon Trail area, as a quality place for shopping, living, working, cultural and recreational activities, and social interaction. Provide walkways for pedestrian and bicycle traffic, preserve views of Willamette Falls and the Willamette River, and preserve the natural amenities of the area.

Policy 2.2.2 - Support multi-modal transportation options throughout the Regional Center and to other Regional and Town Centers.

Policy 2.2.8 - Implement the Oregon City Downtown Community Plan and Oregon City Waterfront Master Plan with regulations and programs that support compatible and complementary mixed uses, including housing, hospitality services, restaurants, civic and institutional, offices, some types of industrial and retail uses in the Regional Center, all at a relatively concentrated density.

Policy 2.2.9 -Improve connectivity for vehicles, bicycles, and pedestrians within the Oregon City Downtown community and waterfront master plan areas and improve links between residential areas and the community beyond.

Policy 2.4.3 -Promote connectivity between neighborhoods and neighborhood commercial centers through a variety of transportation modes.

Policy 2.6.7 -Establish priorities to ensure that adequate public facilities are available to support the desired industrial development.

Finding: Complies. The Transportation System Plan provides opportunities to facilitate increased travel opportunities for vehicles, pedestrians and bicyclists by identifying insufficient facilities and associated prioritized projects. Implementation of the projects will result in a more complete transportation system with a variety of multi-modal travel options. In addition, temporarily exempting permitted and conditional uses from complying with the current mobility standards for three intersections on the state highway system: OR 99E/ I-205 ramps, I-205/OR 213 ramps, and OR 213/Beavercreek Road and all state facilities within or adjacent to the Regional Center will allow the City to continue to allow development as well as adoption of a Regional Center boundary. The plan included an analysis of all previous plans including the Downtown Community Plan and the Waterfront Master Plan. Amendments to the Oregon City Municipal Code implement the concepts identified in the TSP.

Section 6: Quality of Air, Water and Land Resources

Goal 6.1 Air Quality -Promote the conservation, protection and improvement of the quality of the air in Oregon City.

Policy 6.1.2 -Ensure that development practices comply with or exceed regional, state, and federal standards for air quality.

Finding: Complies. The share of improvements recommended in the TSP update which result in more significant levels of pollution has dramatically decreased since the 2001 TSP. As shown in Figure 24 of the TSP (Volume 1), projects related to walking, biking, and taking transit have increased from approximately 51% of the projects in the 2001 TSP to approximately 74% of the projects in the TSP update, represented by over 260 projects. This set of projects combined with projected employment growth within the city over the next 20 years results in an approximately 13% reduction in vehicle miles traveled (VMT) in the evening peak period through 2035, more than the 10% reduction set as a climate change target (TSP Volume 1, Table 25).

The Oregon City Municipal Code amendments are proposed to implement the TSP update and comply with the Regional Transportation Function Plan (RTFP) to include provisions to establish unobstructed paths on sidewalks, require more closely spaced pedestrian and bicycle accessways, support crossings in the vicinity of transit stops, and establish requirements for long-term bicycle parking (TSP Volume 2, Section K). Based on the existing review processes defined in the Oregon City Municipal Code, the proposed TSP update and code amendments are consistent.

Section 11: Public Facilities

Goal 11.1 Provision of Public Facilities

Serve the health, safety, education, welfare, and recreational needs of all Oregon City residents through the planning and provision of adequate public facilities.

Finding: Complies. The TSP is necessary to maintain compliance with Statewide Planning Goal 11, Public Facilities. Goal 11 requires that public facilities and services be provided in a timely, orderly and efficient manner. The goal's central concept is that local governments should plan public services in accordance with the community's needs as a whole rather than be forced to respond to individual developments as they occur. As shown in the findings below, the proposed update of the TSP is consistent with Goal 11.1.

Policy 11.1.1

Ensure adequate public funding for the following public facilities and services, if feasible:

- *Transportation infrastructure*

Finding: Complies. The TSP update includes a detailed discussion of funding for proposed transportation improvements, including expenditures expected from the Street Fund, Systems Development Charge (SDC) Fund, and Transportation Utility Fee Fund. In addition, the General Fund, a local fuel tax, an Urban Renewal District, local improvement districts, and debt financing are potential funding and financing resources (TSP Volume 1, Section 6 and TSP Volume 2, Section H). The TSP update establishes both a financially constrained set of proposed transportation improvements that can be funded by expected revenues, as well a planned set of transportation improvements that are not reasonably expected to be funded by 2035, but many of which are important to making progress on the goals and performance targets for the transportation system.

The recommended projects are projected to meet performance targets throughout the city, with exceptions. Some intersections on the state highway system cannot be brought into compliance with current ODOT and proposed TSP mobility standards without unreasonably expensive projects for which there is no identified funding. As the City is not required to assure compliance with mobility standards for permitted and conditional uses on state facilities beyond what is identified in the Regional Transportation System Plan, the City proposed to temporarily exempt permitted and conditional uses from complying with the current mobility standards for the interchanges of I-205/99E, I-205/213 and OR 213/Beavercreek Road and all state facilities within or adjacent to the Regional Center. With no reasonable solution resulting in compliance with mobility standards for these locations, the City will continue to work with regional partners to pursue special studies and alternate mobility standards for these locations. Minor improvements are anticipated for a majority of the three intersections until the solutions are adopted, likely one to two years after adoption of the Transportation System Plan. The proposed TSP is consistent with this policy.

Policy 11.1.2

Provide public facilities and services consistent with the goals, policies and implementing measures of the Comprehensive Plan, if feasible.

Finding: Complies. The TSP update provides guidance for the timely, efficient and economic provision of transportation facilities within the existing city and to new development areas within the UGB consistent with the relevant goals, policies and implementing measures of the Comprehensive Plan. The proposed TSP update is consistent with this policy.

Policy 11.1.4

Support development on underdeveloped or vacant buildable land within the city where public facilities and services are available or can be provided and where land-use compatibility can be found relative to the environment, zoning, and Comprehensive Plan goals.

Finding: Complies. The proposed improvements in the TSP update respond to the transportation demand that is estimated to be generated by development and growth in city households and employment that is projected through 2035. The projected growth is based on land use inventories and plans from Metro and the City. Projects within the TSP include street extensions and expansions of streets and intersections throughout the City (TSP Volume 2, Section I, Figures 2 and 3). In addition, the amendments to Oregon City Municipal Code provide an avenue for context sensitive street design for new development. The proposed TSP update is consistent with this policy.

Policy 11.1.5

Design the extension or improvement of any major public facility and service to an area to complement other public facilities and services at uniform levels.

Finding: Complies. The TSP update is designed to meet performance standards for existing and future development within the UGB. Investing in the transportation system improvements that are recommended in the TSP (TSP Volume 1, Table 5 and TSP Volume 2, Section I, Table 2) and implementing transportation demand management programs in the employment growth areas in the City are expected to accommodate the forecasted travel demand through 2035. The recommended projects are projected to meet performance targets throughout the city, with exceptions. Some intersections on the state highway system cannot be brought into compliance with current ODOT and proposed TSP mobility standards without unreasonably expensive projects for which there is no identified funding. As the City is not required to assure compliance with mobility standards for permitted and conditional uses on state facilities beyond what is identified in the Regional Transportation System Plan, the City proposed to temporarily exempt permitted and conditional uses from complying with the current mobility standards for the interchanges of I-205/99E, I-205/213 and OR 213/Beavercreek Road and all state facilities within or adjacent to the Regional Center. With no reasonable solution resulting in compliance with mobility standards for these locations, the City will continue to work with regional partners to pursue special studies and alternate mobility standards for these locations. Minor improvements are anticipated for a majority of the three intersections until the solutions are adopted, likely one to two years after adoption of the Transportation System Plan.

The City has adopted development code and engineering standards to ensure concurrent provision of public facilities and services at uniform levels. Pursuant to these requirements, street improvements are typically required to be extended to a new development area at the same time as other public facilities such as sewer, storm drainage, water, and emergency services. The proposed TSP update is consistent with this policy.

Policy 11.1.7

Develop and maintain a coordinated Capital Improvements Plan that provides a framework, schedule, prioritization, and cost estimate for the provision of public facilities and services within the City of Oregon City and its Urban Growth Boundary.

Finding: Complies. The TSP update capital improvement program (CIP) is included in the TSP. The CIP is organized into short-term, medium-term, and long-term projects to be implemented in increments of five years. Funding the proposed transportation solutions is discussed in Section 6 of the TSP and in the findings for Policy 11.1.1 above. The proposed Transportation System Plan is consistent with this policy.

Goal 11.6 Transportation Infrastructure

Optimize the City's investment in transportation infrastructure.

Finding: Complies. As described in Section 2 of the TSP, the approach to developing solutions was to focus on smaller cost-effective solutions rather than larger, more costly ones according to a five-tiered

process that starts with system management measures and ends with those to extend and build new roadways. As a result, as described in Section 5 of the TSP, the recommended solutions in the plan related to walking, biking, shared-use paths, family friendly facilities, transit, and crossings account for about 74% of the recommended solutions and those to driving, about 26% (Figure 10). Further, in Section 7 of the TSP, a financially constrained plan is presented. The projects and programs in this plan are expected to be funded by 2035 and, as such, are prioritized for implementation. The driving-related solutions in the financially constrained plan are classified as management, extension, and expansion projects. Of the almost \$74 million worth of investments in the financially constrained plan, about 80% are eligible for SDC funding. The proposed TSP update is consistent with Goal 11.6.

The recommended projects are projected to meet performance targets throughout the city, with exceptions. Some intersections on the state highway system cannot be brought into compliance with current ODOT and proposed TSP mobility standards without unreasonably expensive projects for which there is no identified funding. As the City is not required to assure compliance with mobility standards for permitted and conditional uses on state facilities beyond what is identified in the Regional Transportation System Plan, the City proposed to temporarily exempt permitted and conditional uses from complying with the current mobility standards for the interchanges of I-205/99E, I-205/213 and OR 213/Beavercreek Road and all state facilities within or adjacent to the Regional Center. With no reasonable solution resulting in compliance with mobility standards for these locations, the City will continue to work with regional partners to pursue special studies and alternate mobility standards for these locations. Minor improvements are anticipated for a majority of the three intersections until the solutions are adopted, likely one to two years after adoption of the Transportation System Plan.

Policy 11.6.1

Make investments to accommodate multi-modal traffic as much as possible to include bike lanes, bus turnouts and shelters, sidewalks, etc., especially on major and minor arterial roads, and in regional and employment centers.

Finding: Complies. As cited above, the recommended solutions in the plan related to walking, biking, shared-use paths, family friendly facilities, transit, and crossings account for about 74% of the recommended solutions, as shown in Section 5 of the TSP. The projects are included in both the Financially Constrained Transportation System (likely to be funded list) and Planned Transportation System (unlikely to be funded list) in the updated TSP. The financially constrained plan (Table 5) features pedestrian projects that fill sidewalk gaps throughout the city, including in the Downtown and Regional Center. Biking projects focus on wayfinding signage, shared lane marking, and bike lanes, and transit projects on signal prioritization and bus stop amenity improvements. All of the pedestrian, biking, and transit solutions in the financially constrained plan are reinforced and expanded upon by the family friendly route, shared-use path, and crossing solutions proposed in the plan as well.

A portion of Oregon City is designated as a Regional Center in the Metro 2040 Plan. By officially acknowledging the Regional Center boundary, multi-modal transportation options may be pursued. The proposed TSP update is consistent with this policy.

Policy 11.6.2

Advocate for local, state, and regional cooperation in achieving an integrated connected system such as for the Amtrak station, light rail, and bus transit.

Finding: Complies. Goal 6 in Section 2 of the updated TSP establishes that the City will work to “(i)ncrease the convenience and availability of pedestrian, bicycle, and transit modes,” which – in terms of transit facilities and service – entails collaborating with agencies like Metro, TriMet, and the South

Clackamas Transportation District (SCTD). As outlined in the plan and policy review (TSP Volume 2, Appendix A), intercity (high-speed) rail through Oregon City's Regional Center is indicated in Metro's 2035 RTP and 2040 Growth Concept, and TriMet's 2011 Transit Investment Plan (TIP) includes the following projects related to Oregon City.

- Walkability assessment at Molalla Avenue / County Red Soils Campus for pedestrian obstacles and recommendations for any needed projects.
- Portland to Milwaukie Light Rail Project, which will connect downtown Portland to Milwaukie and connect to Frequent Service buses from the Oregon City Regional Center.
- A proposed Bus Rapid Transit (BRT) corridor following I-205 between Clackamas Town Center possibly stretching as far as Beaverton, with service to Oregon City, Tualatin, and Tigard.
- Frequent bus service line expansion to and from Oregon City, primarily around the Oregon City Transit Center.

Transit related projects in the Financially Constrained Transportation System (TSP Volume 1, Table 5) and Planned Transportation System (TSP Volume 2, Section I, Table 2) include signal prioritization, bus amenity improvements, and formation of an Oregon City transportation management association (TMA), which will – at a minimum – involve coordination between the City and TriMet.

A portion of Oregon City is designated as a Regional Center in the Metro 2040 Plan. Acknowledgment of the Regional Center boundary supports an intercity (high-speed) rail through Oregon City's Regional Center is indicated in Metro's 2035 RTP and 2040 Growth Concept. The proposed TSP update is consistent with this policy.

Section 12: Transportation

Goal 12.1 Land Use-Transportation Connection

Ensure that the mutually supportive nature of land use and transportation is recognized in planning for the future of Oregon City.

Policy 12.1.1 - Maintain and enhance citywide transportation functionality by emphasizing multi-modal travel options for all types of land uses.

Policy 12.1.4 - Provide walkable neighborhoods. They are desirable places to live, work, learn and play, and therefore a key component of smart growth.

Finding: Complies. The Transportation System Plan provides opportunities to facilitate increased travel options for vehicles, pedestrians and bicyclists by identifying insufficient facilities and associated prioritized projects. Implementation of the projects will result in a more complete transportation system with a variety of multi-modal travel opportunities.

Goal 12.2 Local and Regional Transit

Promote regional mass transit (South Corridor bus, Bus Rapid Transit, and light rail) that will serve Oregon City.

Finding: Complies. The proposed plan supports mass transit by providing a complete transportation facility which will allow safe access for mass transit users and building and automotive and bicycle parking designs.

Goal 12.3 Multi-Modal Travel Options

Develop and maintain a transportation system that provides and encourages a variety of multi-modal travel options to meet the mobility needs of all Oregon City residents.

Policy 12.3.1 -Provide an interconnected and accessible street system that minimizes vehicle miles traveled and inappropriate neighborhood cut through traffic.

Policy 12.3.2 -Provide an interconnected and accessible pedestrian system that links residential areas with major pedestrian generators such as employment centers, public facilities, and recreational areas.

