

Appendix A

Interchange Area Concept Alternatives



Concept 1a

Figure A-1

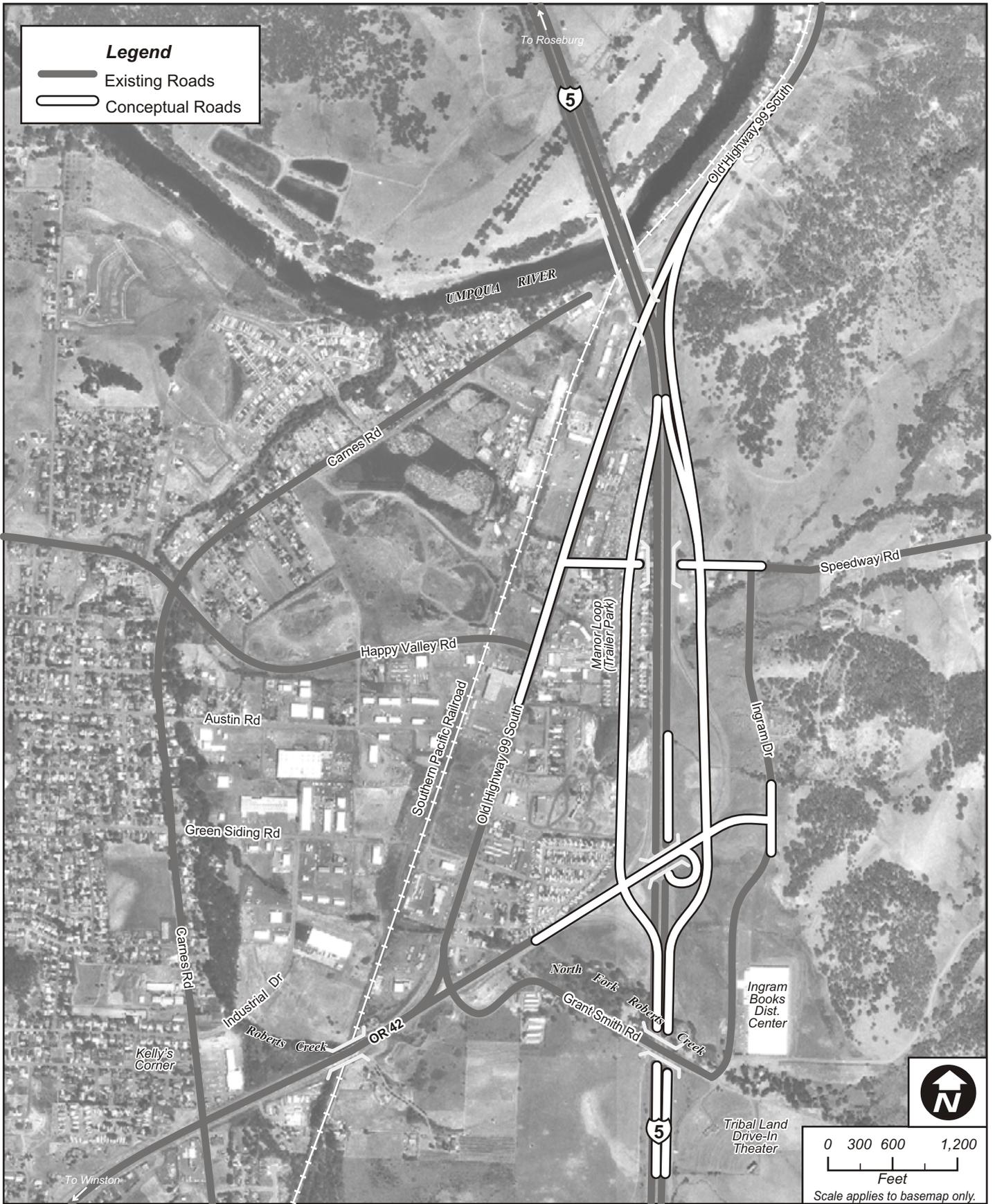


Concept 1b



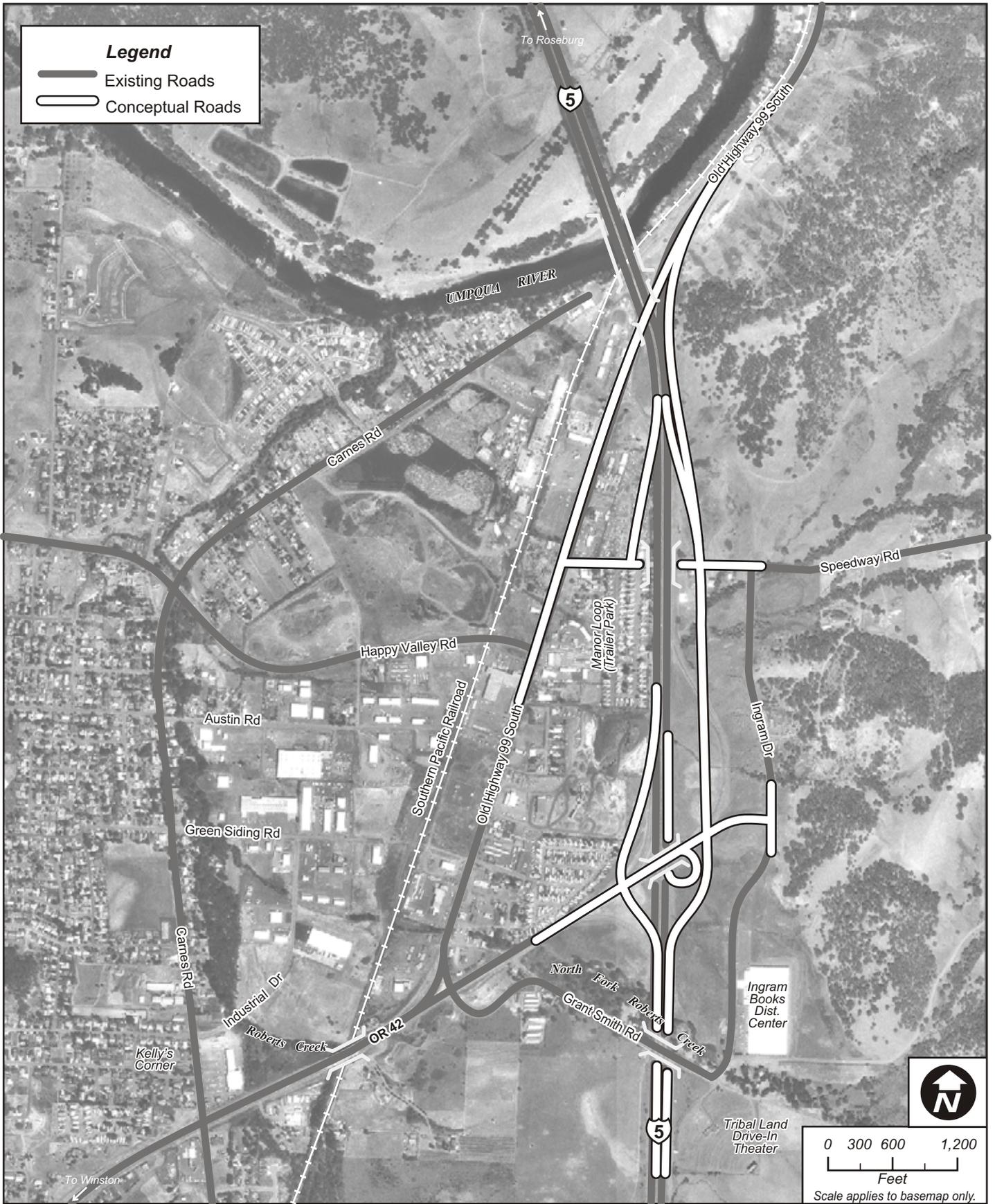
Concept 2

Figure A-3



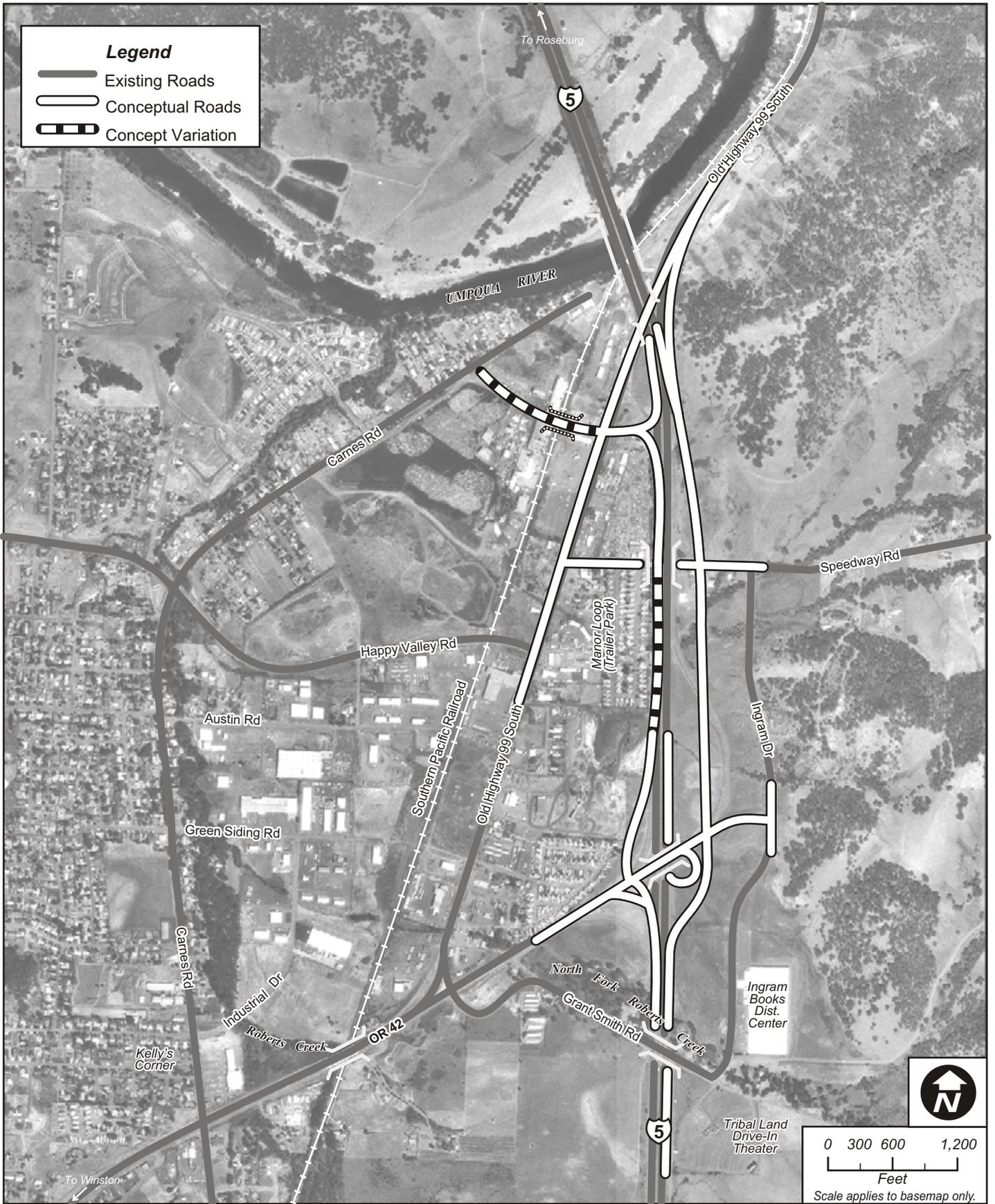
Concept 4

Figure A-5



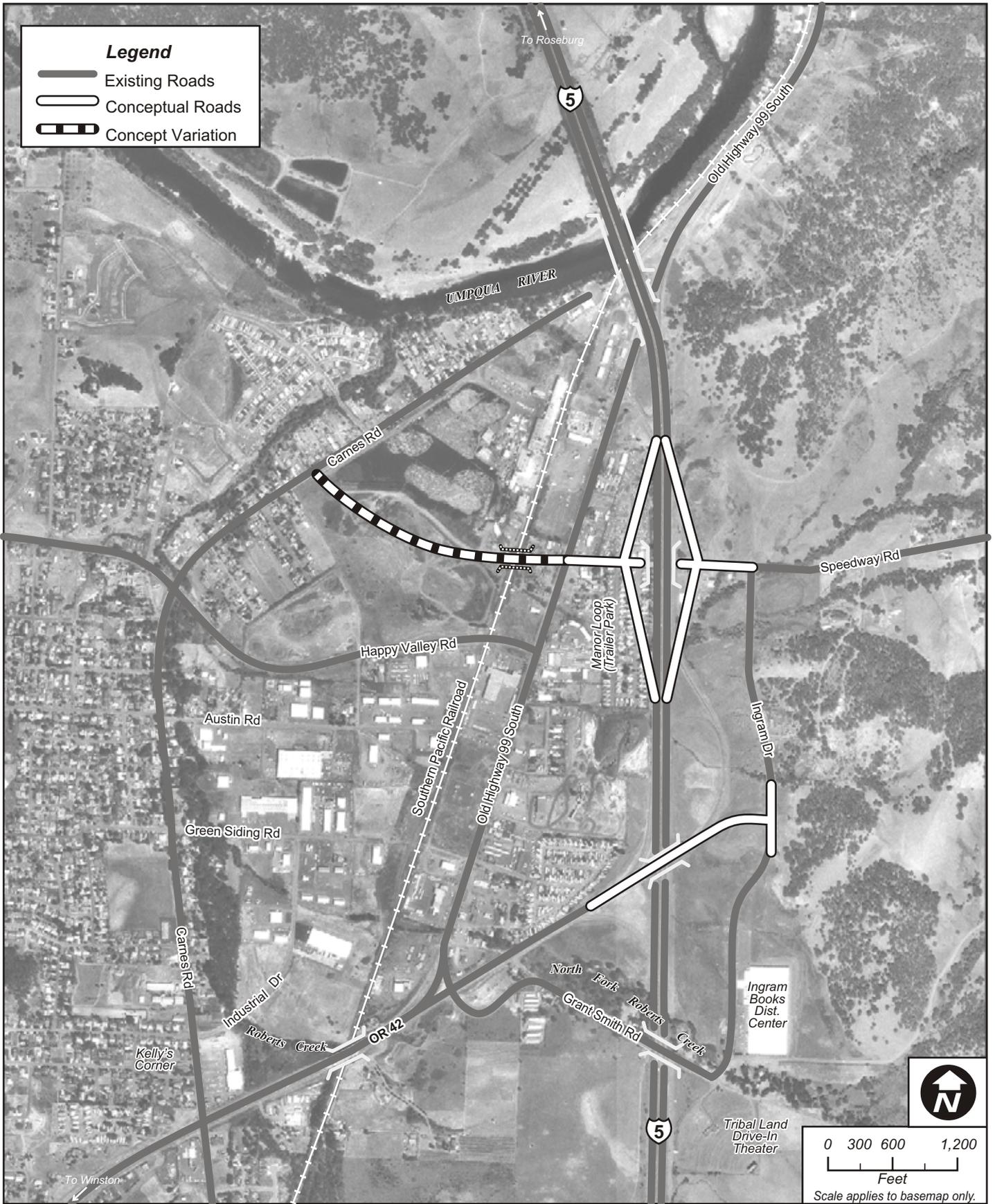
Modified Concept 4

Figure A-6



Concept 5

Figure A-7

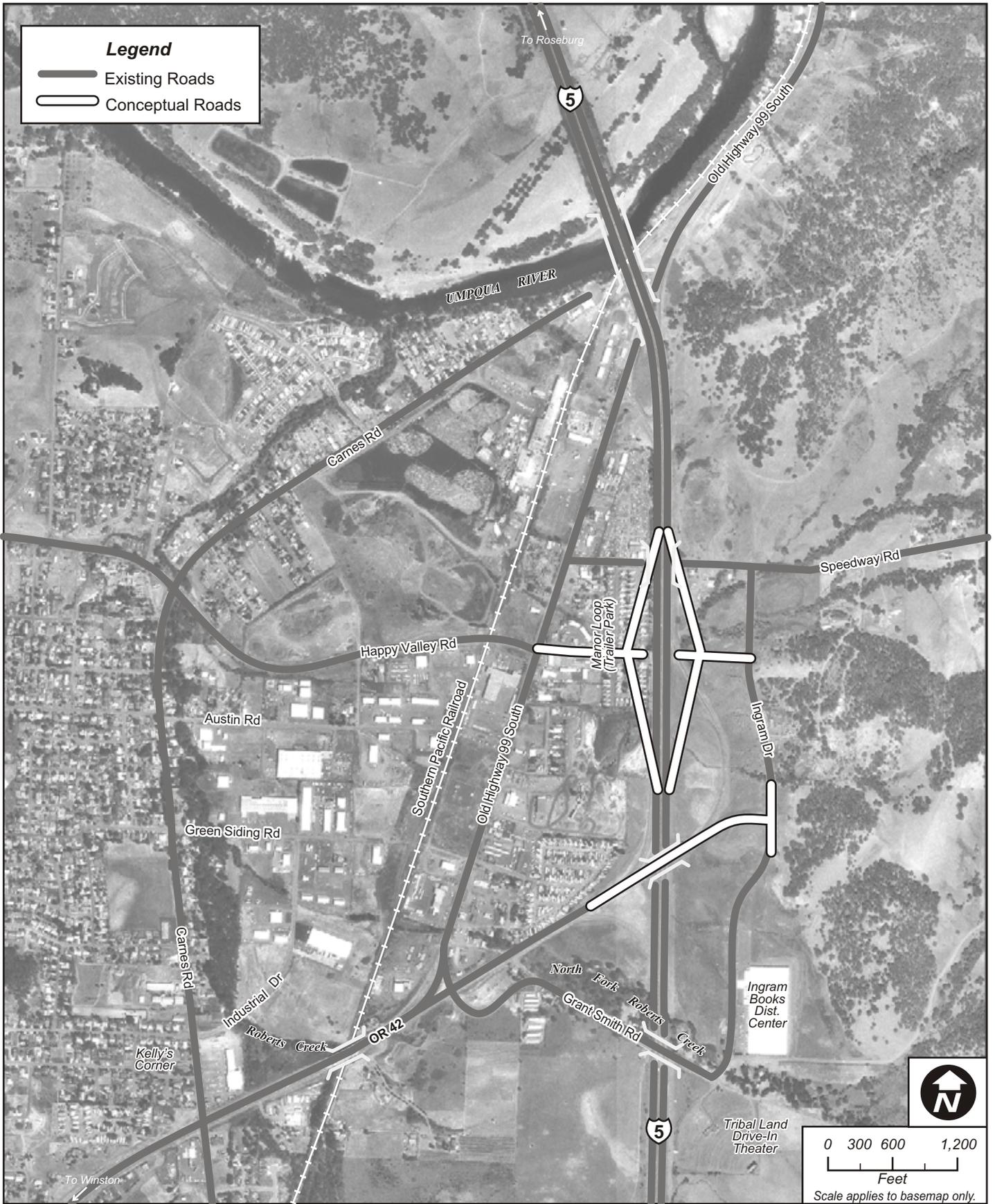


Concept 6



Concept 7

Figure A-9



Concept 8

Figure A-10



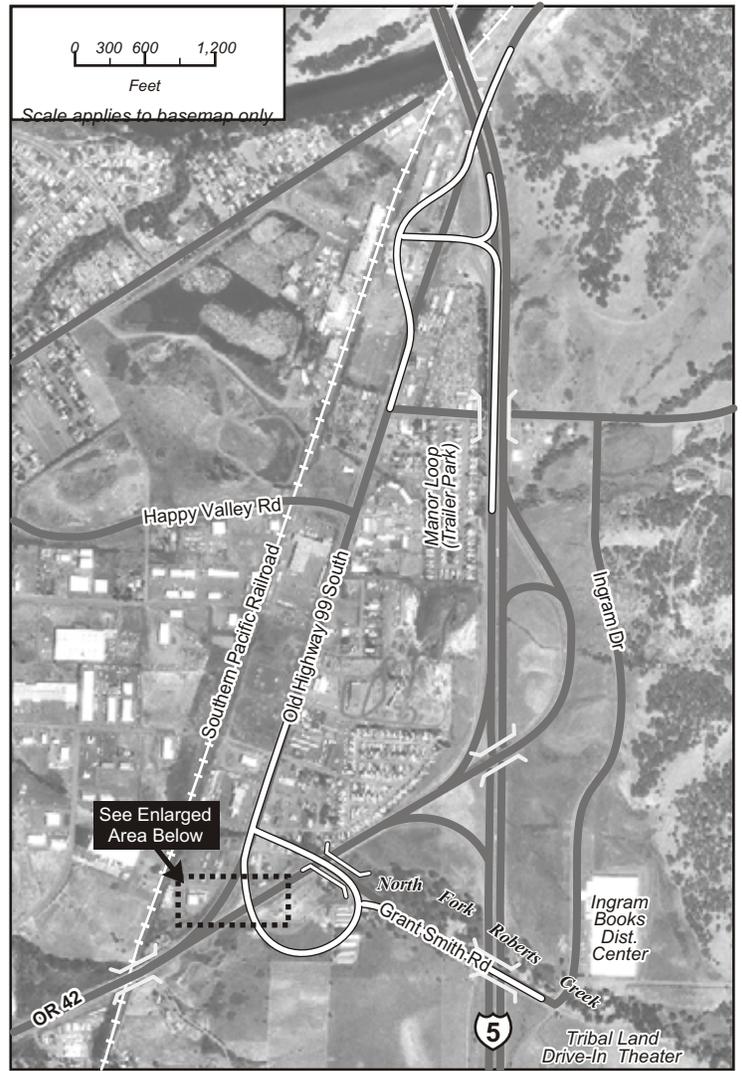
Concept 9

Figure A-11

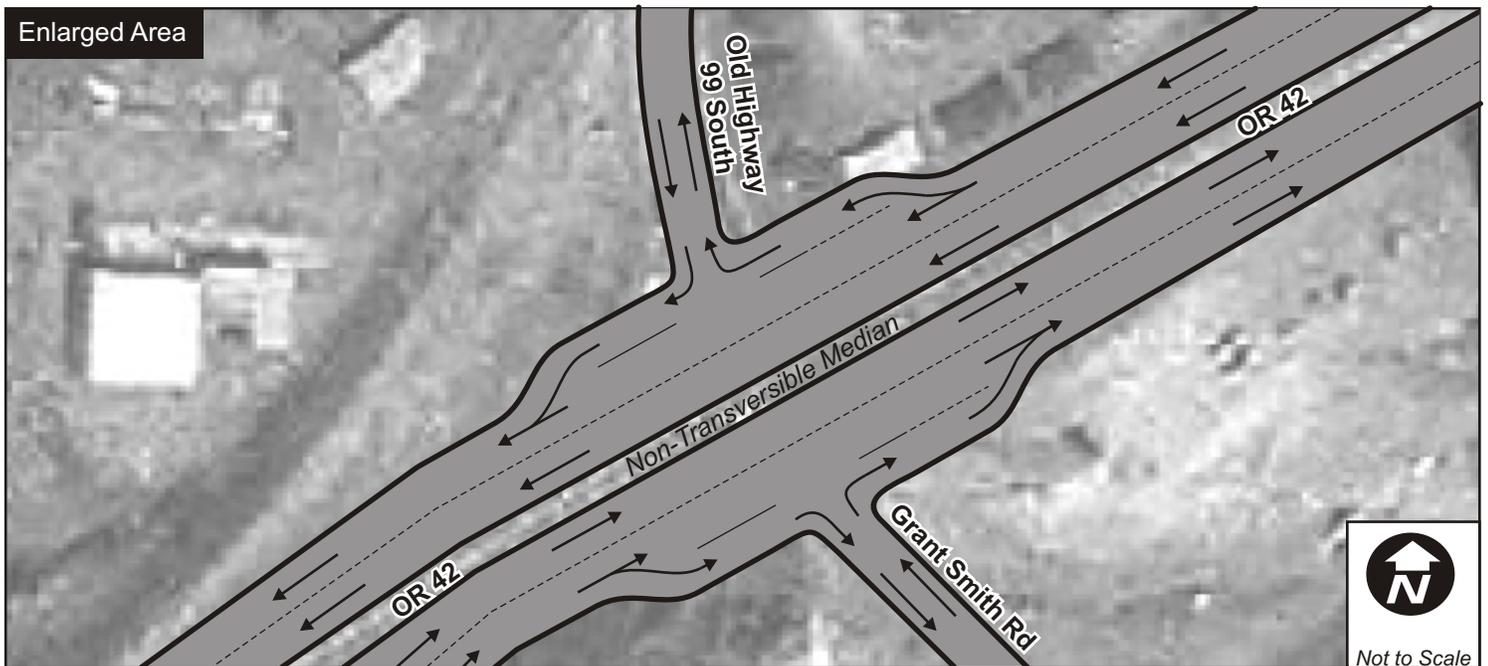
I-5 Interchanges 119 and 120 IAMP



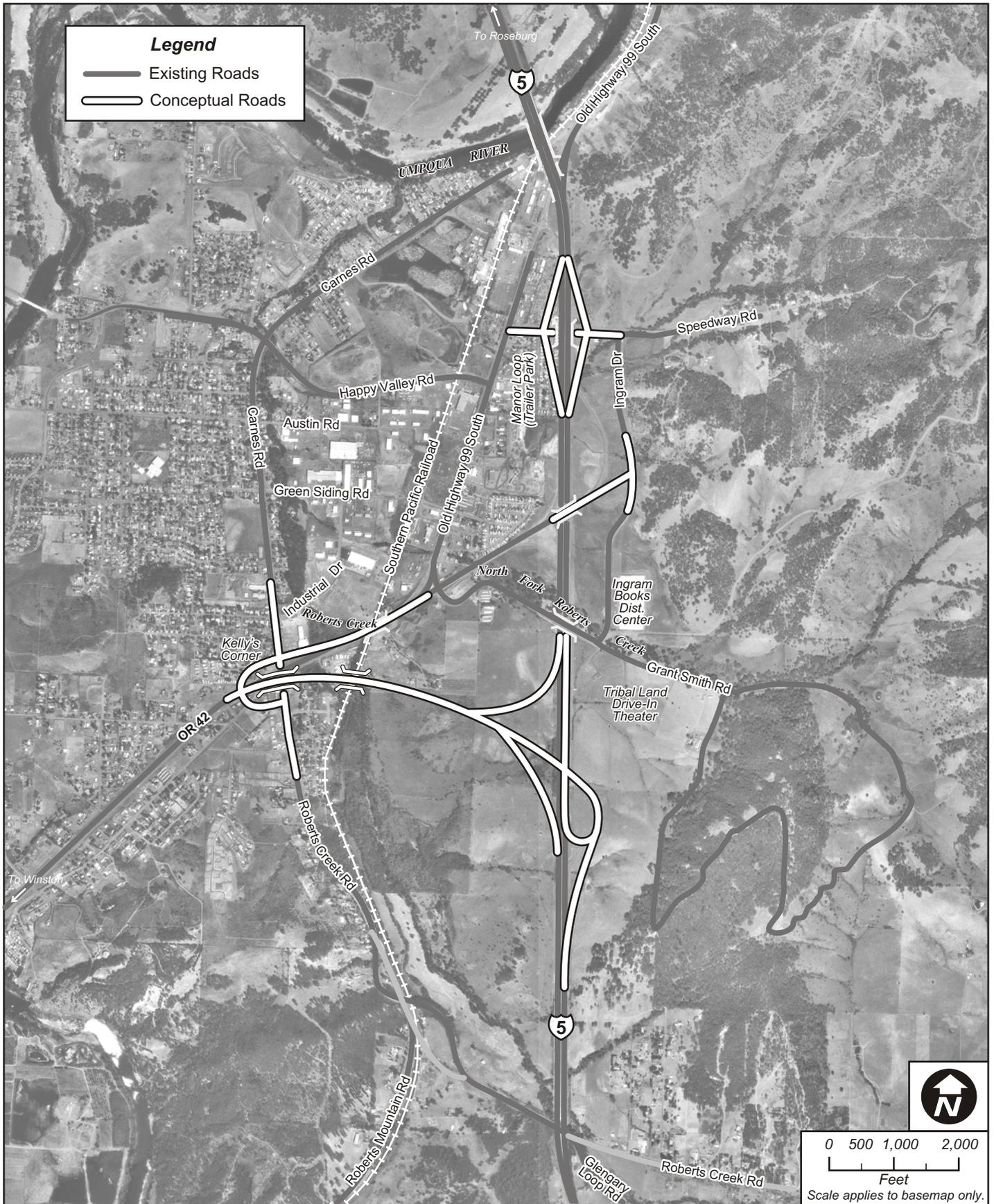
Concept 1b + 10a



Concept 1b + 10b

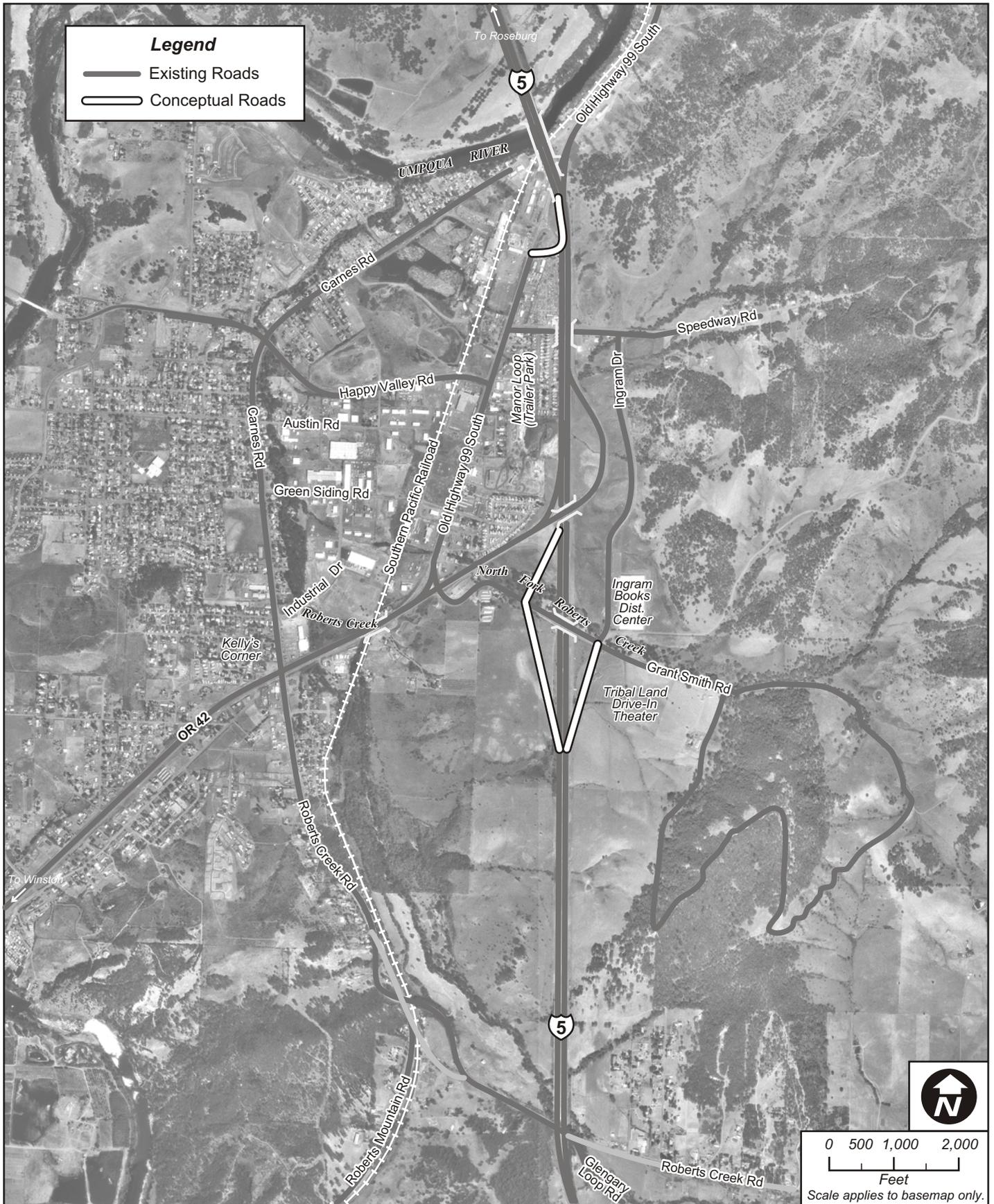


Concept 1b + 10



Concept 11

Figure A-13



Concept 12

Figure A-14

Application of Evaluation Matrix for Selection of Intermediate Interchange and Local Circulation Concepts

To assist in the qualitative evaluation of each of the interchange and local circulation concepts, an evaluation matrix was assembled, with evaluation criteria listed horizontally at the top, and interchange configurations listed vertically on the left. A number between 1 and 5 was assigned to each criteria as applied to each concept. The scoring was advantage based, meaning that a higher benefit resulted in a higher score. The evaluation matrix is shown in the table below.

The two concepts that received the highest scores were subjected to higher levels of quantitative analysis, consisting of detailed future year traffic operations analysis, analysis of basic roadway geometric and right-of-way requirements, analysis of environmental constraints, and planning-level cost estimates. This detailed analysis is intended to provide sufficient data to facilitate a decision for a single Preferred Concept, which will then be incorporated into the Douglas County transportation system plan.

The evaluation matrix is not intended to be rigid and inflexible, but rather it should be viewed as a tool to assist in the qualitative evaluation of each of the concepts. At the same time, it is apparent that those concepts that scored highest are those that the TAC chose to carry forward.

Concept	Evaluation Criteria									