Policy 12.3.3 - Provide a well-defined and accessible bicycle network that links residential areas, major bicycle generators, employment centers, recreational areas, and the arterial and collector roadway network.

Policy 12.3.4 -Ensure the adequacy of pedestrian and bicycle connections to local, county, and regional trails.

Policy 12.3.5 -Promote and encourage a public transit system that ensures efficient accessibility, mobility, and interconnectivity between travel modes for all residents of Oregon City.

Policy 12.3.6 -Establish a truck route network that ensures efficient access and mobility to commercial and industrial areas while minimizing adverse residential impacts.

Policy 12.3.8 -Ensure that the multi-modal transportation system preserves, protects, and supports the environmental integrity of the Oregon City community.

Policy 12.3.9 -Ensure that the city's transportation system is coordinated with regional transportation facility plans and policies of partnering and affected agencies.

Finding: Complies. The Transportation System Plan provides opportunities to facilitate increased mobility for vehicles, pedestrians and bicyclists by identifying insufficient facilities and associated prioritized projects. Implementation of the projects and the associated amendments to the Oregon City Municipal Code will result in a more complete transportation system with a variety of connected multi-modal travel options and a truck route network which support one another. The plan was created in conjunction with other affected agencies.

Goal 12.4 Light Rail

Promote light rail that serves Oregon City and locate park-and-ride facilities at convenient neighborhood nodes to facilitate access to regional transit.

Policy 12.4.1 -Support light rail development to Oregon City.

Finding: Complies. The proposed plan supports mass transit by providing context sensitive street designs, and a complete transportation facility which will allow safe access for light rail users.

Goal 12.5 Safety

Develop and maintain a transportation system that is safe.

Policy 12.5.1 -Identify improvements that are needed to increase the safety of the transportation system for all users.

Policy 12.5.2 -Identify and implement ways to minimize conflict points between different modes of travel.

Policy 12.5.3 -Improve the safety of vehicular, rail, bicycle, and pedestrian crossings.

Finding: Complies. The top-ranked goal of the TSP update is to “(e)nhance the health and safety of residents.” Existing safety concerns include high collision locations, with multiple sites along OR 99E, around Downtown, and along Beavercreek Road and Molalla Avenue (Figure 7, TSP Volume 2, Section D). Based on RTP requirements to establish a range of performance measures in local TSP, the objective of the TSP update is to reduce fatalities and serious injuries by 50% between 2010 and 2035.

Although there is not a reliable tool for forecasting future collisions, safety is expected to improve given implementation of the recommended investments in the TSP update. These investments include street crossings, walking and biking facilities, and improvements to high collision locations and congested intersections. Even if the target is not achieved, rates of collisions, serious injuries, and fatalities are expected to decrease and implement the TSP safety objective with the implementation of the TSP and associated amendments to the Oregon City Municipal Code.

Goal 12.6 Capacity

Develop and maintain a transportation system that has enough capacity to meet users' needs.

Policy 12.6.1 - Provide a transportation system that serves existing and projected travel demand.

Policy 12.6.2 - Identify transportation system improvements that mitigate existing and projected areas of congestion.

Policy 12.6.3 - Ensure the adequacy of travel mode options and travel routes (parallel systems) in areas of congestion.

Policy 12.6.4 - Identify and prioritize improved connectivity throughout the city street system.

Finding: Complies. Policy and projects in the TSP update are proposed to serve existing and planned uses within the urban growth boundary surrounding Oregon City. The recommended projects are projected to meet performance targets throughout the city, with exceptions. Some intersections on the state highway system cannot be brought into compliance with current ODOT and proposed TSP mobility standards without unreasonably expensive projects for which there is no identified funding. As the City is not required to assure compliance with mobility standards for permitted and conditional uses on state facilities beyond what is identified in the Regional Transportation System Plan, the City proposed to temporarily exempt permitted and conditional uses from complying with the current mobility standards for the interchanges of I-205/99E, I-205/213 and OR 213/Beavercreek Road and all state facilities within or adjacent to the Regional Center. With no reasonable solution resulting in compliance with mobility standards for these locations, the City will continue to work with regional partners to pursue special studies and alternate mobility standards for these locations. Minor improvements are anticipated for a majority of the three intersections until the solutions are adopted, likely one to two years after adoption of the Transportation System Plan.

Goal 12.7 Sustainable Approach

Promote a transportation system that supports sustainable practices.

Policy 12.7.4 - Promote multi-modal transportation links and facilities as a means of limiting traffic congestion.

Finding: Complies. The proposed Transportation System Plan and associated amendments to the Oregon City Municipal Code allow for a complete transportation network for all modes of transportation.

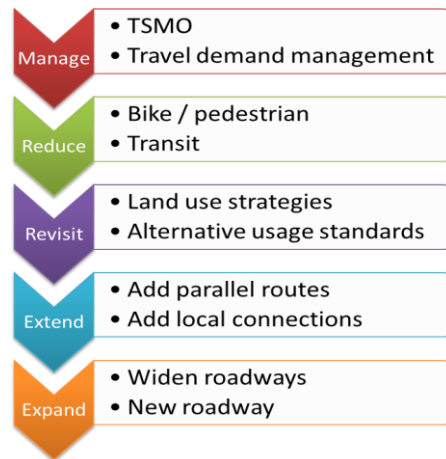
Goal 12.8 Implementation/Funding

Identify and implement needed transportation system improvements using available funding.

Policy 12.8.1 - Maximize the efficiency of the Oregon City transportation system, thus minimizing the required financial investment in transportation improvements, without adversely impacting neighboring jurisdictions and facilities.

Policy 12.8.2 - Provide transportation system improvements that facilitate the timely implementation of the Oregon City Downtown Community Plan and protect regional and local access to the End of the Oregon Trail Interpretive Center.

Finding: Complies. The proposed projects in the TSP maximize the efficiency of the transportation system by focusing improvements throughout the City and solving transportation problems by employing the following strategy to identify improvements throughout the City.



Investing in the transportation system improvements that are recommended in the TSP Financially Constrained and Planned Transportation System Plans (Table 5 in the TSP Volume 1 and Table 2 in TSP Volume 2, Section I) and implementing transportation demand management programs in the employment growth areas in the city are expected to accommodate the forecasted travel demand through 2035 with exception. Some intersections on the state highway system cannot be brought into compliance with current ODOT and proposed TSP mobility standards without unreasonably expensive projects for which there is no identified funding. As the City is not required to assure compliance with mobility standards for permitted and conditional uses on state facilities beyond what is identified in the Regional Transportation System Plan, the City proposed to temporarily exempt permitted and conditional uses from complying with the current mobility standards for the interchanges of I-205/99E, I-205/213 and OR 213/Beavercreek Road and all state facilities within or adjacent to the Regional Center. With no reasonable solution resulting in compliance with mobility standards for these locations, the City will continue to work with regional partners to pursue special studies and alternate mobility standards for these locations. Minor improvements are anticipated for a majority of the three intersections until the solutions are adopted, likely one to two years after adoption of the Transportation System Plan.

CONSISTENCY WITH STATEWIDE PLANNING GOALS

STATEWIDE PLANNING GOAL 1:

To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.

Finding: Complies. This goal is implemented through the applicable Goals and Policies in Section 1 of the Oregon City Comprehensive Plan: Citizen Involvement. An overview of the public involvement process is provided within this report and demonstrated in the Transportation System Plan Public Outreach Plan (Exhibit 1). Staff finds that the TSP update process is consistent with Statewide Planning Goal 1.

STATEWIDE PLANNING GOAL 2:

To establish a land use planning process and policy framework as a basis for all decision and actions related to use of land and to assure an adequate factual base for such decisions and actions.

Finding: Complies. This goal is implemented through the applicable Goals and Policies in Section 2 of the Oregon City Comprehensive Plan: Land Use. Because the TSP is an ancillary document to the City's Comprehensive Plan, the application was processed pursuant to the legislative hearing process outlined in Section 17.50.170 of the Oregon City Municipal Code. The TSP document and its projections, analysis, maps, recommended improvements, and proposed funding plan are based the series of reports that

were prepared as part of developing the TSP update, including the existing conditions report, future conditions report, future needs analysis, and planned and financially constrained systems reports (TSP Volume 2).

In addition to the City's Comprehensive Plan, a review of other existing state, regional, and local plans, policies, standards, and laws that are relevant to local transportation planning was conducted at the beginning of the TSP update process, and is documented in Section A of the TSP Volume 2. The TSP update and associated amendments were developed in coordination with ODOT, Metro, and TriMet and were developed to be consistent with those applicable regulations. The proposed TSP update and associated amendments are consistent with Statewide Planning Goal 2.

STATEWIDE PLANNING GOAL 5:

To protect natural resources and conserve scenic and historic areas and open spaces.

Finding: Complies. This goal is implemented through the applicable Goals and Policies in Section 5 of the Oregon City Comprehensive Plan: Open Spaces, Scenic and Historic Areas, and Natural Resources. The Oregon City Municipal Code contains specific review criteria for uses within overlay districts to assure that designated Goal 5 resources are appropriately considered when development is proposed. In particular, the Natural Resource Overlay District designation: "provides a framework for protection of Metro Titles 3 and 13 lands, and Statewide Planning Goal 5 resources within Oregon City. The Natural Resource Overlay District (NROD) implements the Oregon City Comprehensive Plan Natural Resource Goals and Policies, as well as Federal Clean Water Act requirements for shading of streams and reduction of water temperatures, and the recommendations of the Metro ESEE Analysis. Trails, paths, and roads are permitted either outright or with restrictions in the Natural Resource Overlay District as identified in OCMC 17.49.150.

Within the Historic Overlay District, which includes the Canemah Historic District, McLoughlin Conservation District, designated Landmarks and Historic corridors, proposed public utility projects may be reviewed by the Historic Review Board to determine potential impact historic resources. The Historic Review Board has adopted character guidelines that pertain to improvements in the public right of way, utilities and related equipment to assure compatibility with historic resources. Goal 5 resources outside the city limits within the UGB are reviewed as part of the required Concept Planning for those areas prior to and subsequent with annexation. Concept plans must be implemented through zoning designations and overlay protection zones to assure that Goal 5 resources are protected to the extent required by State law and Metro.

Further, the proposed amendments to the Oregon City Municipal Code allow for a modification to the street design standard to construct context sensitive design. This would allow narrower roads within environmentally sensitive areas and appropriate public improvements in historic areas. Based on the existing review processes defined in the Oregon City Municipal Code, the proposed TSP update is consistent with Statewide Planning Goal 5.

STATEWIDE PLANNING GOAL 6:

To maintain and improve the quality of the air, water and land resources of the state.

Finding: Complies. This goal is implemented through the applicable Goals and Policies in Section 6 of the Oregon City Comprehensive Plan: Quality of Air, Water and Land Resources. By planning system improvements based on projected demand and land use patterns, the plan will ensure that land suited for development will be served efficiently.

The share of improvements recommended in the TSP update which result in more significant levels of pollution has dramatically decreased since the 2001 TSP. As shown in Figure 24 of the TSP (Volume 1), projects related to walking, biking, and taking transit have increased from approximately 51% of the projects in the 2001 TSP to approximately 74% of the projects in the TSP update, represented by over 260 projects. This set of projects combined with projected employment growth within the city over the next 20 years results in an approximately 13% reduction in vehicle miles traveled (VMT) in the evening peak period through 2035, more than the 10% reduction set as a climate change target (TSP Volume 1, Table 25).

The Oregon City Municipal Code amendments are proposed to implement the TSP update and comply with the Regional Transportation Function Plan (RTFP) to include provisions to establish unobstructed paths on sidewalks, require more closely spaced pedestrian and bicycle accessways, support crossings in the vicinity of transit stops, and establish requirements for long-term bicycle parking (TSP Volume 2, Section K). Based on the existing review processes defined in the Oregon City Municipal Code, the proposed TSP update and code amendments are consistent with Statewide Planning Goal 6.

STATEWIDE PLANNING GOAL 7:

To protect people and property from natural hazards.

Finding: Complies. This goal is implemented through the applicable Goals and Policies in Section 7 of the Oregon City Comprehensive Plan: Natural Hazards. This goal primarily addresses how the city should plan development to avoid hazard posed by floods, steep slopes, geologically unstable areas and other natural hazards. The projects recommended in the TSP update were established through a “solutions identification process” with evaluation criteria that accounted for environmental hazards and impacts. Even when transportation projects are permitted outright in underlying zones, the Flood Management Overlay District (OCMC Chapter 17.42), US-Geologic Hazards Overlay District (OCMC Chapter 17.44) and Natural Resource Overlay District (OCMC Chapter 17.49) provide development standards for transportation projects in these overlay districts.

All projects within the TSP, whether they are within the Geologic Hazards Overlay District or not, include detailed surveys conducted to identify hydrologic, topographic or other geological constraints that could hinder the widening and future extensions of the planned streets before construction is initiated. All street extensions included in this Plan are shown with conceptual alignments with a planning level illustration that street connectivity enhancements are needed in these areas. Final street alignments will be identified after these surveys have been completed. Based on development standards and review processes defined in the Oregon City Municipal Code, the TSP update is consistent with Statewide Planning Goal 7.

STATEWIDE PLANNING GOAL 9:

To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens.

Finding: Complies. This goal is implemented through the applicable Goals and Policies in Section 9 of the Oregon City Comprehensive Plan: Economic Development. Policy and projects in the TSP update are proposed to serve existing and planned commercial and employment uses in the interchange study area. Employment trips were a part of future traffic conditions analyzed in the city. Over 23,000 jobs are expected in 2035, which represents almost 60% growth since 2010 (TSP Volume 1, Section 3). There are areas of commercial, industrial, mixed use commercial, and mixed use employment land designated along arterials and collectors in the city. The future demand projections showed congested and over-capacity conditions on segments of OR 99E in Downtown and around the I-205 interchange

and on a segment of Redland Road south of Anchor Way (TSP Volume 1, Figure 5). Investing in the transportation system improvements that are recommended in the TSP update (TSP Volume 1, Table 5 and TSP Volume 2, Section I, Table 2), including transportation demand management programs, is expected to accommodate the forecasted travel demand through 2035. Operations under implementation of the recommended solutions are projected to meet performance targets throughout the city, with the exception of the interchanges of I-205/99E, I-205/OR 213 and 213/Beavercreek Road. The recommended solutions move these intersections toward compliance with targets (TSP Volume 1, Section 8). Based on the existing review processes defined in the Oregon City Municipal Code, the proposed TSP update is consistent with Statewide Planning Goal 9.

STATEWIDE PLANNING GOAL 10:

To provide for the housing needs of citizens of the state.