	Transportation Operations	Geometry	Accessibility: Green Area West of I-5	Accessibility: Green Area East of I-5	Accessibility: Retain OR 42/I-5 System Interchange	Cost	Land Use Impacts	Environmental Impacts	Social Impacts	
	5 Solves All Deficiencies 4 Solves Most Deficiencies 3 Solves Some Deficiencies 2 Solves a Few Deficiencies 1 Solves None	5 Solves All Deficiencies 4 Solves Most Deficiencies 3 Solves Some Deficiencies 2 Solves a Few Deficiencies 1 Solves None	5 Large Improvement 4 Modest Improvement 3 Minor Improvement 2 Minimal Improvement 1 No Improvement	5 Large Improvement 4 Modest Improvement 3 Minor Improvement 2 Minimal Improvement 1 No Improvement	5 Retains 0 Does Not Retain	5 Minimal Cost 4 Minor Cost 3 Moderate Cost 2 High Cost 1 Very High Cost	5 Little or No Impact 4 Some Impact 3 Moderate Impact 2 Significant Impact 1 Very Large Impact	5 No Impact 4 Little Impact 3 Moderate Impact 2 Significant Impact 1 Very Large Impact	5 No Impact 4 Little Impact 3 Moderate Impact 2 Significant Impact 1 Very Large Impact	
# 1a (Interchange 120 only) Limited geometric improvements to Interchange 120; signalize ramp terminal; variations include eliminating southbound entrance ramp and/or extending exit ramp to Carnes Road (would require new RR overcrossing structure)	2 Signalized intersection improves intersection operations and reduces queuing on southbound exit ramp.	2 Some improvement in ramp geometry possible, provides additional queue storage, provides additional deceleration length	2 Base option provides no change in accessibility; variation that includes extension to Carnes Road improves accessibility, elimination of southbound entrance ramp diminishes accessibility somewhat	1	5	5 Low cost associated with base option; higher cost associated with RR overcrossing variation; higher cost associated with retaining southbound entrance ramp, which would require rebuilding of Speedway bridge to accommodate added acceleration lane length	5	5	5	32
#1b (Interchange 120 only) Limited geometric improvements to Interchange 120 with Realignment of Old Hwy 99, signalize ramp terminal; variations include eliminating southbound entrance ramp and/or extending exit ramp to Carnes Road (would require new RR overcrossing structure)	2 Signalized intersection improves intersection