Finding: Complies. This goal is implemented through the applicable Goals and Policies in Section 10 of the Oregon City Comprehensive Plan: Housing. Adoption of the TSP update will address improvements needed to ensure the orderly extension of transportation facilities to accommodate the projected growth envisioned in the City's Comprehensive Plan, which includes a variety of housing types. Policy and projects in the TSP update are proposed to serve existing and planned residential and mixed-use areas in the city. Residential trips were a part of future traffic conditions analyzed in the city. Almost 21,000 households are expected in the city in 2035, which represents over 60% growth since 2010 (TSP Volume 1, Section 3).

STATEWIDE PLANNING GOAL 11:

To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

Finding: Complies. This goal is implemented through the applicable Goals and Policies in Section 11 of the Oregon City Comprehensive Plan: Public Facilities. As stated in Section 11, the transportation infrastructure in Oregon City is governed by the Oregon City Transportation System Plan (Oregon City TSP), adopted in 2001 and proposed for update in 2013. The relevant Public Facilities goals and policies and findings are discussed in greater detail above.

STATEWIDE PLANNING GOAL 12:

To provide and encourage a safe, convenient and economic transportation system.

Finding: Complies. This goal is implemented at the local level through the applicable Goals and Policies in the updated TSP, Section 2 (The Vision). This goal is also implemented at the state level through the Transportation Planning Rule (TPR), OAR 660-012, which is addressed later in this report and in Exhibit 2. The TSP goals were developed and ranked by TSP update project stakeholders, and were the basis for evaluation criteria used in selecting and assessing the projected performance of the projects and solutions recommended in the TSP update. The goals, in order of importance to the community and project stakeholders, are:

- Enhance the health and safety of residents
- Emphasize effective and efficient management of the transportation system
- Foster a sustainable transportation system
- Provide an equitable, balanced and connected multi-modal transportation system
- Identify solutions and funding to meet system needs
- Increase the convenience and availability of pedestrian, bicycle, and transit modes
- Ensure the transportation system supports a prosperous and competitive economy
- Comply with state and regional transportation plans.

Section I of Volume 2 (Planned and Financially Constrained Transportation Systems) of the updated TSP explains how 360 solutions for the Oregon City transportation system were reduced to a Financially Constrained Transportation System Plan (likely to be funded list) and a Planned Transportation System Plan (unlikely to be funded list). The process relied on the goals, evaluation criteria, and five-tiered solutions hierarchy. The proposed TSP update is consistent with Statewide Planning Goal 12.

STATEWIDE PLANNING GOAL 13: To conserve energy.

Land and uses developed on the land shall be managed and controlled so as to maximize the conservation of all forms of energy, based upon sound economic principles.

Finding: Complies. This goal is implemented through the applicable Goals and Policies in Section 13 of the Oregon City Comprehensive Plan: Energy Conservation.

The multimodal transportation system and improvements proposed in the updated TSP and associated code amendments will support efficient use of land within the city limits and UGB based on existing adopted Comprehensive Plan and zoning designations. With this plan, the City can provide timely, orderly and efficient transportation improvements.

The City promotes the efficient use of land and conservation of energy through its Comprehensive Plan and zoning and development regulations within the Oregon City Municipal Code. Higher density and mixed use zoning, land division, and site plan design standards promote more compact development patterns, and promote bicycling and walking instead of relying on the automobile for routine errands. New annexations are required to show that public utilities can be efficiently extended to new urban areas. Metro-approved Concept Plans are required prior to annexation to the city to assure that urban services and amenities will be developed in logical places as the community develops. The proposed TSP and associated amendments are consistent with Statewide Planning Goal 13.

Oregon Transportation Plan (2006)

The Oregon Transportation Plan (OTP) is the state's long-range multimodal transportation plan. The OTP is the overarching policy document among a series of plans that together form the state transportation system plan (TSP). A TSP must be consistent with applicable OTP goals and policies. Findings of compatibility will be part of the basis for TSP approval. The most pertinent OTP goals and policies for city transportation system planning are provided below.

POLICY 1.2 – Equity, Efficiency and Travel Choices

It is the policy of the State of Oregon to promote a transportation system with multiple travel choices that are easy to use, reliable, cost-effective and accessible to all potential users, including the transportation disadvantaged.

Finding: Complies. The proposed TSP establishes design criteria for streets based on their functional classification and the designation within the Comprehensive Plan, resulting in a context sensitive development. The context zone, walking zone, and biking/on-street parking zone are important to establishing a reliable, accessible, and inviting environment for those walking, biking, and taking transit. The design criteria establish a minimum of five to ten and a half sidewalk width. Bike lanes that are six-foot-wide are required for most of the street design types. Maximum block sizes of 530 feet are provided and pedestrian access every 330 feet is required unless a modification is approved through a Type II process.

The recommended solutions in the plan related to walking, biking, shared-use paths, family friendly facilities, transit, and crossings account for about 74% of the recommended solutions (Figure 10). In the financially constrained plan, walking improvements consist largely of filling in sidewalk gaps as well as widening existing sidewalks and making ADA accessibility improvements. Biking improvements consist largely of providing bike lanes. The addition of shared-use paths add both walking and biking facilities. Transit improvements are focused on signal priority and enhancing transit stop amenities (See Table 5 in Section 7 (The Plan)).

Recommended code amendments reinforce many of these elements of the TSP in establishing clear zones for unobstructed travel on sidewalks, requiring pedestrian accessways every 330 feet on long blocks, strengthening access to and amenities at transit facilities, and expanding bicycle parking requirements to address long-term parking (TSP Volume 2, Section K). The proposed TSP and associated amendments are consistent with Policy 1.2.

POLICY 2.1 - Capacity and Operational Efficiency

It is the policy of the State of Oregon to manage the transportation system to improve its capacity and operational efficiency for the long term benefit of people and goods movement.

Finding: Complies. The TSP update will result in increased mobility for vehicles, bicyclists and pedestrians. The recommended projects are projected to meet performance targets throughout the city, with exceptions. Some intersections on the state highway system cannot be brought into compliance with current ODOT and proposed TSP mobility standards without unreasonably expensive projects for which there is no identified funding. As the City is not required to assure compliance with mobility standards for permitted and conditional uses on state facilities beyond what is identified in the Regional Transportation System Plan, the City proposed to temporarily exempt permitted and conditional uses from complying with the current mobility standards for the interchanges of I-205/99E, I-205/213 and OR 213/Beavercreek Road and all state facilities within or adjacent to the Regional Center. With no reasonable solution resulting in compliance with mobility standards for these locations, the City will continue to work with regional partners to pursue special studies and alternate mobility standards for these locations. Minor improvements are anticipated for a majority of the three intersections until the solutions are adopted, likely one to two years after adoption of the Transportation System Plan.

POLICY 2.2 – Management of Assets

It is the policy of the State of Oregon to manage transportation assets to extend their life and reduce maintenance costs.

Finding: Complies. The Financially Constrained (likely to be funded list) and Planned Transportation System (unlikely to be funded list) were developed based on the five-tiered solutions hierarchy that starts with system management measures and ends with those to extend and build new roadways. As a result, the number of cost-effective management recommendations and those related to walking, biking, shared-use paths, family friendly facilities, transit, and crossings account for the majority of projects and solutions in the updated. TSP (Table 5 in the TSP Volume 1 and Table 2 in the TSP Volume 2, Section I).

The TSP update is designed to meet performance standards for existing and future development within the UGB. Investing in the transportation system improvements that are recommended in the TSP Financially Constrained and Planned Transportation System Plans (Table 5 in the TSP Volume 1 and Table 2 in TSP Volume 2, Section I) and implementing transportation demand management programs in the employment growth areas in the city are expected to accommodate the forecasted travel demand

through 2035, with exceptions. Some intersections on the state highway system cannot be brought into compliance with current ODOT and proposed TSP mobility standards without unreasonably expensive projects for which there is no identified funding. As the City is not required to assure compliance with mobility standards for permitted and conditional uses on state facilities beyond what is identified in the Regional Transportation System Plan, the City proposed to temporarily exempt permitted and conditional uses from complying with the current mobility standards for the interchanges of I-205/99E, I-205/213 and OR 213/Beavercreek Road and all state facilities within or adjacent to the Regional Center. With no reasonable solution resulting in compliance with mobility standards for these locations, the City will continue to work with regional partners to pursue special studies and alternate mobility standards for these locations. Minor improvements are anticipated for a majority of the three intersections until the solutions are adopted, likely one to two years after adoption of the Transportation System Plan.

POLICY 3.1 – An Integrated and Efficient Freight System

It is the policy of the State of Oregon to promote an integrated, efficient and reliable freight system involving air, barges, pipelines, rail, ships and trucks to provide Oregon a competitive advantage by moving goods faster and more reliably to regional, national and international markets.

Finding: Complies. The freight system in Oregon City is focused on truck freight. The TSP objective envisions decreasing truck delay by approximately 10% through 2035, to just over three minutes per truck trip during the evening peak period, based on freight mobility targets developed from the RTP.

POLICY 3.2 – Moving People to Support Economic Vitality

It is the policy of the State of Oregon to develop an integrated system of transportation facilities, services and information so that intrastate, interstate and international travelers can travel easily for business and recreation.

Finding: Complies. The freight system in Oregon City is focused on truck freight. The TSP objective envisions decreasing truck delay by approximately 10% through 2035, to just over three minutes per truck trip during the evening peak period, based on freight mobility targets developed from the RTP. High general traffic demand on regional transportation routes including I-205, OR 213, OR 99E, and OR 43 pose a challenge to meeting this performance measure. Truck delay in the city during the evening peak period (after assuming the planned system investments) is expected to increase slightly through 2035, from about three and a half minutes to four minutes per person. However, the City is moving in the direction of this performance measure by decreasing truck delay 15% from what would be expected without the implementation of recommended planned transportation system investments. (See Section 8 (Outcomes) of TSP Volume 1.) The proposed TSP is consistent with Policies 3.1 and 3.2.

POLICY 4.1 - Environmentally Responsible Transportation System

It is the policy of the State of Oregon to provide a transportation system that is environmentally responsible and encourages conservation and protection of natural resources.

Finding: Complies. Implementation of the Financially Constrained (likely to be funded) and Planned Transportation System (unlikely to be funded) recommendations serves an area within the city's UGB that is planned for efficient urban development, as guided by state planning goals and regulations. Development of this land was assumed for projecting future transportation conditions and the transportation needs and solutions that were then determined based on those conditions.

The Oregon City Municipal Code contains review criteria for uses within the natural resource overlay district to assure that resources are appropriately considered when development is proposed. The Natural Resource Overlay District (NROD) "implements the Oregon City Comprehensive Plan Natural

Resource Goals and Policies, as well as Federal Clean Water Act requirements for shading of streams and reduction of water temperatures, and the recommendations of the Metro ESEE Analysis.” Trails, paths, and roads are permitted either outright or with restrictions in the Natural Resource Overlay District. The restrictions are established in OCMC 17.49.150 (Standards for vehicular or pedestrian paths and roads). Even when transportation projects are permitted outright in underlying zones, the Flood Management Overlay District (OCMC Chapter 17.42) and US-Geologic Hazards Overlay District (OCMC Chapter 17.44) provide development standards for transportation projects in these overlay districts.

The share of improvements recommended in the TSP update that are less polluting has dramatically increased since the 2001 TSP. As shown in Figure 10 (TSP Volume 1), projects related to walking, biking, and taking transit have increased from approximately 51% of the projects in the 2001 TSP to approximately 74% of the projects in the TSP update, representing over 260 projects in the Planned Transportation System.

Code amendments proposed to implement the TSP update and comply with the Regional Transportation Function Plan (RTFP) include provisions to establish unobstructed paths on sidewalks, require more closely spaced pedestrian and bicycle accessways, support crossings in the vicinity of transit stops, and establish requirements for long-term bicycle parking (TSP Volume 2, Section K). These amendments reinforce the pedestrian, bicycle, and transit improvements that are recommended in the TSP update. The proposed TSP and associated amendments are consistent with Policy 4.1.

POLICY 5.1 – Safety

It is the policy of the State of Oregon to continually improve the safety and security of all modes and transportation facilities for system users including operators, passengers, pedestrians, recipients of goods and services, and property owners.

Finding: Complies. The top-ranked goal of the TSP update is to “(e)nhance the health and safety of residents.” Existing safety concerns include high collision locations, with multiple sites along OR 99E, around Downtown, and along Beavercreek Road and Molalla Avenue (Figure 7, TSP Volume 2, Section D). Based on RTP requirements to establish a range of performance measures in local TSP, the objective of the TSP update is to reduce fatalities and serious injuries by 50% between 2010 and 2035. Although there is not a reliable tool for forecasting future collisions, safety is expected to improve given implementation of the recommended investments in the TSP update. These investments include street crossings, walking and biking facilities, and improvements to high collision locations and congested intersections. Even if the target is not achieved, rates of collisions, serious injuries, and fatalities are expected to decrease and move in the direction of the TSP safety objective with the implementation of these recommended TSP projects. The proposed TSP is consistent with Policy 5.1.

POLICY 7.1 – A Coordinated Transportation System

It is the policy of the State of Oregon to work collaboratively with other jurisdictions and agencies with the objective of removing barriers so the transportation system can function as one system.

Finding: Complies. Staff from the Oregon Department of Transportation (ODOT), Clackamas County, TriMet, and ODOT were involved in the Technical Advisory Team (TAT) and throughout the creation of the plan. Coordination provisions with those jurisdictions – particularly the State as required by OAR 660-012-0045 –are established. The proposed TSP is consistent with Policy 7.1.

POLICY 7.3 – Public Involvement and Consultation

It is the policy of the State of Oregon to involve Oregonians to the fullest practical extent in transportation planning and implementation in order to deliver a transportation system that meets the diverse needs of the state.

Finding: Complies. Development of the TSP relied on the participation of the Technical Advisory Team (TAT) and Stakeholder Advisory Team (SAT) and the activities of these teams as well as other public involvement efforts are described in the Transportation System Plan Public Outreach Plan (Exhibit 1).

POLICY 7.4 – Environmental Justice

It is the policy of the State of Oregon to provide all Oregonians, regardless of race, culture or income, equal access to transportation decision-making so all Oregonians may fairly share in benefits and burdens and enjoy the same degree of protection from disproportionate adverse impacts.

Finding: Complies. Development of the TSP update relied on the participation of the Technical Advisory Team (TAT) and Stakeholder Advisory Team (SAT) and other public involvement efforts are described in the Transportation System Plan Public Outreach Plan (Exhibit 1). Section D in TSP Volume 2 discusses environmental justice. The Environmental Protection Agency states that: “Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.” The environmental justice effort within the TSP was to identify concentrations of underserved and vulnerable populations so that transportation services can be improved in this areas while avoiding or at least distributing impacts of planned projects more equitably across the city.

Goal 4 of the TSP commits the City to: “(p)rovide an equitable, balanced and connected multimodal transportation system” (Section 2, TSP Volume 1). Objectives and evaluation criteria for TSP projects under the goal include ensuring that the transportation system provides equitable access to underserved and vulnerable populations and reduces total housing and transportation costs for residents.