operations and reduces queuing on southbound exit ramp.	2 Some improvement in ramp geometry possible, provides additional deceleration length provides significantly more queue storage than Option #1a.	2 Base option provides no change in accessibility; variation that includes extension to Carnes Road improves accessibility, elimination of southbound entrance ramp diminishes accessibility somewhat	1	5	4 Moderate cost associated with base option due to realignment of Old Highway 99 and ROW acquisition; higher cost associated with RR overcrossing variation; higher cost associated with retaining southbound entrance ramp, which would require rebuilding of Speedway bridge to accommodate added acceleration lane length	4 Moderate ROW needs, but only affects a few parcels.	5	4 Displaces some businesses and ODOT maintenance yard	29
#2 (Interchange 120 only) Geometric improvements to southbound Interchange 120 ramps; signalize southbound ramp terminal; new northbound I-5 entrance ramp; realigned northbound I-5 exit ramp	2 Signalized intersection improves intersection operations and reduces queuing on southbound exit ramp.	1 <u>Southbound ramps:</u> Some improvement in ramp geometry possible, provides additional deceleration length. <u>Northbound ramps:</u> Grade issues present significant challenges; inadequate interchange spacing to McLain Interchange 121.	3	1	5	2 Significant cost associated with new bridge over S. Umpqua River, ROW acquisition, earthwork	3 Impacts land north of S. Umpqua River, Lindy property	1 Construction of new bridge impacts river and wetland areas, farmland, historic properties	3 Displaces some businesses	21
#3 (Interchange 119 only) Convert Interchange 119 to partial cloverleaf interchange, add northbound auxiliary lane, extend OR 42 to intersect Ingram Road	2	2	2	4 Provides direct access from OR 42 to Ingram Road	0	2 Significant cost associated with new overcrossing at Grant Smith Road to accommodate width needed for new northbound exit ramp and complete reconstruction of interchange	4	4	5	25

Concept	Evaluation Criteria									
	Transportation Operations	Geometry	Accessibility: Green Area West of I-5	Accessibility: Green Area East of I-5	Accessibility: Retain OR 42/I-5 System Interchange	Cost	Land Use Impacts	Environmental Impacts	Social Impacts	