As found through the Census, Figure A5 in Section D identifies concentrations of low-income residents in the Park Place neighborhood, minority populations around Molalla Avenue between Beavercreek Road and Division Street, and the elderly around the 15th Street/Division Street intersection. Significant populations of non-English speakers and people with disabilities were not found in the city. Proposed Financially Constrained and Planned Transportation System improvements (TSP Volume 1, Table 5 and TSP Volume 2, Section I, Table 2) identify walking, biking, shared-use path, family friendly route, transit, and crossing improvements in these areas of underserved and vulnerable populations as well as throughout the city (Figures 17-19, TSP Volume 1). Roadway extension and expansion projects, and their potential associated impacts, are also distributed throughout the city (Figures 14-16, TSP Volume 1). The proposed TSP is consistent with Policies 7.3 and 7.4.

Oregon Highway Plan

The 1999 Oregon Highway Plan (OHP) establishes policies and investment strategies for Oregon’s state highway system over a 20-year period and refines the goals and policies found in the OTP. Policies in the OHP emphasize the efficient management of the highway system to increase safety and to extend highway capacity, partnerships with other agencies and local governments, and the use of new techniques to improve road safety and capacity. These policies also link land use and transportation, set standards for highway performance and access management, and emphasize the relationship between state highways and local road, bicycle, pedestrian, transit, rail, and air systems. The policies applicable to the Oregon City TSP are addressed below.

Policy 1A (*Highway Classification*) defines the function of state highways to serve different types of traffic that should be incorporated into and specified through IAMPs.

Finding: Complies. The TSP included a review of state highways in coordination with the Oregon Department of Transportation. There are four sets of State roadways in Oregon City, including I-205 (an Interstate highway) and OR 99E, OR 213, and OR 43 (all District highways).

Policy 1C (*State Highway Freight System*) states the need to balance the movement of goods and services with other uses.

Finding: Complies. As identified in Section A (Plans and Policies Framework) of TSP Volume 2, there are four sets of State roadways in Oregon City, including I-205 (an Interstate highway) and OR 99E, OR 213, and OR 43 (all District highways). The TSP defers to ODOT's access management review and regulations of the State. In terms of safety, as described earlier in the OTP findings, safety concerns exist at sites along state facilities OR 99E and OR 213 (TSP Volume 2, Section D, Figure 7). Although there is not a reliable tool for forecasting future collisions, safety is expected to improve given implementation of the recommended investments in street crossings, walking and biking facilities, and improvements to high collision locations and congested intersections in the TSP update.

The proposed improvements in the Financially Constrained and Planned Transportation System plans (TSP Volume 1, Table 5 and TSP Volume 2, Section I, Table 2) serve safety and mobility on state roadways in the city. The TSP update is designed to meet performance standards for existing and future development. Investing in the transportation system improvements that are recommended in the TSP Financially Constrained and Planned Transportation System Plans (Table 5 in the TSP Volume 1 and Table 2 in TSP Volume 2, Section I) and implementing transportation demand management programs in the employment growth areas in the city are expected to accommodate the forecasted travel demand through 2035, with exceptions. Some intersections on the state highway system cannot be brought into compliance with current ODOT and proposed TSP mobility standards without unreasonably expensive projects for which there is no identified funding. As the City is not required to assure compliance with mobility standards for permitted and conditional uses on state facilities beyond what is identified in the Regional Transportation System Plan, the City proposed to temporarily exempt permitted and conditional uses from complying with the current mobility standards for the interchanges of I-205/99E, I-205/213 and OR 213/Beavercreek Road and all state facilities within or adjacent to the Regional Center. With no reasonable solution resulting in compliance with mobility standards for these locations, the City will continue to work with regional partners to pursue special studies and alternate mobility standards for these locations. Minor improvements are anticipated for a majority of the three intersections until the solutions are adopted, likely one to two years after adoption of the Transportation System Plan.

Also as described earlier in OTP findings, high general traffic demand on regional transportation and freight routes including I-205, OR 213, OR 99E, and OR 43 pose a challenge to meeting performance measures related to freight. Truck delay in the city during the evening peak period (after assuming the planned system investments) is expected to increase slightly through 2035. However, the City is decreasing truck delay 15% from what would be expected without the implementation of recommended planned transportation system investments. (See TSP Volume 1, Section 8) Updated and more liberal mobility standards – ranging from 0.99 to 1.10 volume-to-capacity for peak 1st hour and 2nd hour – are proposed for City roadways in Section 4 (Standards) in order to balance motor vehicle mobility with improved conditions for walking and biking. The proposed TSP is consistent with Policies 1A and 1C.

Policy 1B (*Land Use and Transportation*) recognizes the need for coordination between state and local jurisdictions.

Finding: Complies. Coordination between Oregon City, Clackamas County and ODOT has occurred in developing the TSP for project administration and through the Technical Advisory Team (TAT) process.

Policy 1F (*Highway Mobility Standards*) sets mobility standards for ensuring a reliable and acceptable level of mobility on the highway system by identifying necessary improvements that would allow the interchange to function in a manner consistent with OHP mobility standards.

Finding: Complies. The TSP update is designed to meet performance standards for existing and future development within the UGB. Oregon Highway Plan, Policy 1F3 sets forth the applicable mobility targets for the state roads. As part of the analysis conducted for the TSP, twenty key intersections were analyzed to determine their performance in 2035 based on planned development. The predicted performance at these 20 key intersections was compared with the mobility standards proposed in the TSP. If the level of congestion exceeded allowable standards, projects were identified that would improve intersection performance to meet the applicable mobility standards and were included within the TSP. Example projects that increase capacity and allow an intersection to meet the mobility standards include the construction of an additional turn lane or the installation of a traffic signal. Once the projects are constructed the intersection would meet the mobility standard over the planning horizon.

For most of the key intersections, affordable and implementable improvements were identified which would allow the intersection to meet mobility standards during the 20-year planning horizon. However, at three intersections, the improvements necessary to satisfy the mobility standard were determined to be so costly that they could not be reasonably constructed. The three locations, all on the state highway system, are:

I-205/OR 213 Interchange- According to ODOT the redesigned interchange would include construction of additional lanes and bridges, costing \$100 million to \$200 million.

OR 99E/I-205 Interchange- The City and ODOT agreed that the redesigned interchange would include increasing the capacity of the freeway off-ramps with additional lanes or extending existing lanes, costing \$10 million to \$30 million or more. Speculation today suggests that the “or more” solutions could include additional travel lanes on I-205 between the Gladstone interchange and the West Linn/Lake Oswego interchange.

Beavercreek Road/OR 213 - The 2001 TSP identified a grade-separated interchange costing \$20 million. Adjusting for inflation, that same project today would be \$26 million.

Using the lowest range of the estimated costs, the total of all the intersection improvements is \$136 million (\$100M + \$10M + \$26M = \$136 M). Again, these locations are all on the state highway system.

Even in combination, ODOT, Clackamas County, and Oregon City do not have projected funding to implement the \$136 million needed to reconstruct the three facilities to comply with the mobility standards. Due to the large cost associated with the improvements, the projects do not appear on the Oregon Highway Plan, the Regional Transportation System Plan or the proposed TSP project list because there is no reasonable likelihood that the projects will be funded. ODOT has made it clear to staff that they would oppose constructing the improvements associated with the intersections and would not contribute any funds for this purpose. ODOT’s current revenue projections will be sufficient to cover

only the highest priority projects within the region. There is no state or regional funding identified for the three Oregon City locations.

Because funding is not likely to be available to implement these very expensive projects, ODOT recommends that the City undertake additional studies to develop other ways of meeting the City's transportation needs that do not involve major construction projects at these three locations. In addition, these studies may support adoption of alternate mobility standards that allow for a greater level of congestion than is currently allowed by ODOT or is proposed in the TSP. The transportation studies would likely look more broadly at the intersections to identify less costly improvements that provide some increased capacity as well as opportunities to invest in the local network to provide alternative routes and improvements for non-automobile travel in an effort to reduce peak hour trips at the aforementioned intersections. The scope of these additional studies has not been determined and may result in the identification of additional projects that could be added to those already included TSP. As most other jurisdictions in the region are also discovering that insufficient funds will be available to meet mobility standards, additional studies and the adoption of alternate mobility standards that allow for greater levels of congestion will likely be pursued by many jurisdictions. Undertaking such studies and adopting alternate mobility standards, an action that will also need to be taken by the Oregon Transportation Commission if it involves state highways, is likely to take 12-24 months to complete.

As specified in the Oregon City Municipal Code, most developers are required to conduct a traffic study identifying the traffic impacts of development on proximate intersections throughout the City that are most likely to be more significantly impacted. The Municipal Code requires that if development puts more than 20 new automobile trips through an intersection during the AM or PM peak hour, an analysis is required to demonstrate compliance with mobility standards.

As explained above, some intersections on the state highway system cannot be brought into compliance with current ODOT and proposed TSP mobility standards without unreasonably expensive projects for which there is no identified funding. As the City is not required to assure compliance with mobility standards for permitted and conditional uses on state facilities beyond what is identified in the Regional Transportation System Plan, the City is proposing to temporarily exempt permitted and conditional uses from complying with the current mobility standards for the three aforementioned locations and all state facilities within or adjacent to the Regional Center. Attached is a table illustrating the standards applicable to the various intersections. This temporary exemption would be in effect while the City undertakes more detailed analysis and pursues adoption of an alternate mobility standard over the next 12-24 months.

Providing a temporary exemption for permitted and conditional uses with regard to their impact on state highway facilities would align City code requirements with ODOT requirements and other local governments which do not require compliance for any ODOT facility. In addition, the exemption satisfies the City's obligation to implement the state and regional transportation plans as required by state law.

Improvements identified in the TSP would be constructed but would not necessarily result in satisfaction of the mobility standards at the locations discussed above. If there are no improvements identified in the TSP associated with an intersection, no improvements would be made at that intersection. Since the aforementioned expensive improvements are not included in the TSP, congestion would be allowed to occur at these locations. Since the expensive improvements at these three key locations are not

included in the TSP project list, the current SDC program does not include the collection of any funds to pay for any improvements at these locations.

Subsection Policy 1F3 allows the development of alternative mobility standards “where it is infeasible or impractical to meet the mobility targets...in Table 7....ODOT and local jurisdictions may explore different target levels, methodologies and measures for assessing system performance...” Policy 1F further allows “If alternative targets are needed but cannot be established through the system planning process prior to adoption of a new or updated transportation system plan, they should be identified as necessary and committed to as a future refinement plan work items with an associated timeframe for completion and adoption”. The mobility targets of OHP Table 7 remain in effect for the state facilities until alternative measures are adopted both locally and by the Oregon Transportation Commission.

Policy 1G (*Major Improvements*) *requires maintaining performance and improving safety by improving efficiency and management before adding capacity. ODOT works with regional and local governments to address highway performance and safety.*

Finding: Complies. Policy 1G is aligned with the five-tiered solutions structure established by the RTP/RTFP and followed by this TSP process. Solutions in the Financially Constrained and Planned Transportation Systems focused on management and multimodal measures before considering roadway extension and expansion projects. As a result, approximately 74% of the projects and programs recommended in the TSP are related to walking, biking, transit, and crossings. Of the 26% of projects that are roadway-related, 19 projects address management and intersection improvements, 17 projects are roadway extensions, and four projects are roadway expansions (Table 5, TSP Volume 1). The proposed TSP is consistent with Policy 1G.

Policy 2B (*Off-System Improvements*) *helps local jurisdictions adopt land use and access management policies.*

Finding: Complies. Improvements recommended on the local system in the Financially Constrained Transportation (likely to be funded) System include signalization, signal optimization, installation of turn lanes and roundabouts, sidewalk construction, bike lane striping, extension of roadways, reconstruction of roadways to City standards, installation of crossings and curb ramps, and citywide programmatic measures such as wayfinding tools, transit signal priority and transit stop improvements, expanded bicycle parking design guidance and requirements, and Safe Routes to School (Table 5 and Figures 14-19 in TSP Volume 1). These local system improvements will help to reduce traffic and improve conditions on State roadways in the city. The proposed TSP is consistent with Policy 2B.

Policy 2F (*Traffic Safety*) *improves the safety of the highway system.*

Finding: Complies. As reported in earlier OHP and OTP findings, there are a number of high collision sites and safety concerns along state facilities OR 99E and OR 213 in the city (Figure 7, TSP Volume 2, Section D). Although there is not a reliable tool for forecasting future collisions, safety is expected to improve given implementation of the recommended investments in street crossings, walking and biking facilities, and improvements to high collision locations and congested intersections in the TSP update. The proposed TSP is consistent with Policy 2F.

Policy 3A (*Classification and Spacing Standards*) *sets access spacing standards for driveways and approaches to the state highway system.*

Finding: Complies. The TSP update proposes access spacing standards in OCMC 12.04 for streets in Oregon City. The standards are differentiated by functional classification and surrounding Comprehensive Plan designations. New and redevelopment construction must comply with these

standards. Existing access points that do not comply with these standards may be required to consolidate access points or have access points restricted or closed in the future pursuant to the TSP. The proposed TSP and associated amendments are consistent with Policy 3A.

Policy 4B (Alternative Passenger Modes) *It is the policy of the State of Oregon to advance and support alternative passenger transportation systems where travel demand, land use, and other factors indicate the potential for successful and effective development of alternative passenger modes.*

Finding: Complies. As cited in the OTP findings, the recommended solutions related to walking, biking, shared-use paths, family friendly facilities, transit, and crossings account for about 74% of the recommended solutions, as shown in Section 5 (Investments) of the TSP. The projects are included in both the Financially Constrained Transportation (likely to be funded) System and Planned Transportation (unlikely to be funded) System plans in the 2013 updated TSP. The financially constrained plan (Table 5, Section 6, Volume 1) features pedestrian projects that fill sidewalk gaps throughout the city, including in the Downtown and Regional Center. Biking projects focus on wayfinding signage, shared lane marking, and bike lanes, and transit projects on signal prioritization and bus stop amenity improvements. All of the pedestrian, biking, and transit solutions in the financially constrained plan are reinforced and expanded upon by the family friendly route, shared-use path, and crossing solutions proposed in the plan as well. The proposed TSP is consistent with Policy 4B.

Policy and projects in the TSP update are proposed to serve existing and planned uses within the urban growth boundary surrounding Oregon City. The recommended projects are projected to meet performance targets throughout the city, with exceptions. Some intersections on the state highway system cannot be brought into compliance with current ODOT and proposed TSP mobility standards without unreasonably expensive projects for which there is no identified funding. As the City is not required to assure compliance with mobility standards for permitted and conditional uses on state facilities beyond what is identified in the Regional Transportation System Plan, the City proposed to temporarily exempt permitted and conditional uses from complying with the current mobility standards for the interchanges of I-205/99E, I-205/213 and OR 213/Beavercreek Road and all state facilities within or adjacent to the Regional Center. With no reasonable solution resulting in compliance with mobility standards for these locations, the City will continue to work with regional partners to pursue special studies and alternate mobility standards for these locations. Minor improvements are anticipated for a majority of the three intersections until the solutions are adopted, likely one to two years after adoption of the Transportation System Plan.