	5 Solves All Deficiencies 4 Solves Most Deficiencies 3 Solves Some Deficiencies 2 Solves a Few Deficiencies 1 Solves None	5 Solves All Deficiencies 4 Solves Most Deficiencies 3 Solves Some Deficiencies 2 Solves a Few Deficiencies 1 Solves None	5 Large Improvement 4 Modest Improvement 3 Minor Improvement 2 Minimal Improvement 1 No Improvement	5 Large Improvement 4 Modest Improvement 3 Minor Improvement 2 Minimal Improvement 1 No Improvement	5 Retains 0 Does Not Retain	5 Minimal Cost 4 Minor Cost 3 Moderate Cost 2 High Cost 1 Very High Cost	5 Little or No Impact 4 Some Impact 3 Moderate Impact 2 Significant Impact 1 Very Large Impact	5 No Impact 4 Little Impact 3 Moderate Impact 2 Significant Impact 1 Very Large Impact	5 No Impact 4 Little Impact 3 Moderate Impact 2 Significant Impact 1 Very Large Impact	
#4 Split diamond interchange, extend OR 42 to intersect Ingram Road; signalize intersection of Speedway Road and Old Highway 99	3	4	5	5	0	2 Significant cost associated with new interchange, frontage roads, ROW	2 Significant ROW acquisition necessary	4	2	27
#5 Half split-diamond interchange with frontage road on east side only. Concept 1 improvements at Interchange 120, diamond configuration on west side of interchange 119.	3	3	4	4	0	1	Requires some ROW acquisition on east side of I-5			15
#6 Tight diamond interchange at Speedway Road, extend OR 42 to intersect Ingram Road	2	3	4	5	0	3	3	4	2	26
#7 SPUI at Speedway Road, extend OR 42 to intersect Ingram Road	2	3	4	5	0	2	3	4	2	25
#8 Tight diamond interchange at Happy Valley Road, extend OR 42 to intersect Ingram Road	2	3	4	5	0	3	3	4	2	26
#9 SPUI at Happy Valley Road, extend OR 42 to intersect Ingram Road	2	3	4	5	0	2	3	4	2	25
#10 Jug-handle interchange at OR 42/Old Highway 99/Grant Smith Road;	3 Mitigates operational problems at intersection of OR 42/Old Highway 99/Grant Smith Road; enhances free-flow operations on OR 42 expressway; could be combined with Options 1a, 1b or 2 to improve geometrics and traffic operations at Interchange 120	3	4 Improved operations at OR 42/Old Highway 99/Grant Smith Road decreases delay and improves access to Green	1	5 Jug-handle decreases delay for through movements to/from Winston on OR 42	4 New overcrossing structure required	5	5	5	35