OAR 660 Division 12 Transportation Planning Rule (TPR)

The purpose of the TPR is “to implement Statewide Planning Goal 12 (Transportation) and promote the development of safe, convenient and economic transportation systems that are designed to reduce reliance on the automobile so that the air pollution, traffic and other livability problems faced by urban areas in other parts of the country might be avoided.” A major purpose of the Transportation Planning Rule (TPR) is to promote more careful coordination of land use and transportation planning, to ensure that planned land uses are supported by and consistent with planned transportation facilities and improvements.

Finding: Complies. Findings demonstrating compliance with the TPR are located Exhibit 2.

OAR 734, Division 51. Highway Approaches, Access Control, Spacing Standards and Medians

OAR 734-051 governs the permitting, management, and standards of approaches to state highways to ensure safe and efficient operation of the state highways. OAR 734-051 policies address the following:

- *How to bring existing and future approaches into compliance with access spacing standards, and ensure the safe and efficient operation of the highway;*
- *The purpose and components of an access management plan; and*
- *Requirements regarding mitigation, modification and closure of existing approaches as part of project development.*

Finding: Complies.

The TSP update proposes access spacing standards for streets in Oregon City. The standards are differentiated by functional classification and surrounding Comprehensive Plan designations. New and redevelopment construction must comply with these standards. Existing access points that do not comply with these standards may be required to consolidate access points or have access points restricted or closed in the future pursuant to the TSP.

Regional Transportation Plan

The Regional Transportation Functional Plan (RTFP) directs how Oregon City should implement the RTP through the TSP and other land use regulations. The RTFP codifies existing and new requirements which local plans must comply with to be consistent with the RTP. If a TSP is consistent with the RTFP, Metro will find it to be consistent with the RTP.

Finding: Complies. The Transportation System Plan has integrated all regionally designated roads into the TSP. For example, Holly Lane which is designated as an arterial in the Regional Transportation Plan is also designated as an arterial in the Oregon City TSP and projects are identified to upgrade Holly lane to an urban arterial standard as required by the RTP. It should be noted that the projects along Holly are either unfunded or dependent upon annexations and development along the street. Additional findings demonstrating compliance with the RTFP and RTP are located Exhibit 2.

CONCLUSION

For the reasons set forth above, the City Commission approves Planning files L 13-01 and L 13-02 for the 2013 Oregon City Transportation System Plan including the adoption of the Regional Center boundary, as an ancillary document to the Oregon City Comprehensive Plan and amends the Oregon City Municipal Code to implement this plan.

EXHIBITS

- 1) Transportation System Plan Public Outreach Plan
- 2) Regional Transportation Functional Plan (RTFP) and Transportation Planning Rule (TPR) Compliance
- 3) Map of Regional Center



Oregon City Transportation System Plan Update Public Outreach

City of Oregon City
Public Works
625 Center Street
Oregon City, Oregon 97045

Outreach of the Transportation System Plan (TSP) Update Project

The plan extends to the submittal of a Legislative Planning application

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Introduction

Oregon City has been hard at work improving streets, sidewalks and trails. Now it is time to reevaluate our transportation system to identify and prioritize future projects. The Transportation System Plan (TSP) provides a long term guide to City transportation investments and incorporates the vision of the community into an equitable and efficient transportation system.

The City's current plan was adopted in 2001 and will be updated to reflect new state and regional TSP requirements, completion of transportation projects, added Urban Growth Boundary areas, Urban Reserves, population growth, the adoption of the 2004 Oregon City Comprehensive Plan, and policy direction provided by the Metro 2035 Regional Transportation Plan (RTP).

Citizen involvement is crucial to the TSP Update. The opportunity for the public to voice opportunities to strengthen our transportation system results in a successful project. This document highlights the major public involvement strategies to be employed in the Transportation System Plan Update.

A. How has the Public been involved in the TSP Update?

1. Advisory Committees

Stakeholder Advisory Team

The Stakeholder Advisory Team (SAT) serves as the voice of the community and the caretaker of the goals and objectives of the Updated TSP. The SAT assisted with the development of goals and objectives of the TSP and the creation of evaluation criteria to evaluate future projects. The SAT provided direction to staff and reviewed all documents associated with the TSP over email and at meetings. Invitations to join the committee were sent to the Transportation Advisory Committee, Parks and Recreation Advisory Committee, Historic Review Board, Natural Resource Committee, Planning Commission, Clackamas Community College, Main Street Oregon City, Chamber of Commerce, private development interests, Oregon City School District, Citizen Involvement Council and Clackamas County Planning Organizations, freight organizations, and local businesses. Invitations were also posted on the project website for the public. All SAT meetings were advertised and open to the public.

SAT Meeting #1: March 6, 2012

SAT Meeting #2: June 14, 2012

SAT Meeting #3: August 30, 2012

SAT Meeting #4: September 20, 2012

Technical Advisory Team (TAT)

The Technical Advisory Team (TAT) provided technical guidance and coordination throughout the Project. The TAT addressed and resolved technical and jurisdictional issues in order to produce a timely and complete Updated TSP. The TAT provided direction to staff and reviewed all documents associated with the TSP over email and at meetings. Invitations to the TAT were extended to Clackamas County Development and Transportation, Metro, ODOT, City of Gladstone, Oregon City Planning, Oregon City Development, Oregon City Public Works, Oregon City Community Services, Department of Land Conservation and Development (DLCD), Clackamas County Fire District #1, TriMet, and freight organizations. All TAT meetings were advertised and open to the public.

TAT Meeting #1: April 5, 2012
TAT Meeting #2: June 14, 2012
TAT Meeting #3: September 20, 2012

2. Committee Updates

Overview:

To ensure that the City Commission, Planning Commission, Historic Review Board and Natural Resource Committee members are fully informed about the TSP process, multiple presentations were made at regularly scheduled public hearings for these bodies.

Target Audience:

City Commission, Planning Commission, Historic Review Board and Natural Resource Committee

Implementation/Schedule:

Presentations and project updates were provided throughout the duration of the project.

3. Community Meetings – Open Houses

Overview:

To ensure that the public is provided multiple opportunities to learn about the project and interact with the project team, four Community Meetings were/are to be held. Email notices were sent to all city groups, SAT, TAT, CIC, Neighborhood Associations, churches and media groups. In addition, notices were posted on the City website, project website, Twitter, Facebook and signs were posted at all city facilities, online blogs, and at coffee shops, grocery stores, and other businesses around town.

Target Audience:

All stakeholders including residents, employees, property and business owners in Oregon City and adjacent communities.

Implementation/Schedule:

Community Meeting #1 - February 27, 2012

Community Meeting #2 - June 18, 2012

Community Meeting #3 - October 2, 2012

Community Meeting #4 – March 7, 2013

4. Outreach via other Organizations

Overview:

Presence at community events and collaboration with other organizations provides project exposure and directs a wide range of citizens to the project website.

Target Audience:

The general public, community groups

Implementation/Schedule:

A short presentation or a poster with a comment box was present at as many community meetings as possible. Examples of events include:

- Presentation at the Park Place Neighborhood Association Meeting
- Citizen Involvement Council

- Poster at Oregon City engAGE in Community Conversation
- EngAGE in Community Expo 2012
- Poster at the Landslide Preparedness Community Meeting
- Poster at the Earthquake & Emergency Preparedness Community Meeting
- Oregon City Hilltop Farmers Market
- ODOT Project Open House – Main Street Businesses
- ODOT Project Open House – Public
- Main Street Oregon City “Downtown Update” email to 400 to 500 email addresses.
- Trail News – An article has been published in each Trail News paper that has been released since the project began over a year ago.

B. How did the City get the word out about the TSP Update?

1. Utility Bills

Overview:

A flyer was placed in utility bills three times to inform utility customers of the Transportation System Plan Update project and direct them to the website.

Target Audience:

Oregon City utility customers

Implementation/Schedule:

More than 10,000 notices were provided to the Utility Billing Department for dispersal in the May 2012, October 2012, and February 2013 bills.

2. Mailed Postcards

Overview:

A postcard was mailed to all property owners within the urban growth boundary and within Oregon City limits informing citizens of the Transportation System Plan and providing the first work session and hearing dates for both the Planning Commission and the City Commission.

Target Audience:

Oregon City property owners and property owners in adjacent communities within the urban growth boundary.

Implementation/Schedule:

More than 10,500 postcards were mailed on February 15, 2013.

3. Project Poster

Overview:

A poster describing the project and directing the public how to comment on the project was created. The single-sided poster was printed on 8.5”x11” and larger poster sizes and posted at:

- City facilities

- On the project website
- Public meetings
- Public spaces such as parks, transit stations, etc.

Target Audience:

Oregon City residents, businesses and property owners.

Implementation/Schedule:

The poster was distributed throughout the project.

4. Website

Overview:

The Transportation System Plan (TSP) website (www.OCTransportationPlan.org) served as the primary public source of information about the project. All project documents as well as opportunities to comment are available on the website so that the public is continually involved in the process. The website features an interactive map to allow the public to post and view comments. A link to the project website is provided on the City's homepage. A rotating feature on the homepage of the City's website (www.orcity.org) will also direct the public to the project website.

Target Audience:

The general public

Implementation/Schedule:

The website has been available throughout the duration of the project.

5. Project Website Note Cards

Overview:

Note cards were created to provide a brief description of the project and a link to the Transportation System Plan (TSP) website (www.OCTransportationPlan.org). The cards were placed at City offices and at community events.

Target Audience:

The general public

Implementation/Schedule:

The cards were used throughout the duration of the project.

6. Social Media – Facebook and Twitter

Overview:

The City of Oregon City has both a Facebook and a Twitter account. Posts were added to each social media site directing the public to the TSP project website.

Target Audience:

Oregon City Facebook and Twitter followers

Implementation/Schedule:

Project information was posted throughout the project and before each of the project meetings.

7. Earned media

Overview:

John Lewis was interviewed on the radio regarding the Transportation System Plan in June 2012.

Target Audience:

Radio audience.

This exhibit provides findings of compliance of the proposed Oregon City Transportation System Plan (TSP) update and the existing and proposed amendments to the Oregon City Municipal Code (OCMC or “code”) with the requirements set out in the Metro Regional Transportation Functional Plan (RTFP). As established in the RTFP, demonstrating compliance with the RTFP constitutes compliance with the Regional Transportation Plan (RTP).

The RTFP-related findings are included in Table 1; Table 2 includes findings of compliance for the Transportation Planning Rule (TPR), OAR 660-012. The findings address the relevant sections of the TPR including Section -0025 (Deferal of mode), Section -0045 (Implementation of the TSP) and Section -0060 (Plan and Land Use Regulation Amendments). In some cases, there are cross-references in sub-sections of the TPR to requirements in the RTFP.

Table 1: Findings of Compliance of the Municipal Code with the RTFP

Regional Transportation Functional Plan Requirement	Findings of Compliance – Municipal Code
Allow complete street designs consistent with regional street design policies (Title 1, Street System Design Sec 3.08.110A(1))	Existing code and the updated TSP meet these RTFP requirements in the following ways.
Allow green street designs consistent with federal regulations for stream protection (Title 1, Street System Design Sec 3.08.110A(2))	OCMC 12.04.180 (Street design) addresses street design in terms of minimum right-of-way and pavement widths. The section refers to the TSP for the functional classifications of roadways that correspond to the minimum widths. Exceptions to the minimum standards are permitted through a public review process if the modification criteria in OCMC 12.04.007 are satisfied through a Type II procedure.
Allow transit-supportive street designs that facilitate existing and planned transit service pursuant 3.08.120B (Title 1, Street System Design Sec 3.08.110A(3))	Complete street designs, green street designs, and transit-supportive street designs are permitted and supported by this code language. In particular, OCMC 12.04.260 (Street design—Transit) facilitates transit-supportive street design in requiring the applicant to coordinate with TriMet when the applicant’s site potentially impacts transit streets as identified in the TSP. Street designs that are provided in the updated TSP and proposed amendments reflect the surrounding land use designations and multi-modal use of the streets (TSP Volume 1, Tables 1-4; TSP Volume 2, Section K, OCMC Tables 12.04.180-183).
Allow implementation of: • Narrow streets (<28 ft curb to curb); • Wide sidewalks (at least five feet of through zone); • Landscaped pedestrian buffer strips or paved furnishing zones of at least five feet, that include street trees; • Traffic calming to discourage traffic infiltration and excessive speeds; • Short and direct right-of-way routes and shared-use paths to connect residences with commercial services, parks, schools, hospitals, institutions, transit corridors, regional trails and other neighborhood activity centers;	Existing code, proposed code amendments (TSP Volume 2, Section K), and the updated TSP meet these RTFP requirements as follows: • Narrow streets: The cross-section standard for local streets in the 2013 TSP show pavement widths from 32 to 40 feet (TSP Volume 1, Table 4) depending on the street type (per land use context) Tbut may be reduced with a modification per OCMC 12.04.007. • Wide sidewalks and landscaped pedestrian buffer strips or paved furnishing zones: OCMC 12.04.180 (Street design) specifies right-of-way and pavement widths and street design. A landscape strip,

Regional Transportation Functional Plan Requirement	Findings of Compliance – Municipal Code
• Opportunities to extend streets in an incremental fashion, including posted notification on streets to be extended. (Title 1, Street System Design Sec 3.08.110B)	sidewalk, a public access is required for all streets. OCMC 12.04.265 (Street design—Planter strips) and the TSP address planting strips. OCMC 12.08.015 (Street tree planting and maintenance requirements) requires street trees for every 35 feet of frontage, to be evenly distributed along the frontage, for all new development and major redevelopment. OCMC 12.04.010 (Construction specifications—Improved streets) requires all sidewalks to be constructed to City standards and widths specified in the TSP. The TSP requires sidewalks for all roads functionally classified as arterials, collectors, and local streets, with widths no less than five feet (TSP Volume 1, Tables 1-4). • Traffic calming: Traffic calming is acknowledged in the 2001 TSP, and is more appropriately addressed in the TSP than the code. The updated TSP addresses traffic calming in projects proposed in the Financially Constrained and Planned Transportation Systems (TSP Volume 1, Table 5 and TSP Volume 2, Section I, Table 2). • Short and direct right-of-way routes and shared-use paths: OCMC 12.04.199 (Pedestrian and Bicycle Accessways) establishes standards “to provide direct, safe and convenient connections between residential areas, retail and office areas, institutional facilities, industrial parks, transit streets, neighborhood activity centers, rights-of-way, and pedestrian/bicycle accessways which minimize out-of-direction travel, and transit-orientated developments where public street connections for automobiles, bicycles and pedestrians are unavailable.” Multimodal circulation within a site or land division is supported

Regional Transportation Functional Plan Requirement	Findings of Compliance – Municipal Code
	by the provisions in OCMC 16.08.025.B (Traffic/Transportation Plan), 17.52 (Off-Street Parking and Loading), and 17.62 (Site Plan and Design Review). A detailed site circulation plan is required that shows proposed vehicular, bicycle, transit and pedestrian circulation within a site and connections to the existing transportation system, to existing rights-of-way or adjacent tracts, and to parking and loading areas. The code also establishes pedestrian and bicycle accessways, which are defined in OCMC 17.04.030 as "any off-street path or way as described in Chapter 12.04, intended primarily for pedestrians or bicycles and which provides direct routes within and from new developments to residential areas, retail and office areas, transit streets and neighborhood activity centers". Accessways, pursuant to OCMC 12.04, are required through private property or as right-of-way connecting development to the right-of-way at intervals not exceeding 330 feet of frontage; or where the lack of street continuity creates inconvenient or out of direction travel patterns for local pedestrian or bicycle trips. land divisions, master plans, commercial and multi-family developments (OCMC Chapters 16.08, 16.16, 17.68 and 17.62). In these ways, existing code provisions ensure that bicycle and pedestrian paths and connections can be required through the development and land division permitting process. ● Opportunities to extend streets: The code discourages dead-end and stub streets but Subsection B of OCMC 12.04.175 (Street design—Generally) allows for stubbing streets when necessary to create connections to future adjacent development. Likewise, OCMC 17.62.050.A.2.g. in Site Design Review states that "Development shall be required to provide existing or future connections to adjacent sites through the use of a vehicular and pedestrian access easements where applicable." For land

Regional Transportation Functional Plan Requirement	Findings of Compliance – Municipal Code
	divisions, OCMC 16.08.025.B (Traffic/Transportation Plan) requires that a detailed site circulation plan show “proposed vehicular, bicycle, transit and pedestrian access points and connections to the existing system, circulation patterns and connectivity to existing rights-of-way or adjacent tracts.” Proposed amendments to the OCMC require that notification be posted on streets to be extended (see amendments to OCMC 12.04.175 in TSP Volume 2, Section K).
Require new residential or mixed-use development (of five or more acres) that proposes or is required to construct or extend street(s) to provide a site plan (consistent with the conceptual new streets map required by Title 1, Sec 3.08.110D) that: • Provides full street connections with spacing of no more than 530 feet between connections except where prevented by barriers • Provides a crossing every 800 to 1,200 feet if streets must cross water features protected pursuant to Title 3 UGMFP (unless habitat quality or the length of the crossing prevents a full street connection) • Provides bike and pedestrian accessways in lieu of streets with spacing of no more than 330 feet except where prevented by barriers • Limits use of cul-de-sacs and other closed-end street systems to situations where barriers prevent full street connections • Includes no closed-end street longer than 220 feet or having no more than 25 dwelling units (Title 1, Street System Design Sec 3.08.110E)	Existing code and proposed code amendments (TSP Volume 2, Section K) meet these RTFP requirements as follows: • In general, multimodal circulation within a site or land division is supported by OCMC 16.08.025.B (Traffic/Transportation Plan). • Street connections with spacing of no more than 530 feet between intersections is proposed in OCMC 12.04.195 (Spacing Standards), the Functional Classification map in Figure 6 of Volume I of the TSP. Accessways, pursuant to OCMC 12.04, are required through private property or as right-of-way connecting development to the right-of-way at intervals not exceeding 330 feet of frontage; or where the lack of street continuity creates inconvenient or out of direction travel patterns for local pedestrian or bicycle trips. (See TSP Volume 2, Section K). • Cul-de-sacs and closed-end streets: OCMC 12.04.225 (Street design—Cul-de-sacs and dead-end streets) currently limits the use of cul-de-sacs and dead-end streets in Oregon City. When they are proposed, they are required to be less than 200 feet long and limit housing on the street segment to 25 dwelling units for new cul-de-sacs in order to fully comply with this RTFP requirement (see TSP Volume 2, Section K). OCMC 12.04.225 (Pedestrian and bicycle accessways) requires pedestrian and

Regional Transportation Functional Plan Requirement	Findings of Compliance – Municipal Code
Establish city/county standards for local street connectivity, consistent with Title 1, Sec 3.08.110E, that applies to new residential or mixed-use development (of less than five acres) that proposes or is required to construct or extend street(s). (Title 1, Street System Design Sec 3.08.110F)	bicycle accessways from cul-de-sacs. Existing code language meets this requirement. Preliminary plat standards for subdivisions in OCMC 16.08.025.B require a transportation plan which shows a circulation system that is connected to the surrounding transportation system and demonstrates compliance with other code transportation standards. This includes compliance with block length standards in OCMC 12.04.195 (Spacing Standards), the Functional Classification map in Figure 6 of Volume I of the TSP, as well as required connections with future adjacent development (OCMC 12.04.196, and 17.62.050.A.2.f).
To the extent feasible, restrict driveway and street access in the vicinity of interchange ramp terminals, consistent with Oregon Highway Plan Access Management Standards, and accommodate local circulation on the local system. Public street connections, consistent with regional street design and spacing standards, shall be encouraged and shall supersede this access restriction. Multimodal street design features including pedestrian crossings and on-street parking shall be allowed where appropriate. (Title 1, Street System Design Sec 3.08.110G)	Existing code, proposed code amendments and the updated TSP meet this RTFP requirement in the following ways. OCMC 12.04.005.A (Jurisdiction and management of the public rights-of-way) acknowledges that ODOT and Clackamas County also have rights-of-way in the city and, for facilities not under City jurisdiction, defers to the applicable jurisdiction and their permitting standards. Proposed street spacing standards (TSP Volume 1, OCMC 12.04.195) allow for more connectivity than the requirements in RTFP Section 3.08.110G and C. Street connections with spacing of no more than 530 feet between intersections is proposed in OCMC 12.04.195 (Spacing Standards), the Functional Classification map in Figure 6 of Volume I of the TSP to provide connectivity and nonlocal streets shall be constructed as identified in the Functional Classification Map in the TSP (OCMC 12.04.180).

Regional Transportation Functional Plan Requirement	Findings of Compliance – Municipal Code
	Pedestrian crossings are addressed in proposed projects in the TSP Financially Constrained and Planned Transportation Systems (TSP Volume 1, Table 5 and TSP Volume 2, Section I, Table 2). Amendments to support crossings in the vicinity of transit stops are proposed for OCMC 17.62.050(A)(16) (see TSP Volume 2, Section K).
Include Site design standards for new retail, office, multi-family and institutional buildings located near or at major transit stops shown in Figure 2.15 in the RTP: ● Provide reasonably direct pedestrian connections between transit stops and building entrances and between building entrances and streets adjoining transit stops; ● Provide safe, direct and logical pedestrian crossings at all transit stops where practicable At major transit stops, require the following: ● Locate buildings within 20 feet of the transit stop, a transit street or an intersection street, or a pedestrian plaza at the stop or a street intersections; ● Transit passenger landing pads accessible to disabled persons to transit agency standards; ● An easement or dedication for a passenger shelter and an underground utility connection to a major transit stop if requested by the public transit provider; ● Lighting to transit agency standards at the major transit stop; ● Intersection and mid-block traffic management improvements as needed and practicable to enable marked crossings at major transit stops. (Title 1, Transit System Design Sec 3.08.120B(2))	Existing code and proposed code amendments (TSP Volume 2, Section K) meet these RTFP requirements in the following ways: Subsection A.9 of OCMC 17.62.050, Site Plan and Design Review, establishes extensive criteria for pedestrian circulation on-site. OCMC 17.62.080 specifically addresses development along transit streets, including requirements for maximum setbacks and for all buildings to face the street and to have a direct pedestrian connection with the transit street. OCMC 12.04.260 (Street design—Transit) requires the applicant to coordinate with TriMet when the applicant’s site potentially impacts transit streets as identified in the City TSP. Amendments to support crossings in the vicinity of transit stops are proposed for OCMC 17.62.050(A)(16) (see TSP Volume 2, Section K). Standards in both OCMC Chapter 12.04 (Streets, Sidewalks and Public Places) and Chapter 17.62 (Site Plan and Design Review) address street and site plan design to accommodate transit amenities and facilities. OCMC 12.04.260 (Street design—Transit), 17.62.080 (Special development standards along transit streets), and 17.62.050.A.15 of Site Plan and Design Review allow decision makers to require transit-supportive elements such as direct pedestrian and bicycle connections to transit streets and stops, as well as easements, stops, shelters, pullouts, and pads, when the site is

Regional Transportation Functional Plan Requirement	Findings of Compliance – Municipal Code
	adjacent to a designated transit street.
As an alternative to implementing site design standards at major transit stops (section 3.08.120B(2), a city or county may establish pedestrian districts with the following elements: • A connected street and pedestrian network for the district; • An inventory of existing facilities, gaps and deficiencies in the network of pedestrian routes; • Interconnection of pedestrian, transit and bicycle systems; • Parking management strategies; • Access management strategies; • Sidewalk and accessway location and width; • Landscaped or paved pedestrian buffer strip location and width; • Street tree location and spacing; • Pedestrian street crossing and intersection design; • Street lighting and furniture for pedestrians; • A mix of types and densities of land uses that will support a high level of pedestrian activity. (Title 1, Pedestrian System Design Sec 3.08.130B)	The “alternative approach” of establishing pedestrian districts, as allowed for in this RTFP requirement, is not necessary. The City’s existing and proposed development requirements are transit supportive and consistent with RTFP requirements as demonstrated in the findings above.
Require new development to provide on-site streets and accessways that offer reasonably direct routes for pedestrian travel. (Title 1, Pedestrian System Design Sec 3.08.130C)	OCMC 17.62.050.A.9 for Site Plan and Design Review establishes extensive criteria for on-site pedestrian circulation. Pedestrian circulation is also addressed by OCMC Chapter 12.04.199(Pedestrian and Bicycle Accessways).

Regional Transportation Functional Plan Requirement	Findings of Compliance – Municipal Code
Establish parking ratios, consistent with the following: • No minimum ratios higher than those shown on Table 3.08-3. • No maximum ratios higher than those shown on Table 3.08-3 and illustrated in the Parking Maximum Map. If 20-minute peak hour transit service has become available to an area within a one-quarter mile walking distance from bus transit one-half mile walking distance from a high capacity transit station, that area shall be removed from Zone A. Cities and counties should designate Zone A parking ratios in areas with good pedestrian access to commercial or employment areas (within one-third mile walk) from adjacent residential areas. • Establish a process for variances from minimum and maximum parking ratios that include criteria for a variance. • Require that free surface parking be consistent with the regional parking maximums for Zones A and B in Table 3.08-3. Following an adopted exemption process and criteria, cities and counties may exempt parking structures; fleet parking; vehicle parking for sale, lease, or rent; employee car pool parking; dedicated valet parking; user-paid parking; market rate parking; and other high-efficiency parking management alternatives from maximum parking standards. Reductions associated with redevelopment may be done in phases. Where mixed-use development is proposed, cities and counties shall provide for blended parking rates. Cities and counties may count adjacent on-street parking spaces, nearby public parking and shared parking toward required parking minimum standards. Use categories or standards other than those in Table 3.08-3 upon demonstration that the effect will be substantially the same as the application of the ratios in the table. • Provide for the designation of residential parking districts in local comprehensive plans or implementing ordinances. • Require that parking lots more than three acres in size provide street-like features along major driveways, including curbs, sidewalks and street trees or planting	Existing code and proposed code amendments (TSP Volume 2, Section K) meet these RTFP requirements as follows: • Parking ratios and maximums: Current City parking ratios and maximums are presented in Table 17.52.020 of OCMC Chapter 17.52 (Off-Street Parking and Loading) and are consistent with those in RTFP Table 3.08-3, • Creation of a type II parking reduction for the Downtown Parking Overlay District: (50% reduction in the minimum number of spaces required). Reduction of spaces based on areas that can accommodate a denser development pattern based on existing land use, infrastructure and ability to access the site by means of walking, biking or transit • Variances and exemptions: Creation of a Planning Commission Parking Adjustment Process to provide for flexibility in modifying parking standards in all zoning districts, without permitting an adjustment that would adversely impact the surrounding or planned neighborhood. • Residential parking districts: The City has an existing parking permit program. • Parking lot landscaping and pedestrian circulation: OCMC 17.52.060 (Parking lot landscaping) includes requirements for pedestrian accessways, trees, and landscaping along the perimeter and in the interior of parking lots. Proposed amendments require that wide driveways align with existing or planned streets on adjacent sites (TSP Volume 2, Section K). • On-street loading: Proposed amendments to create OCMC 17.52.090, a new section in OCMC Chapter 17.52 (Off-Street Parking and Loading), address off-street and on-street loading and unloading (see TSP Volume 2, Section K). • Long-term bicycle parking: OCMC 17.52.040 (Bicycle parking

Regional Transportation Functional Plan Requirement	Findings of Compliance – Municipal Code
strips. Major driveways in new residential and mixed-use areas shall meet the connectivity standards for full street connections in section 3.08.110, and should line up with surrounding streets except where prevented by topography, rail lines, freeways, pre-existing development or leases, easements or covenants that existed prior to May 1, 1995, or the requirements of Titles 3 and 13 of the UGMFP. - Require on-street freight loading and unloading areas at appropriate locations in centers. Establish short-term and long-term bicycle parking minimums for: - New multi-family residential developments of four units or more; - New retail, office and institutional developments; - Transit centers, high capacity transit stations, inter-city bus and rail passenger terminals; and - Bicycle facilities at transit stops and park-and-ride lots. (Title 4, Parking Management Sec 3.08.410)	standards) addresses the amount of bicycle parking, and parking location and design. The section addresses parking for the uses specified in the RTFP requirement, but it does not specifically address long-term bicycle parking. So it is proposed that OCMC 17.52.040 (Bicycle parking standards) be amended to include requirements for long-term bicycle parking in multi-family, retail, office, institutional, and transit facility development. (See proposed amendments in TSP Volume 2, Section K).