Concept	Evaluation Criteria									
	Transportation Operations	Geometry	Accessibility: Green Area West of I-5	Accessibility: Green Area East of I-5	Accessibility: Retain OR 42/I-5 System Interchange	Cost	Land Use Impacts	Environmental Impacts	Social Impacts	
	5 Solves All Deficiencies 4 Solves Most Deficiencies 3 Solves Some Deficiencies 2 Solves a Few Deficiencies 1 Solves None	5 Solves All Deficiencies 4 Solves Most Deficiencies 3 Solves Some Deficiencies 2 Solves a Few Deficiencies 1 Solves None	5 Large Improvement 4 Modest Improvement 3 Minor Improvement 2 Minimal Improvement 1 No Improvement	5 Large Improvement 4 Modest Improvement 3 Minor Improvement 2 Minimal Improvement 1 No Improvement	5 Retains 0 Does Not Retain	5 Minimal Cost 4 Minor Cost 3 Moderate Cost 2 High Cost 1 Very High Cost	5 Little or No Impact 4 Some Impact 3 Moderate Impact 2 Significant Impact 1 Very Large Impact	5 No Impact 4 Little Impact 3 Moderate Impact 2 Significant Impact 1 Very Large Impact	5 No Impact 4 Little Impact 3 Moderate Impact 2 Significant Impact 1 Very Large Impact	
#11 Relocate Interchange 119 to south, new diamond interchange at Speedway Road, jug-handle interchange at OR 42/Carnes Road/Roberts Creek Road	5 Mitigates operational problems at intersections of OR 42 at Old Highway 99/Grant Smith Road and OR 42 at Carnes Road/Roberts Creek Road; enhances free-flow operations on OR 42 expressway.	5	5	5	5 Free-flow operations at intersections of OR 42 at Carnes/Roberts Creek and Old Hwy 99/Grant Smith will decrease delay on the OR 42 expressway, but new interchange will require moderate out-of-direction travel.	1 Very high costs associated with expressway alignment, new service interchange, several new overcrossings, cuts into hillside	1 Requires significant ROW acquisition	1 Significant estimated environmental impacts due to the extent of new road building on undeveloped land	1 Significant displacement of homes and businesses	29
#12 New partial interchange at Grant Smith Road, modifications to Interchanges 119 and 120	2	3 Horizontal curvature on Grant Smith Road not adequate for interchange crossroad, would need to be realigned.	3	4	0	2	3	3	3	23

Appendix B

Concept Cost Estimates

SUMMARY - BID SCHEDULE - CONCEPTUAL COST ESTIMATE

Intchg. 119 & 120 Modified Concept 10

SECTION	Based on drawing alt 10a 1"=1000' minus intchg.	REFERENCE NAME/PHONE	COUNTY	SHEET
Project Name		David Evans and Associates (503) 223-6663	Douglas	1 of 1
KIND OF WORK		LENGTH	DATE	NAME
Grading, Structure, Paving, Signal, Illumination		16,557	Mar. 2007	Mike Hickey

NO.	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL	Section Totals
	Mobilization and Traffic Control					\$ 3,200,000
	Mobilization	LS	1	\$ 2,000,000	\$ 2,000,000	
	Temp. Protection and Direction of Traffic	LS	1	\$ 1,200,000	\$ 1,200,000	
	Roadwork				\$0	\$ 3,400,000
	Construction Surveying Work	LS	1	\$ 400,000	\$ 400,000	
	Clearing and Grubbing	LS	1	\$ 1,000,000	\$ 1,000,000	
	Embankment in Place	yd3	50,000	\$ 20	\$ 1,000,000	
	Retaining Wall	ft2	10,000	\$ 100	\$ 1,000,000	
	Drainage and Sewers				\$0	\$ 1,042,909
	Drainage incl. WQ	ft2	834,327	\$ 1.25	\$ 1,042,909	
	Bridge	ea				\$ 7,500,000
	Br. Costs 2ea.@100'x250'	ft2	50,000	\$150	\$ 7,500,000	
					\$0	
	Bases				\$0	\$ 3,371,272
	Aggregate Base (16" depth)	ton	82,196	\$ 40	\$ 3,287,840	
	Subgrade Stabilization	ft2	83,432	\$ 1	\$ 83,432	
	Wearing Surface					\$ 7,606,050
	Asphalt Concrete (8" depth)	ton	176,242	\$ 25	\$ 4,406,050	
	Sidewalk and ramps	yd2	160,000	\$ 20	\$ 3,200,000	
	Permanent Traffic Control and Guidance Devices				\$0	\$ 4,255,000
	Concrete Barrier	ft	1,000	\$ 30	\$ 30,000	
	Guard Rail	ft	5,000	\$ 25	\$ 125,000	
	Illumination	each	750	\$ 4,000	\$ 3,000,000	
	Signal	each	3	\$ 200,000	\$ 600,000	
	Striping	LS	1	\$ 500,000	\$ 500,000	
	Right-of-Way Development and Control					\$ 500,000
	Fence, Type 1	ft	2,000	\$ 5	\$ 10,000	
	Deciduous Trees, 2" Caliper	each	1,000	\$ 350	\$ 350,000	
	Shrubs, No.1 Container	each	2,000	\$ 20	\$ 40,000	
	Irrigation	LS	1	\$ 100,000	\$ 100,000	
	Subtotal:				\$ 30,875,231	
	50% - Engineering Contingencies:				\$ 15,437,600	
	Right of Way	ft2	150,000	\$50	\$ 7,500,000	
	Utilities Private	ft	10,000	\$50	\$ 500,000	
	Water	ft	8,000	\$100	\$ 800,000	
	Sewer	ft	8,000	\$100	\$ 800,000	
	Subtotal: 2007 value				\$ 55,912,831	
	cumulative inflation @ approx. 5% per year	years	10	\$2,795,642	\$ 27,956,415	
	Program Cost:				\$ 83,869,246	
	99E Realignment at Intchg 120	%	appx. 50% of total	50%	\$41,934,623	
	Grant Smith Jug Handle	%	appx. 25% of total	25%	\$20,967,312	
	Kellys Corner Jug Handle	%	appx. 25% of total	25%	\$20,967,312	

SUMMARY - BID SCHEDULE - CONCEPTUAL COST ESTIMATE

Intchg. 119 & 120 Modified Concept 11

SECTION	Based on drawing alt 11 1"=1400'	REFERENCE NAME/PHONE	COUNTY	SHEET
Project Name		David Evans and Associates (503) 223-6663	Douglas	1 of 1
KIND OF WORK		LENGTH	DATE	NAME
Grading, Structure, Paving, Signal, Illumination		43,704'	Mar. 2007	Mike Hickey

NO.	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL	Section Totals
	Mobilization and Traffic Control					\$ 7,000,000
	Mobilization	LS	1	\$ 4,000,000	\$ 4,000,000	
	Temp. Protection and Direction of Traffic	LS	1	\$ 3,000,000	\$ 3,000,000	
	Roadwork				\$0	\$ 8,400,000
	Construction Surveying Work	LS	1	\$ 400,000	\$ 400,000	
	Clearing and Grubbing	LS	1	\$ 1,000,000	\$ 1,000,000	
	Embankment in Place	yd3	100,000	\$ 20	\$ 2,000,000	
	Retaining Wall	ft2	50,000	\$ 100	\$ 5,000,000	
	Drainage and Sewers				\$0	\$ 2,230,569
	Drainage incl. WQ	ft2	1,784,455	\$ 1.25	\$ 2,230,569	
	Bridge	ea				\$ 15,000,000
	Br. Costs 4ea.@100'x250'	ft2	100,000	\$150	\$ 15,000,000	
					\$0	
	Bases				\$0	\$ 7,210,485
	Aggregate Base (16" depth)	ton	175,801	\$ 40	\$ 7,032,040	
	Subgrade Stabilization	ft2	178,445	\$ 1	\$ 178,445	
	Wearing Surface					\$ 6,406,050
	Asphalt Concrete (8" depth)	ton	176,242	\$ 25	\$ 4,406,050	
	Sidewalk and ramps	yd2	100,000	\$ 20	\$ 2,000,000	
	Permanent Traffic Control and Guidance Devices				\$0	\$ 6,400,000
	Concrete Barrier	ft	20,000	\$ 30	\$ 600,000	
	Guard Rail	ft	8,000	\$ 25	\$ 200,000	
	Illumination	each	1,000	\$ 4,000	\$ 4,000,000	
	Signal	each	3	\$ 200,000	\$ 600,000	
	Striping	LS	1	\$ 1,000,000	\$ 1,000,000	
	Right-of-Way Development and Control					\$ 515,000
	Fence, Type 1	ft	5,000	\$ 5	\$ 25,000	
	Deciduous Trees, 2" Caliper	each	1,000	\$ 350	\$ 350,000	
	Shrubs, No.1 Container	each	2,000	\$ 20	\$ 40,000	
	Irrigation	LS	1	\$ 100,000	\$ 100,000	
	Subtotal:				\$ 53,162,104	
	50% - Engineering Contingencies:				\$ 26,581,100	
	Right of Way	ft2	200,000	\$30	\$ 6,000,000	
	Utilities Private	ft	10,000	\$50	\$ 500,000	
	Water	ft	5,000	\$100	\$ 500,000	
	Sewer	ft	5,000	\$100	\$ 500,000	
	Subtotal: 2007 Value				\$ 87,243,204	
	cumulative inflation @ approx. 5% per year	years	10	\$4,362,160	\$ 43,621,602	
	Program Cost:				\$ 130,864,806	
	North Intchg. Area Std. Diamond	%	appx. 50% of total	50%	\$65,432,403	
	Kellys Corner Folded Diamond	%	appx. 25% of total	25%	\$32,716,201	
	Intchg. 118 Folded Diamond	%	appx. 25% of total	25%	\$32,716,201	

SUMMARY - BID SCHEDULE - CONCEPTUAL COST ESTIMATE
PREFERRED ALTERNATIVE: LEFT TURN LANES AT OR42/ CARNES ROAD INTERSECTION