Table 2: Findings of Compliance of the Comprehensive Plan with the RTFP

Regional Transportation Functional Plan Requirement	Findings of Compliance – Comprehensive Plan
When proposing an amendment to the comprehensive plan or to a zoning designation, consider the strategies in subsection 3.08.220A as part of the analysis required by OAR 660-012-0060. If a city or county adopts the actions set forth in 3.08.230E (parking ratios, designs for street, transit, bicycle, pedestrian, freight systems, TSMO projects and strategies, and land use actions) and section 3.07.630.B of Title 6 of the UGMFP, it shall be eligible for an automatic reduction of 30 percent below the vehicular trip generation rates recommended by the Institute of Transportation Engineers when analyzing the traffic impacts, pursuant to OAR 660-012-0060, of a plan amendment in a Center, Main Street, Corridor or Station Community. (Title 5, Amendments of City and County Comprehensive and Transportation System Plans Sec 3.08.510A,B)	The strategies and actions in RTFP Sections 3.08.220A and 3.08.230E were integrated into the updated TSP. Instead of the 30% trip reduction offered in RTFP Section 3.08.510, the City is considering designation of a Multimodal Mixed-Use Area (MMA) in Downtown or as part of the Regional Center. The MMA designation, allowed by the Transportation Planning Rule (OAR 660-012-0060(10)), could help address areas that do not currently or are not projected to meet mobility standards. Designation of a MMA would occur as a separate Comprehensive Plan amendment process. In preparation for a potential MMA designation, the OCMC was preliminarily assessed for consistency with MMA requirements that are established in OAR 660-012-0060(10). It was found that existing code meets most of the MMA requirements except for parking provisions. To address this, proposed code amendments to reduce minimum parking requirements for the Downtown Parking Overlay District, which would likely be the core of a MMA along with the creation of a new Planing Commission Parking Adjustment process meets the intent of the MMA standards for minimum parking.(See proposed amendments to OCMC 17.52.20.
Adopt parking policies, management plans and regulations for Centers and Station Communities. Plans may be adopted in TSPs or other adopted policy documents and may focus on sub-areas of Centers. Plans shall include an inventory of parking supply and usage, an evaluation of bicycle parking needs with consideration of <i>TriMet Bicycle Parking Guidelines</i>. Policies shall be adopted in the TSP. Policies, plans and regulations must consider and may include the following range of strategies: • By-right exemptions from minimum parking requirements; • Parking districts;	Chapter 17.52 (Off-Street Parking and Loading) of the City code addresses shared parking, bicycle parking, and carpool/vanpool employee parking. The 2009 Downtown Oregon City Parking Study recommends several parking strategies that can be worked into a parking management plan and other implementation strategies.

- Shared parking;
- Structured parking;
- Bicycle parking;
- Timed parking;
- Differentiation between employee parking and parking for customers, visitors and patients;
- Real-time parking information;
- Priced parking;
- Parking enforcement.

(Title 4, Parking Management Sec 3.08.410I)

Table 3: Findings of Compliance with Oregon Administrative Rule OAR 660 Division 12 Transportation Planning Rule (TPR)

OAR 660-012-0005 through 660-012-0055	Findings of Compliance
660-012-0025(3)(a) <i>Identify the transportation need for which decisions regarding function, general location or mode are being deferred;</i>	It is anticipated that 3 intersections will not comply with the automotive mobility standards identified within the Oregon Highway Plan (OHP) through 2035 and it is infeasible or impractical to meet the mobility targets in Table 7 of the OHP. A preliminary analysis of the intersections has been completed and it has been determined that there are no feasible solutions to alter the intersections resulting in compliance with the mobility standards. • I-205/OR 213 Interchange- According to ODOT the redesigned interchange would include construction of additional lanes and bridges, costing \$100 million to \$200 million. • OR 99E/I-205 Interchange- The City and ODOT agreed that the redesigned interchange would include increasing the capacity of the freeway off-ramps with additional lanes or extending existing lanes, costing \$10 million to \$30 million or more. Speculation today suggests that the “or more” solutions could include additional travel lanes on I-205 between the Gladstone interchange and the West Linn/Lake

	Oswego interchange. • Beavercreek Road/OR 213 - The 2001 TSP identified a grade-separated interchange costing \$20 million. Adjusting for inflation, that same project today would be \$26 million. Even in combination, ODOT, Clackamas County, and Oregon City do not have projected funding to implement the \$136 million needed to reconstruct the three facilities to comply with the mobility standards. Due to the large cost associated with the improvements, the projects do not appear on the Oregon Highway Plan, the Regional Transportation System Plan or the proposed TSP project list because there is no reasonable likelihood that the projects will be funded. ODOT has made it clear to staff that they would oppose constructing the improvements associated with the intersections and would not contribute any funds for this purpose. ODOT's current revenue projections will be sufficient to cover only the highest priority projects within the region. There is no state or regional funding identified for the three Oregon City locations. Further, neither the OHP, nor the RTP identify any solutions to enhance the function of these three areas. Because funding is not likely to be available to implement these very expensive projects, ODOT recommends that the City undertake additional studies to develop other ways of meeting the City's transportation needs that do not involve major construction projects at these three locations. In addition, these studies may support adoption of alternate mobility standards that allow for a greater level of congestion than is currently allowed by ODOT or is proposed in the TSP. The transportation studies would likely look more broadly at the intersections to identify less costly improvements that provide some increased capacity as well as opportunities to invest in the local network to provide alternative routes and improvements for non-automobile travel in an effort to reduce peak hour trips at the aforementioned intersections. The scope of these additional studies has not been determined and may result in the identification of additional projects that could be added to those already included TSP. As most other jurisdictions in the region are also discovering that insufficient funds will be available to meet mobility standards, additional studies and the adoption of alternate mobility standards that allow for greater levels of congestion will likely be pursued by many jurisdictions. Undertaking such studies and adopting alternate mobility standards, an action that will
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	also need to be taken by the Oregon Transportation Commission if it involves state highways, is likely to take 12-24 months to complete. As specified in the Oregon City Municipal Code, most developers are required to conduct a traffic study identifying the traffic impacts of development on proximate intersections throughout the City that are most likely to be more significantly impacted. The Municipal Code requires that if development puts more than 20 new automobile trips through an intersection during the AM or PM peak hour, an analysis is required to demonstrate compliance with mobility standards. As explained above, some intersections on the state highway system cannot be brought into compliance with current ODOT and proposed TSP mobility standards without unreasonably expensive projects for which there is no identified funding. As the City is not required to assure compliance with mobility standards for permitted and conditional uses on state facilities beyond what is identified in the Regional Transportation System Plan, the City is proposing to temporarily exempt permitted and conditional uses from complying with the current mobility standards for the three aforementioned locations and all state facilities within or adjacent to the regional center. This temporary exemption would be in effect while the City undertakes more detailed analysis and pursues adoption of an alternate mobility standard over the next 12-24 months. Providing a temporary exemption for permitted and conditional uses with regard to their impact on state highway facilities would align City code requirements with ODOT requirements and other local governments which do not require compliance for any ODOT facility. In addition, the exemption satisfies the City's obligation to implement the state and regional transportation plans as required by state law. Improvements identified in the TSP would be constructed but would not necessarily result in satisfaction of the mobility standards at the locations discussed above. If there are no improvements identified in the TSP associated with an intersection, no improvements would be made at that intersection. Since the aforementioned expensive improvements are not included in the TSP, congestion would be allowed to occur at these locations. Since the expensive improvements at these three key locations are not included in the TSP project list, the current SDC program does not include the collection of any funds to pay for any improvements at these locations.
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660-012-0025(3)(b) <i>Demonstrate why information required to make final determinations regarding function, general location, or mode cannot reasonably be made available within the time allowed for preparation of the TSP;</i>	Alternative targets were not developed during the TSP update because the amended Policy 1F was not in effect when the TGM grant contract was scoped. Now that the creation of alternate mobility standards is feasible, Oregon City will create an alternate mobility standard for the three intersections identified and receive approval from all necessary bodies. Additional time is needed to allow the creation and adoption of alternate mobility standards as identified by appropriate agencies. The City believes it is possible to have alternate mobility standards and all necessary designations in place within one to two years from adoption of the TSP update.
660-012-0025(3)(c) <i>Explain how deferral does not invalidate the assumptions upon which the TSP is based or preclude implementation of the remainder of the TSP;</i>	The recommended policies and projects in the remainder of the TSP will not preclude future decisions about how to address each of the three deficient locations. Capital improvements projects and design standards have been identified for the City's street system, which will allow for development to progress. Interim improvements identified in the TSP are required to partially address the identified problems, but will mainly address safety issues with extensive vehicle queues during peak hours and not limit future design or operational options at the interchange.
660-012-0025(3)(d) <i>Describe the nature of the findings which will be needed to resolve issues deferred to a refinement plan; and</i>	The alternate mobility standards are likely to include a combination of adopting alternative mobility targets and an agreed upon set of improvements and/or programs (for safety, connectivity, other modes, TSMO, and TDM). The solutions will likely not result in meeting the mobility target, but will provide reasonable trade-offs between multiple local and state policy objectives including safety, cost/financial feasibility, local land use objectives, and environmental impacts.
660-012-0025(3)(e) <i>Set a deadline for adoption of a refinement plan prior to initiation of the periodic review following adoption of the TSP.</i>	The City will peruse further study of the intersections and adoption of the alternate mobility standards over the year or two following adoption of the Transportation System Plan.

OAR 660-012-0045 Implementation of the TSP	Findings of Compliance
(1) Each local government shall amend its land use regulations to implement the TSP.	
(b) To the extent, if any, that a transportation facility, service, or improvement concerns the application of a comprehensive plan provision or land use regulation, it may be allowed without further land use review if it is permitted outright or if it is subject to standards that do not require interpretation or the exercise of factual, policy or legal judgment.	It is proposed that the OCMC be amended to specify transportation facilities and improvements applicable to permitted uses in its City zoning districts (TSP Volume 2, Section K).
(c) Where a transportation facility, service or improvement is determined to have a significant impact on land use or requires interpretation or the exercise of factual, policy or legal judgment regarding the application of a comprehensive plan or land use regulation, the local government shall provide a review and approval process that is consistent with 660-012-0050 (Transportation Project Development). Local governments shall amend regulations to provide for consolidated review of land use decisions required to permit a transportation project.	Notice provisions in OCMC 17.50.090 (Public notices) already require agencies like TriMet and ODOT to be contacted in cases of legislative applications (Subsection C). The proposed code amendments contain clear and objective criteria for review through a Type I process. IN the casse of adjustments, a Type II process, which includes notice and an opportunity for comment, will be provided.
(2) Local governments shall adopt land use or subdivision ordinance regulations, consistent with applicable federal and state requirements, to protect transportation facilities for their identified functions.	
(a) Access control measures.	Block lengths and spacing standards are addressed by the new street design criteria in the TSP (TSP Volume 1). Text and tables in OCMC 12.04.180 (Street design—OCMC 12.04.195 (Spacing Standards) will provide street design and spacing standards tables from the updated TSP (TSP Volume 2, Section K).
(b) Standards to protect the future operations of roadways and transit corridors	Traffic impact studies are required for subdivisions pursuant to OCMC 16.08.025(B), and are enabled for Site Plan and Design Review in OCMC 17.62.040(I). Mobility standards for roadways in the city are established in the OHP for state roadways, in the RTP and RTFP for regional roadways, and in the City TSP for local roadways (TSP Volume 1,

OAR 660-012-0045 Implementation of the TSP	Findings of Compliance
	Section 4, Standards). City mobility standards are proposed to be changed to be more accommodating of peak hour congestion and to not over-design streets so that they are wide and difficult to bike along or to cross. The TSP update is designed to meet performance standards for existing and future development within the UGB, with exceptions. Some intersections on the state highway system cannot be brought into compliance with current ODOT and proposed TSP mobility standards without unreasonably expensive projects for which there is no identified funding. As the City is not required to assure compliance with mobility standards for permitted and conditional uses on state facilities beyond what is identified in the Regional Transportation System Plan, the City proposed to temporarily exempt permitted and conditional uses from complying with the current mobility standards for the interchanges of I-205/99E, I-205/213 and OR 213/Beavercreek Road and all state facilities within or adjacent to the regional center, as discussed in greater detail above. With no reasonable solution resulting in compliance with mobility standards for these locations, the City has will continue to work with regional partners to pursue special studies and alternate mobility standards for these locations. Minor improvements are anticipated for a majority of the three intersections until the solutions are adopted, likely one to two years after adoption of the Transportation System Plan. Zone change amendment criteria (OCMC 17.68.020) require that sufficient public facilities be provided and that Statewide Planning Goals, such as transportation, be complied with.

OAR 660-012-0045 Implementation of the TSP	Findings of Compliance
(d) Coordinated review of future land use decisions affecting transportation facilities, corridors or sites	See response and proposed amendments related to -0045(1)(c).
(e) Process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities	Pursuant to OCMC 17.50.130(A), “(a)ll city decision-makers have the authority to impose reasonable conditions of approval designed to ensure that all applicable approval standards are, or can be, met.”
(f) Regulations to provide notice to public agencies providing transportation facilities and services, MPOs, and ODOT of: land use applications that require public hearings, subdivision and partition applications, applications which affect private access to roads, applications within airport noise corridor and imaginary surfaces which affect airport operations.	See response and proposed amendments related to -0045(1)(c).
g) Regulations assuring amendments to land use designations, densities, design standards are consistent with the function, capacities, and levels of service of facilities designated in the TSP.	OCMC 17.68.020(C) requires, for proposed zoning designation amendments, that “(t)he land uses authorized by the proposal are consistent with the existing or planned function, capacity and level of service of the transportation system serving the proposed zoning district.”
(3) Local governments shall adopt land use or subdivision regulations for urban areas and rural communities as set forth in 660-012-0040(3)(a-d):	
(a) Provide bicycle parking in multifamily developments of 4 units or more, new retail, office and institutional developments, transit transfer stations and park-and-ride lots	<i>Addressed by RTFP, Title 4: Regional Parking Management, 3.08.410.I.</i> Bicycle parking requirements are established for all uses in Oregon City Municipal Code (OCMC) Section 17.52.040 (Bicycle Parking Standards).
(b) Provide “safe and convenient” (per subsection 660-012-0045.3(d)) pedestrian and bicycle connections from new subdivisions/multifamily development to neighborhood activity centers; bikeways are required along arterials and major collectors; sidewalks are required along arterials, collectors, and most local streets in urban areas except controlled access roadways	<i>Addressed by RTFP, Title 1: Pedestrian System Design, 3.08.130, and Title 1: Bicycle System Design, 3.08.140</i> Section -050 (Standards) of Chapter 17.62 (Site Plan and Design Review) sets requirements for street connectivity and a “well-marked, continuous and protected on-site pedestrian circulation