SECTION	REFERENCE NAME/PHONE	COUNTY	SHEET			
Project Name	David Evans and Associates (503) 223-6663	Douglas	1 of 1			
KIND OF WORK	LENGTH	DATE	NAME			
Grading, Structure, Paving, Signal, Illumination		8/4/2007	Scott Dreher			
NO.	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL	Section Totals
	Mobilization and Traffic Control					\$ 400,000
	Mobilization	LS	1	\$ 250,000	\$ 250,000	
	Temp. Protection and Direction of Traffic	LS	1	\$ 150,000	\$ 150,000	
	Roadwork					\$ 185,360
	Construction Surveying Work	LS	1	\$ 25,000	\$ 25,000	
	Clearing and Grubbing	LS	1	\$ 40,000	\$ 40,000	
	Embankment in Place	yd3	6,018	\$ 20	\$ 120,360	
	Retaining Wall	ft2	0	\$ 100	\$ -	
	Drainage and Sewers					\$ 125,375
	Drainage incl. WQ	ft2	100,300	\$ 1.25	\$ 125,375	
	Bases					\$ 442,000
	Aggregate Base (16" depth)	ton	11,000	\$ 40	\$ 440,000	
	Subgrade Stabilization	ft2	2,000	\$ 1	\$ 2,000	
	Wearing Surface					\$ 491,200
	Asphalt Concrete (8" depth)	ton	5,200	\$ 80	\$ 416,000	
	Sidewalk and ramps	yd2	3,760	\$ 20	\$ 75,200	
	Permanent Traffic Control and Guidance Devices					\$ 228,000
	Concrete Barrier	ft	0	\$ 30	\$ -	
	Guard Rail	ft	0	\$ 25	\$ -	
	Illumination	each	32	\$ 4,000	\$ 128,000	
	Signal	each	0	\$ 220,000	\$ -	
	Signal Modification	each	1	\$ 80,000	\$ 80,000	
	Striping	LS	1	\$ 20,000	\$ 20,000	
	Right-of-Way Development and Control					\$ -
	Fence, Type 1	ft	0	\$ 5	\$ -	
	Deciduous Trees, 2" Caliper	each	0	\$ 350	\$ -	
	Shrubs, No.1 Container	each	0	\$ 20	\$ -	
	Irrigation	LS	0	\$ 25,000	\$ -	
	Subtotal:				\$ 1,871,935	
	50% - Engineering Contingencies:				\$ 936,000	
	Right of Way	ft2	3,000	\$30	\$ 90,000	
	Subtotal: 2007 Value				\$ 2,897,935	
	cumulative inflation @ approx. 5% per year	years	10	\$144,897	\$ 1,448,968	
	Program Cost:				\$ 4,346,903	
	North Intchg. Area Std. Diamond	%	appx. 50% of total	50%	\$2,173,451	
	Kellys Corner Folded Diamond	%	appx. 25% of total	25%	\$1,086,726	
	Intchg. 118 Folded Diamond	%	appx. 25% of total	25%	\$1,086,726	

SUMMARY - BID SCHEDULE - CONCEPTUAL COST ESTIMATE
PREFERRED ALTERNATIVE: WIDEN SPEEDWAY ROAD BETWEEN OLD HIGHWAY 99 AND INGRAM ROAD

SECTION	REFERENCE NAME/PHONE	COUNTY	SHEET			
Project Name	David Evans and Associates (503) 223-6663	Douglas	1 of 1			
KIND OF WORK	LENGTH	DATE	NAME			
Grading, Structure, Paving, Signal, Illumination		8/4/2007	Scott Dreher			
NO.	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL	Section Totals
	Mobilization and Traffic Control					\$ 125,000
	Mobilization	LS	1	\$ 75,000	\$ 75,000	
	Temp. Protection and Direction of Traffic	LS	1	\$ 50,000	\$ 50,000	
				\$ 3		
	Roadwork					\$ 58,560
	Construction Surveying Work	LS	1	\$ 15,000	\$ 15,000	
	Clearing and Grubbing	LS	1	\$ 15,000	\$ 15,000	
	Embankment in Place	yd3	1,428	\$ 20	\$ 28,560	
	Retaining Wall	ft2	0	\$ 100	\$ -	
	Drainage and Sewers					\$ 29,750
	Drainage incl. WQ	ft2	23,800	\$ 1.25	\$ 29,750	
	Bases					\$ 122,000
	Aggregate Base (16" depth)	ton	3,000	\$ 40	\$ 120,000	
	Subgrade Stabilization	ft2	2,000	\$ 1	\$ 2,000	
	Wearing Surface					\$ 136,000
	Asphalt Concrete (8" depth)	ton	1,400	\$ 80	\$ 112,000	
	Sidewalk and ramps	yd2	1,200	\$ 20	\$ 24,000	
	Permanent Traffic Control and Guidance Devices					\$ 68,000
	Concrete Barrier	ft	0	\$ 30	\$ -	
	Guard Rail	ft	0	\$ 25	\$ -	
	Illumination	each	17	\$ 4,000	\$ 68,000	
	Signal	each	0	\$ 220,000	\$ -	
	Signal Modification	each	0	\$ 80,000	\$ -	
	Striping	LS	0	\$ 75,000	\$ -	
	Right-of-Way Development and Control					\$ -
	Fence, Type 1	ft	0	\$ 5	\$ -	
	Deciduous Trees, 2" Caliper	each	0	\$ 350	\$ -	
	Shrubs, No.1 Container	each	0	\$ 20	\$ -	
	Irrigation	LS	0	\$ 25,000	\$ -	
	Subtotal:				\$ 539,310	
	50% - Engineering Contingencies:				\$ 269,700	
	Right of Way	ft2	3,000	\$30	\$ 90,000	
	Subtotal: 2007 Value				\$ 899,010	
	cumulative inflation @ approx. 5% per year	years	10	\$44,951	\$ 449,505	
	Program Cost:				\$ 1,348,515	
	North Intchg. Area Std. Diamond	%	appx. 50% of total	50%	\$674,258	
	Kellys Corner Folded Diamond	%	appx. 25% of total	25%	\$337,129	
	Intchg. 118 Folded Diamond	%	appx. 25% of total	25%	\$337,129	

SUMMARY - BID SCHEDULE - CONCEPTUAL COST ESTIMATE
PREFERRED ALTERNATIVE: WIDEN OLD HIGHWAY 99 BETWEEN IC 120 AND HAPPY VALLEY ROAD

SECTION	REFERENCE NAME/PHONE	COUNTY	SHEET			
Project Name	David Evans and Associates (503) 223-6663	Douglas	1 of 1			
KIND OF WORK	LENGTH	DATE	NAME			
Grading, Structure, Paving, Signal, Illumination		8/4/2007	Scott Dreher			
NO.	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL	Section Totals
	Mobilization and Traffic Control					\$ 250,000
	Mobilization	LS	1	\$ 150,000	\$ 150,000	
	Temp. Protection and Direction of Traffic	LS	1	\$ 100,000	\$ 100,000	
	Roadwork					\$ 160,200
	Construction Surveying Work	LS	1	\$ 15,000	\$ 15,000	
	Clearing and Grubbing	LS	1	\$ 30,000	\$ 30,000	
	Embankment in Place	yd3	5,760	\$ 20	\$ 115,200	
	Retaining Wall	ft2	0	\$ 100	\$ -	
	Drainage and Sewers					\$ 120,000
	Drainage incl. WQ	ft2	96,000	\$ 1.25	\$ 120,000	
	Bases					\$ 422,000
	Aggregate Base (16" depth)	ton	10,500	\$ 40	\$ 420,000	
	Subgrade Stabilization	ft2	2,000	\$ 1	\$ 2,000	
	Wearing Surface					\$ 400,000
	Asphalt Concrete (8" depth)	ton	5,000	\$ 80	\$ 400,000	
	Sidewalk and ramps	yd2	0	\$ 20	\$ -	
	Permanent Traffic Control and Guidance Devices					\$ 25,000
	Concrete Barrier	ft	0	\$ 30	\$ -	
	Guard Rail	ft	0	\$ 25	\$ -	
	Illumination	each	0	\$ 4,000	\$ -	
	Signal	each	0	\$ 220,000	\$ -	
	Signal Modification	each	0	\$ 80,000	\$ -	
	Striping	LS	1	\$ 25,000	\$ 25,000	
	Right-of-Way Development and Control					\$ 5,000
	Fence, Type 1	ft	1,000	\$ 5	\$ 5,000	
	Deciduous Trees, 2" Caliper	each	0	\$ 350	\$ -	
	Shrubs, No.1 Container	each	0	\$ 20	\$ -	
	Irrigation	LS	0	\$ 25,000	\$ -	
	Subtotal:				\$ 1,382,200	
	50% - Engineering Contingencies:				\$ 691,100	
	Right of Way	ft2	3,000	\$30	\$ 90,000	
	Subtotal: 2007 Value				\$ 2,163,300	
	cumulative inflation @ approx. 5% per year	years	10	\$108,165	\$ 1,081,650	
	Program Cost:				\$ 3,244,950	
	North Intchg. Area Std. Diamond	%	appx. 50% of total	50%	\$1,622,475	
	Kellys Corner Folded Diamond	%	appx. 25% of total	25%	\$811,238	
	Intchg. 118 Folded Diamond	%	appx. 25% of total	25%	\$811,238	