OAR 660-012-0045 Implementation of the TSP	Findings of Compliance
	system.” Section 025.B of Chapter 16.08 (Subdivisions – Process and Standards) requires a detailed site circulation plan showing proposed vehicular, bicycle, transit and pedestrian access points and connections to the existing system, and circulation patterns and connectivity to existing rights-of-way or adjacent tracts. Section 12.04.199 (Pedestrian and bicycle accessways) requires pedestrian and bicycle access to activity centers, where this access is not provided via street right-of-way. Roadway cross-sections are provided in OCMC 12.04.180.
(c) Off-site road improvements required as a condition of development approval must accommodate bicycle and pedestrian travel, including facilities on arterials and major collectors	Where off-site improvements are required, the existing roadway cross-sections will govern and currently they require pedestrian and bicycle facilities.
(e) Provide internal pedestrian circulation within new office parks and commercial developments	Addressed by RTFP, Title 1: Street System Design, 3.08.110E Site Plan and Design Review is required for all new non-residential development, as well as conditional uses, cottage housing development, and multi-family uses in all zones Section - 050 (Standards) of Chapter 17.62 (Site Plan and Design Review) requires a “well-marked, continuous and protected on-site pedestrian circulation system” for all proposed development.
(4) To support transit in urban areas containing a population greater than 25,000, where the area is already served by a public transit system or where a determination has been made that a public transit system is feasible, local governments shall adopt land use and subdivision regulations as provided in (a)-(g) below:	
(a) Transit routes and transit facilities shall be designed to support transit use through provision of bus stops, pullouts and shelters, optimum road geometrics, on-road parking	Addressed by RTFP, Title 1: Transit System Design, 3.08.120

OAR 660-012-0045 Implementation of the TSP	Findings of Compliance
restrictions and similar facilities, as appropriate;	Section 12.04.260 (Street design – Transit) requires that streets be designed and constructed in a way that supports pedestrian and bicycle circulation and that applicants coordinate with TriMet when development impacts transit streets identified in Figure 5.7 (Public Transit System Plan) of the TSP. The section allows decision makers to require transit and transit-related facilities where they have been identified and planned.
(b) New retail, office and institutional buildings at or near major transit stops shall provide for convenient pedestrian access to transit through the measures listed in (A) and (B) below. (A) Walkways shall be provided connecting building entrances and streets adjoining the site; (B) Pedestrian connections to adjoining properties shall be provided except where such a connection is impracticable as provided for in OAR 660-012-0045(3)(b)(E). Pedestrian connections shall connect the on site circulation system to existing or proposed streets, walkways, and driveways that abut the property. Where adjacent properties are undeveloped or have potential for redevelopment, streets, accessways and walkways on site shall be laid out or stubbed to allow for extension to the adjoining property;	Addressed by RTFP, Title 1: Transit System Design, 3.08.120 Section 12.04.260 (Street design – Transit) requires pedestrian and bicycle accessways be provided to minimize travel distance and support access to transit streets, transit stops, and neighborhood activity centers
(C) In addition to (A) and (B) above, on sites at major transit stops provide the following: (i) Either locate buildings within 20 feet of the transit stop, a transit street or an intersecting street or provide a pedestrian plaza at the transit stop or a street intersection; (ii) A reasonably direct pedestrian connection between the transit stop and building entrances on the site; (iii) A transit passenger landing pad accessible to disabled persons; (iv) An easement or dedication for a passenger shelter if requested by the transit provider; and	Addressed by RTFP Title 1: Pedestrian System Design, 3.08.130B OCMC 12.04.260 (Street design – Transit) requires the applicant to consult with TriMet when the application impacts transit streets.

OAR 660-012-0045 Implementation of the TSP	Findings of Compliance
(v) Lighting at the transit stop.	
(d) Designated employee parking areas in new developments shall provide preferential parking for carpools and vanpools;	Subsection E of Section 17.52.030 (Standards for automobile parking) establishes requirements for carpool and vanpool parking that comply with this provision.
(e) Existing development shall be allowed to redevelop a portion of existing parking areas for transit-oriented uses, including bus stops and pullouts, bus shelters, park and ride stations, transit-oriented developments, and similar facilities, where appropriate;	Subsection B of Section 17.52.020 (Number of automobile spaces required) allows for reductions in the required amount of parking in the case of transit-oriented and multi-family housing development. outside of the Downtown Commercial Parking Overlay Districts. Reduction to minimum parking standards has been increased up to 50% from 10%. Revised definition of Transit Oriented Development creates a simplified Type II process for reduction.
(f) Road systems for new development shall be provided that can be adequately served by transit, including provision of pedestrian access to existing and identified future transit routes. This shall include, where appropriate, separate accessways to minimize travel distances;	<i>Addressed by RTFP Title 1: Street System Design, 3.08.110E, and Title 1: Transit System Design, 3.08.120, and Title 1: Pedestrian System Design, 3.08.130</i> Section 12.04.260 (Street design – Transit) requires pedestrian and bicycle accessways be provided (in accordance with OCMC Section 12.04.199) to minimize travel distance and support access to transit streets, transit stops, and neighborhood activity centers.
(g) Along existing or planned transit routes, designation of types and densities of land uses adequate to support transit.	Zoning along transit lines in Oregon City is generally consistent with this TPR provision. Line 32 – In downtown Oregon City, this line is adjacent mostly to MUD (Mixed Use Downtown), MUE (Mixed Use Employment), R3.5 (Single Family Residential, minimum 3,500 sf lot), and R6 (Single Family Residential, minimum 6,000 sf lot) zoning. As the line travels south of downtown on Molalla, the zoning is mainly

MUC (Mixed Use Corridor). In reaching its destination of the Clackamas Community College campus, it is surrounded by a mixture of MUC, C (General Commercial), R2 (Single Family Residential, minimum 2,000 sf lot), GI (General Industrial), and I (Institutional) zoning. So the zoning along this line is generally consistent with this TPR provision. It is only the GI zoning that appears inconsistent; however, the route passes this zoning as part of reaching the college campus, so the City Commission finds that this inconsistency is acceptable.

Line 33 – In downtown Oregon City, this line is adjacent to primarily MUC, MUD, R3.5, and I zoning. As the route moves south of downtown on Linn, it is surrounded mainly by R2, R6, R8 (Single Family Residential, minimum 8,000 sf lot), and R10 (Single Family Residential, minimum 10,000 sf lot) zoning. Residential areas with minimum lot sizes of 8,000 square feet and 10,000 square feet may be less adequate to support transit. However, this part of the route is located between downtown to the north and MUC, MUE, C, R2, R3.5, and I zoning to the south along Warner Milne, Beavercreek, and Molalla to the Clackamas Community College campus, so again, the City Commission finds this is acceptable to comply with the requirement.

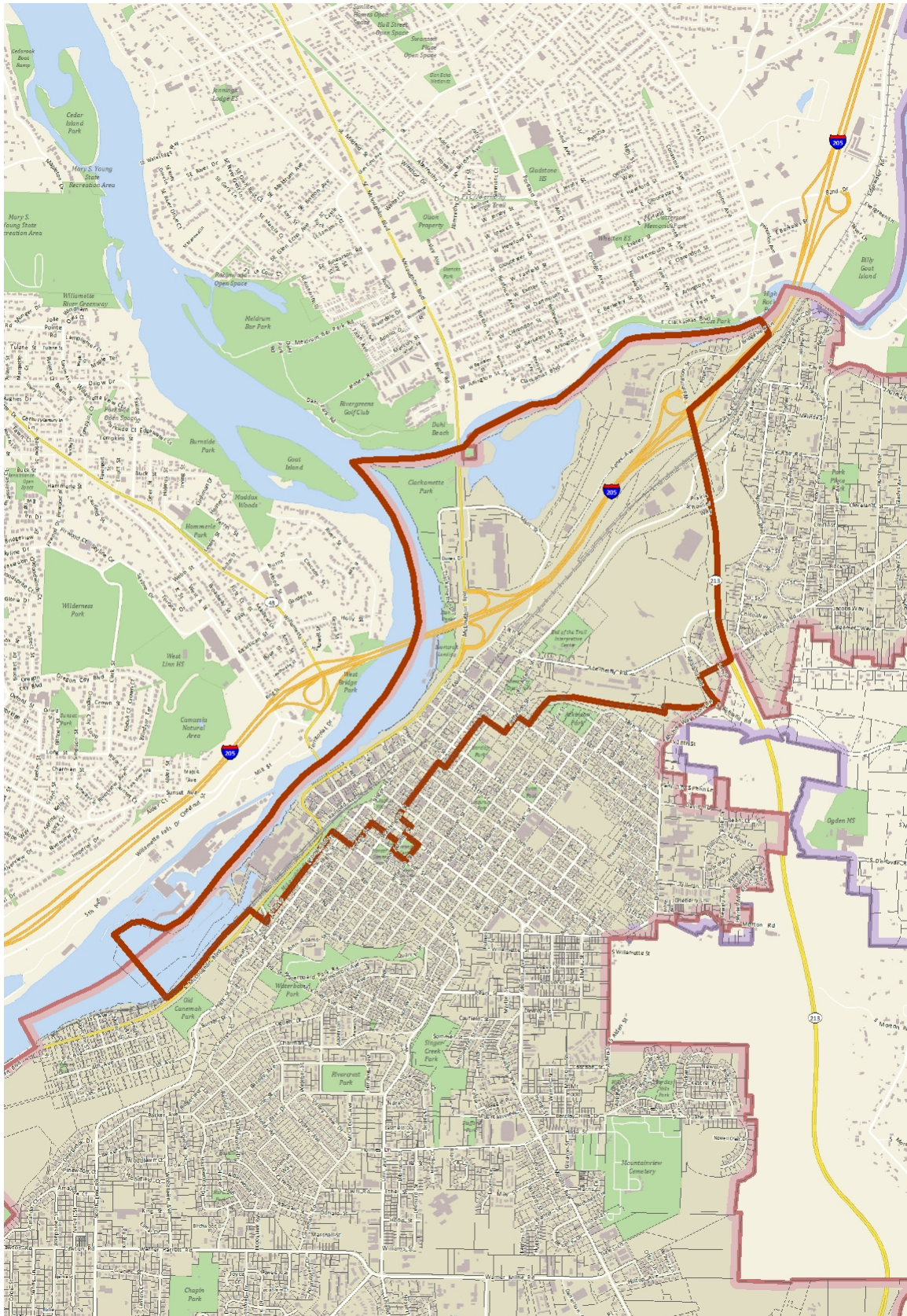
Line 34 – This line travels through downtown Oregon City, surrounded primarily by MUD zoning, before heading east/northeast on Abernethy and Holcomb to serve primarily residential areas in this part of the city. The zoning is mainly R3.5, R6, R8, and R10. Again, R8 and R10 may not be entirely appropriate for transit routing but the route terminates and loops in a large area of R3.5 zoning, whose higher density helps justify the routing of this line. In addition, this route is one that

OAR 660-012-0045 Implementation of the TSP	Findings of Compliance
	operates during peak hours only for commuters, further allowing in particular for the range of residential zoning found along it. Line 99 – This line takes its own route on 7th through downtown Oregon City, where it is adjacent to MUC zoning. For the remainder of its route in the city, it coincides with Lines 32 and 33; see the comments pertaining to those routes. Lines 35, 79, and 154 – These three routes enter the city as far as downtown and are adjacent to MUD zoning, which is appropriate for transit routing and service.
(5) In MPO areas, local governments shall adopt land use and subdivision regulations to reduce reliance on the automobile which:	
(a) Allow transit-oriented developments (TODs) on lands along transit routes;	See OAR 660-012-0045(4)(g) above. While not allowed on all land along transit routes in Oregon City, there is a significant amount of mixed use zoning along the routes that will allow this type of development.
(b) Implements a demand management program to meet the measurable standards set in the TSP;	Subsection B of Section 17.52.030 (Number of automobile spaces required) allows for reductions in the required amount of parking in the case of TDM programs. TDM program elements are included in the Financially Constrained and Planned Transportation Systems (TSP Volume 1, Table 5 and TSP Volume 2, Section I, Table 2). The projected performance of these systems is provided in Section 8 (Outcomes) of the TSP.
(c) Implements a parking plan which:	Off-street parking requirements for non-residential uses have been reduced from 1990 levels because Oregon City adopted RTP

OAR 660-012-0045 Implementation of the TSP	Findings of Compliance
(A) Achieves a 10% reduction in the number of parking spaces per capita in the MPO area over the planning period. This may be accomplished through a combination of restrictions on development of new parking spaces and requirements that existing parking spaces be redeveloped to other uses; (B) Aids in achieving the measurable standards set in the TSP in response to OAR 660-012-0035(4) [reducing reliance on the automobile]; (C) Includes land use and subdivision regulations setting minimum and maximum parking requirements in appropriate locations, such as downtowns, designated regional or community centers, and transit oriented-developments; and (D) Is consistent with demand management programs, transit-oriented development requirements and planned transit service. <u>OR</u> (d) As an alternative to (c) above, local governments in an MPO may instead revise ordinance requirements for parking as follows: (A) Reduce minimum off-street parking requirements for all non-residential uses from 1990 levels; (B) Allow provision of on-street parking, long-term lease parking, and shared parking to meet minimum off-street parking requirements; (C) Establish off-street parking maximums in appropriate locations, such as downtowns, designated regional or community centers, and transit-oriented developments; (D) Exempt structured parking and on-street parking from parking maximums; (E) Require that parking lots over 3 acres in size provide street-like features along major	parking ratios as part of its last TSP update. Off-street parking is allowed according to roadway cross-sections and Subsection 17.52.020(B)(3) and (5) make provisions for shared parking and off-street parking. Section and Table 17.52.020 (Number of automobile spaces required) establish both minimum and maximum parking space requirements. No exemptions are made for structured parking. Structured parking is a conditional use subject to other review and requirements. Section 17.52.060 (Parking lot landscaping) sets standards for walkways/sidewalks and landscaping the perimeters and interiors of parking areas. Residential parking districts can be established through an existing permit parking program.

OAR 660-012-0045 Implementation of the TSP		Findings of Compliance
driveways (including curbs, sidewalks, and street trees or planting strips); and		
(F) Provide for designation of residential parking districts.		
(e) Require all major industrial, institutional, retail and office developments to provide either a transit stop on site or connection to a transit stop along a transit trunk route when the transit operator requires such an improvement.		Section 12.04.260 (Street design – Transit) requires that applicants coordinate with TriMet when development impacts transit streets identified in Figure 5.7 (Public Transit System Plan) of the TSP.
OAR 660-012-0060 Plan and Land Use Regulation Amendments		Findings
Amendments to functional plans, acknowledged comprehensive plans, and land use regulations that significantly affect an existing or planned transportation facility shall assure that allowed land uses are consistent with the identified function, capacity, and performance standards of the facility.		OCMC 17.68.020(C) requires, for proposed amendments, that “(t)he land uses authorized by the proposal are consistent with the existing or planned function, capacity and level of service of the transportation system serving the proposed zoning district.”

Oregon City Regional Center

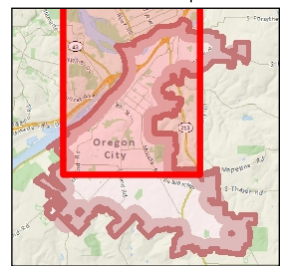


Legend

- Taxlots
- Regional Center (1998)
- City Limits
- UGB

Notes

Overview Map



The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, surveying or navigation purposes. Notification of any errors is appreciated.



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