SUMMARY - BID SCHEDULE - CONCEPTUAL COST ESTIMATE
PREFERRED ALTERNATIVE: WIDEN OR42 AT I-5 BRIDGE

SECTION	REFERENCE NAME/PHONE	COUNTY	SHEET			
Project Name	David Evans and Associates (503) 223-6663	Douglas	1 of 1			
KIND OF WORK	LENGTH	DATE	NAME			
Grading, Structure, Paving, Signal, Illumination		8/4/2007	Scott Dreher			
NO.	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL	Section Totals
	Mobilization and Traffic Control					\$ 125,000
	Mobilization	LS	1	\$ 75,000	\$ 75,000	
	Temp. Protection and Direction of Traffic	LS	1	\$ 50,000	\$ 50,000	
	Roadwork				\$0	\$ 190,000
	Construction Surveying Work	LS	1	\$ 15,000	\$ 15,000	
	Clearing and Grubbing	LS	1	\$ 15,000	\$ 15,000	
	Embankment in Place	yd3	8,000	\$ 20	\$ 160,000	
	Retaining Wall	ft2	0	\$ 100	\$ -	
	Drainage and Sewers				\$0	\$ 77,000
	Drainage incl. WQ	ft2	61,600	\$ 1.25	\$ 77,000	
	Bases				\$0	\$ 134,000
	Aggregate Base (16" depth)	ton	3,300	\$ 40	\$ 132,000	
	Subgrade Stabilization	ft2	2,000	\$ 1	\$ 2,000	
	Wearing Surface					\$ 264,000
	Asphalt Concrete (8" depth)	ton	3,300	\$ 80	\$ 264,000	
	Sidewalk and ramps	yd2	0	\$ 20	\$ -	
	Permanent Traffic Control and Guidance Devices				\$0	\$ 46,000
	Concrete Barrier	ft	200	\$ 30	\$ 6,000	
	Guard Rail	ft	1,000	\$ 25	\$ 25,000	
	Illumination	each	0	\$ 4,000	\$ -	
	Signal	each	0	\$ 220,000	\$ -	
	Signal Modification	each	0	\$ 80,000	\$ -	
	Striping	LS	1	\$ 15,000	\$ 15,000	
	Right-of-Way Development and Control					\$ -
	Fence, Type 1	ft	0	\$ 5	\$ -	
	Deciduous Trees, 2" Caliper	each	0	\$ 350	\$ -	
	Shrubs, No.1 Container	each	0	\$ 20	\$ -	
	Irrigation	LS	0	\$ 50,000	\$ -	
	Subtotal:				\$ 836,000	
	50% - Engineering Contingencies:				\$ 418,000	
	Right of Way	ft2	3,000	\$30	\$ 90,000	
	Subtotal: 2007 Value				\$ 1,344,000	
	cumulative inflation @ approx. 5% per year	years	10	\$67,200	\$ 672,000	
	Program Cost:				\$ 2,016,000	
	North Intchg. Area Std. Diamond	%	appx. 50% of total	50%	\$1,008,000	
	Kellys Corner Folded Diamond	%	appx. 25% of total	25%	\$504,000	
	Intchg. 118 Folded Diamond	%	appx. 25% of total	25%	\$504,000	

SUMMARY - BID SCHEDULE - CONCEPTUAL COST ESTIMATE
PREFERRED ALTERNATIVE: TRAFFIC SIGNAL AT INTERCHANGE 120

SECTION	REFERENCE NAME/PHONE	COUNTY	SHEET			
Project Name	David Evans and Associates (503) 223-6663	Douglas	1 of 1			
KIND OF WORK	LENGTH	DATE	NAME			
Grading, Structure, Paving, Signal, Illumination		8/4/2007	Scott Dreher			
NO.	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL	Section Totals
	Mobilization and Traffic Control					\$ 70,000
	Mobilization	LS	1	\$ 40,000	\$ 40,000	
	Temp. Protection and Direction of Traffic	LS	1	\$ 30,000	\$ 30,000	
	Roadwork				\$0	\$ 6,000
	Construction Surveying Work	LS	1	\$ 5,000	\$ 5,000	
	Clearing and Grubbing	LS	1	\$ 1,000	\$ 1,000	
	Embankment in Place	yd3	0	\$ 20	\$ -	
	Retaining Wall	ft2	0	\$ 100	\$ -	
	Drainage and Sewers				\$0	\$ -
	Drainage incl. WQ	ft2	0	\$ 1.25	\$ -	
	Bases				\$0	\$ -
	Aggregate Base (16" depth)	ton	0	\$ 40	\$ -	
	Subgrade Stabilization	ft2	0	\$ 1	\$ -	
	Wearing Surface					\$ -
	Asphalt Concrete (8" depth)	ton	0	\$ 80	\$ -	
	Sidewalk and ramps	yd2	0	\$ 20	\$ -	
	Permanent Traffic Control and Guidance Devices				\$0	\$ 220,000
	Concrete Barrier	ft	0	\$ 30	\$ -	
	Guard Rail	ft	0	\$ 25	\$ -	
	Illumination	each	0	\$ 4,000	\$ -	
	Signal	each	1	\$ 220,000	\$ 220,000	
	Signal Modification	each	0	\$ 80,000	\$ -	
	Striping	LS	0	\$ 75,000	\$ -	
	Right-of-Way Development and Control					\$ -
	Fence, Type 1	ft	0	\$ 5	\$ -	
	Deciduous Trees, 2" Caliper	each	0	\$ 350	\$ -	
	Shrubs, No.1 Container	each	0	\$ 20	\$ -	
	Irrigation	LS	0	\$ 50,000	\$ -	
	Subtotal:				\$ 296,000	
	50% - Engineering Contingencies:				\$ 148,000	
	Right of Way	ft2	0	\$30	\$ -	
	Subtotal: 2007 Value				\$ 444,000	
	cumulative inflation @ approx. 5% per year	years	10	\$22,200	\$ 222,000	
	Program Cost:				\$ 666,000	
	North Intchg. Area Std. Diamond	%	appx. 50% of total	50%	\$333,000	
	Kellys Corner Folded Diamond	%	appx. 25% of total	25%	\$166,500	
	Intchg. 118 Folded Diamond	%	appx. 25% of total	25%	\$166,500	

Appendix C

OR 42 Expressway Upgrade Project Summary Report

**Region 3
2008-2011 Construction STIP
Modernization Project Criteria Summary Report**

Contact Person: Mark Usselman

Phone Number: 541-396-3707

Project Name: OR 42 Expressway Upgrade

Key Number: 15006

Project Location: OR 42 (East of S. Umpqua River) in Green

Total Estimated Project Cost:	\$1,200,000
PE:	\$ 150,000
ROW:	\$ 150,000
Utilities:	\$ 50,000
Construction:	\$ 850,000

Project Description: Construct a signal on OR 42 at Rolling Hills Road; Construct a Necessary Local street; Close two street connections and eliminate private access.

Project Eligibility

Consistency with existing plans: The project is contained in the OR 42 Corridor Study and the Douglas County TSP.

Consistency with OHP Policy 1G, Action 1G.1: The project is the minimum necessary to relieve existing congestion issues on US 42.

Additional ACT Project Eligibility Criteria:

Does the project provide additional capacity on a state highway? The project is expected to add increased capacity on OR 42. The new frontage road (Necessary Local) will relocate a number of driveways. Two street connections will also be closed. With Rolling Hills constructed and signalized, it will improve traffic and safety operations at the Carnes Road intersection with OR 42.

Is the project located on a state highway, or on a local county or city arterial connecting to and supporting a state highway (ORS 366.507)? The project is located OR 42, a statewide freight expressway.

Can the project be ready for bid by September 2011? The project will be ready for bid by 2011.

Project Prioritization

Project readiness and milestones completed: The project has been in plans for decades. It has been included in the OR 42 Corridor Plan to improve circulation in Green and operations on the highway. It has also been included in the Green Unincorporated Area TSP and the Douglas County TSP.

Support of OHP policies: The project meets the policies as outlined in the Oregon Highway Plan. More detail is shown under “additional ACT criteria.”

Support of freight mobility: This project is located on a state freight route and on a designated expressway. The project will help to move local traffic off the highway and onto local routes.

Leverage of other funds and benefits: Douglas County will contribute all funds in excess of \$1 million. Total estimated cost is \$1.2 million.

Support of additional ACT criteria: see below

Preservation of Transportation Facilities:

The project will encourage local traffic to use the signalized intersections. Access management will be employed to build additional capacity into the system.

Quality Development Objectives:

This area is located within the Green Urban Unincorporated Area and meets each of the Quality Development Objectives established by the Governor.

Economic Opportunity:

The improvements will allow enhanced access to the highway. The reduction in access points will help to improve safety and reduce travel time from the resulting delays.

Provide Environmentally- Sensitive Transportation Options:

The project will cross a local drainage ditch at locations where culverts already exist. There are no anticipated impacts to wetlands or water bodies.

Improves Safety:

As the Green area continues to grow, additional access to OR 42 is essential. Currently all areas between Carnes and the S. Umpqua River (over a mile away) must use the Carnes Road intersection. With the completion of Rolling Hills Road and a signal, the traffic may be more easily split between Carnes and Rolling Hills allowing for improved operations and safety at Carnes. Outside of this improvement, a grade separated interchange at Carnes is the only other solution. This improvement will lessen that need and should improve an existing SPIS site (top 10%) within the Region.

Conditions of Approval: 1) Douglas County to design and construct the project, 2) Douglas County to provide all funds in excess of \$1million necessary to complete the project, 3) Douglas County to close Jackie and Heatherwood Lane, and 4) Douglas

County to construct a Necessary Local Street to remove private access between Rolling Hills Road and Jackie Lane.

Appendix D
Green Area Trip Budget Overlay District

Trip Budget Overlay District

This section describes the rationale and approach for developing a trip budget overlay district for the Green UUA as a means to protect the function of Interchanges 119 and 120.

Purpose of Trip Budget

The purpose of a trip budget is to protect the function of the interchanges from being overwhelmed by traffic generated by development inconsistent with long-range plans. A trip budget is a tool that can be used to directly regulate the traffic impacts from development, and it can help ensure that future development in the interchange area is consistent with the TSP and the regional model. An Interchange Management Area (IMA) Overlay District is the mechanism by which a trip budget is often administered.

The practice of limiting trips, or placing “trip caps” or “trip budgets” involves permitting development projects based on the number of trips each will generate, in the context of development within a specified area. This method is typically employed in areas with a combination of significant congestion, capacity constraints, and few options for maintaining traffic flow.

The traffic analysis performed in support of this IAMP was based on the Roseburg transportation demand model maintained by ODOT. The model projects vehicle trips based on current comprehensive plan designations and existing and projected population, household, and employment data. There are a number of scenarios by which more traffic could be generated in the Green area than what is identified in the regional transportation demand model. These include: developing with an emphasis on high-traffic uses within current zoning; rezoning to allow more intensive uses; and expanding the urban growth boundary. Using any of these scenarios, if the lands are developed more intensively than assumed in the regional model, traffic congestion at the interchanges could become worse than anticipated. Specifically, if the Green area becomes a hub for high-trip-generation land uses, such as fast food restaurants, big box retailers, and even significant industrial development, operations at the interchanges could degrade significantly.

The potential intensity of development on commercial and industrial lands, even if allowed under existing zoning, is highly variable and unpredictable, and this represents a limitation of the predictive capabilities of the model. Ultimately, the problem is that if each property owner develops to maximum intensity, the traffic volume forecasts in the regional model could be exceeded. This could cause congestion and unacceptable operations at the interchanges, even if the recommended Preferred Alternative improvements are constructed. The trip budget is specifically designed to address this variability by managing the total volume from development in the area. Because of their greater level of predictability, future residential growth is fully accounted for in the model; therefore, residential trips need not be included in the trip budget.

Using a trip budget program could also provide a measure of flexibility for developers while limiting the total impact of development. A development that did not use all the allowable traffic generation potential of its land might be able to pass on its unused traffic potential to an adjacent development that could be allowed to generate more traffic. As long as the total traffic generation from the area remained within limits, interchange operations would be protected.

Development of a Trip Budget Proposal for the Green UUA

Development of the trip budget proposal for Green borrowed heavily from the work done by ODOT and the City of Woodburn. There are certain similarities and many differences between the two interchange areas. The type of development anticipated is largely commercial and industrial for both, though Green also expects significant residential development west of I-5. Woodburn is significantly larger than Green and is more heavily influenced by two much larger metropolitan areas (Salem and Portland), whereas Green falls in the influence of Roseburg and Winston. Woodburn is further along with plans for an upgraded interchange than is Green. That fact, however, allows Green to draw upon the similarities and take advantage of the approach being pursued by Woodburn.

Because residential trips are largely predictable, the Woodburn trip budget addressed only industrial and commercial trips. This approach is also recommended for the proposed Green UUA Trip Budget Overlay District.

Calculation of Trip Budget Threshold Numbers

As discussed in Section 3, traffic operations analysis was performed on the Preferred Alternative improvements. The traffic volumes on which the analysis was based came from the Roseburg regional transportation demand model. The model forecasts vehicle trips from projected population, household and employment numbers. The analysis showed that the Preferred Alternative improvements could provide adequate operations under projected traffic through year 2025.

The forecasted model growth formed the basis for the Green UUA trip budget. The trip budget was derived from the total growth of non-residential, PM peak hour trip ends (vehicle trips that originate or terminate) within the Green UUA between years 2000 and 2025, as predicted in the regional model. According to the model, there are currently approximately 2650 trip ends within the Green UUA; approximately 1500 from non-residential uses (mostly commercial and industrial). The model predicts approximately 4000 total trip ends in year 2025, about 2600 from non-residential uses, which is an increase of 1100 non-residential trip ends between years 2000 and 2025. The predicted additional non-residential trip ends between years 2000 and 2025 (1100 PM peak hour trips) form the basis of the recommended trip budget. Growth attributable to residential land uses is accounted for in the model and need not be included in the trip budget. Therefore, *only non-household trips were included in the total trip budget.*

The analysis of the transportation system within the interchanges 119 and 120 management area has shown that the Preferred Alternative improvements could accommodate the projected 1100 additional non-residential peak hour trip ends in the Green UUA. High-intensity commercial or industrial land development that generate vehicle trips in excess of this threshold could cause the interchanges to be overwhelmed thereby causing the need for additional improvements that are not identified in the Preferred Alternative.

Discussion of Per-Acre Trip Generation Rates

Trip generation rates can be applied to parcels or acreage to assist the County with managing and understanding the impacts of growth as applications are processed. These per-acre trip rates may be used as a screening tool to help the County ease the land use approval process for low-intensity development proposals.

Based on an estimate of Green's vacant and under-developed commercial and industrial lands, trip generation rates were estimated and compared with interchange capacity and the IMA trip budget. Douglas County could employ trip generation rates in Green as follows: Commercial = 33 peak hour trips/acre; Industrial = 6 peak hour trips/acre. However, regardless of the trip generation rate, the total trip budget is the true limiting factor.

Applying these trip rates, commercial sites generating no more than 33 trips/acre and industrial sites generating no more than 6 trips/acre could be allowed with minimal traffic analysis, whereas higher-intensity developments would be required to perform additional impact assessments and would be subject to a more thorough development review process.

It should be noted that these trip rates have nothing to do with the development or implementation of the overall trip budget. These rates are simply intended to be used by the County to streamline the approval process for low-intensity development proposals. Whether or not the future non-residential development proposals fall below these specified thresholds, they will need to be counted toward the 1100 trip budget. These per-acre trip rates are optional and not an essential component of an effective trip cap overlay district.

Green IMA Overlay District Implementation

This section presents information on the potential adoption of an Overlay District as a management measure designed to protect the function of Interchanges 119 and 120. In addition, this section identifies possible code amendments because implementing an overlay district would involve amending the Douglas County Code.

Implementing an overlay district would involve new administrative procedures and processes for the county's planning department and would require additional actions by property owners if they seek to develop or redevelop. The responsibilities of Douglas County and the Oregon Department of Transportation (ODOT) relating to an overlay district would also need to be further defined in an intergovernmental agreement (IGA).

The following pages identify the key elements of an IMA Overlay District. The material is presented in a form that could be modified and incorporated into Douglas County's development code, though it would need to be customized to reflect the county's code language, numbering, and format.

Green UUA Interchange Management Area (IMA) Overlay District

1. Purpose

The purpose of this overlay district is to preserve the long-term capacity of Interchange 119 and Interchange 120, in coordination with the Oregon Department of Transportation (ODOT).

Preserving the capacity of the interchanges is important to the County and to ODOT because of the expense of developing and constructing them. Capacity increases of the interchanges could be implemented incrementally as the need occurs.

These goals are met by establishing trip generation budgets (trip budgets) and an adoption of an IMA Overlay District and incorporating administrative procedures into the Douglas County Code for the IMA Overlay District area, located in the vicinity of I-5, and consisting all land within the boundaries of the Green UUA and designated tax lots outside the Green UUA. The trip budgets are intended to assure that development is monitored such that planned capacity improvements

can be implemented in a timely manner and that the development in the IMA area does not exceed the ultimate capacity of the interchange.

A. Boundaries of the IMA Overlay District

The IMA Overlay District is defined as the land that is within the Green UUA and designated tax lots outside the Green UUA as they exist as of March 2008, and as illustrated in Figure 1-1.

B. Applicability of this Chapter

The regulatory provisions of this chapter apply to the cumulative and parcel specific impacts generated from all development within the IMA Overlay District.

2. Vehicle Trip Budgets

This section defines how a trip budget is used and the levels applicable for the Green UUA.

A. Applying the IMA Trip Budget

The trip budget applies to all commercial, industrial and institutional development in the IMA Overlay District, and it excludes residential parcels. In the case of redevelopment or expansion of existing uses, only new trips will be counted against the trip budget. The trip budget applies on a first-developed, first-served basis.

B. The IMA Trip Budget

For the Preferred Alternative the trip budget is 1100 PM peak hour vehicles, and excludes trips generated by residential development.

3. Administration

This chapter delineates responsibilities of the County and ODOT to monitor and evaluate vehicle trip generation impacts to Interchanges 119 and 120 from development approved under this chapter.

A. Trip Generation Calculations

To enable the County to monitor and tabulate the traffic impacts of development, the County shall require the applicant for a land use action or a building permit to provide an estimate of PM peak hour trip generation.

The estimates of PM peak hour trip generation should be provided by an Oregon-licensed Professional Engineer qualified to perform transportation analyses or a Professional Traffic Engineer.

B. Traffic Impact Analysis (TIA) Methods

The preparation of an estimate of PM peak hour traffic generation may be conducted as part of a traffic impact analysis (TIA). The preparation of an estimate of PM peak hour traffic generation does not substitute for a TIA that may be required for other purposes.

A TIA may be required by either the City or by ODOT according to their respective policies and procedures. Generally, TIAs needed to address the impact on state facilities must meet requirement of OAR 734-51: Highway Approaches, Access Control, Spacing Standards and Medians.

C. ODOT Coordination in Land Use Reviews

For a land use proposals that has a significant impact on facilities under ODOT's jurisdiction or applications involving a zone change:

1. The County shall not deem the land use application complete unless it includes a TIA prepared in accordance with ODOT requirements.
2. The County shall provide written notification to ODOT when the application is deemed complete.
3. ODOT shall have at least 30 days to provide written comments to the County, measured from the date the completion notice was mailed. If ODOT does not provide written comments during this 30-day period, the County staff report may be issued without consideration of ODOT comments.

D. County Monitoring Responsibilities

The details of County and ODOT monitoring and coordination responsibilities must be specified in an approved Douglas County-ODOT Intergovernmental Agreement (IGA).

1. The County shall be responsible for maintaining a ledger documenting the cumulative peak hour trip generation impact from all commercial, industrial and institutional public land use applications approved under this chapter, compared with the adopted IMA Trip Budget.
2. The County may adjust the ledger based on actual development and employment data, subject to review and concurrence by ODOT.
3. The County will provide written notification to ODOT when land use applications approved under this chapter, combined with approved building permits, result in traffic generation estimates that exceed 33% and 67% of the trip budget associated with the interchange configuration in operation. (See 1.B, above).

E. Vesting and Expiration of Vehicle Trip Allocations

This section recognizes that vehicle trip allocations may become scarce towards the end of the planning period. The following rules apply to allocations of vehicle trips against the adopted trip budget:

1. For commercial and industrial land use applications, vehicle trip allocations are vested at the time of design review approval.
2. Vehicle trips shall not be allocated based solely on approval of a comprehensive plan amendment or zone change, unless consolidated with a subdivision or design review application.
3. Vesting of vehicle trip allocations shall expire at the same time as the development decision expires, in accordance with the Douglas County Code.
4. Permitted, Special Use and Conditional Uses

Generally, permitted and conditional uses allowed in the underlying zoning district are allowed subject to other applicable provisions of the Douglas County Code and this chapter.

5. Comprehensive Plan and Zoning Map Amendments

This section applies to all Comprehensive Plan Map amendments within the IMA Overlay District. This section does not apply to Zoning Map amendments that result in conformance with the applicable Comprehensive Plan Map designation.

A. Transportation Planning Rule Requirements

Application for Comprehensive Plan Map amendments, and for Zoning Map amendments shall determine whether the proposed change will significantly affect a collector or arterial transportation facility, and must meet the requirements of OAR 660-012-0060 and Douglas County Code.

B. Limitations on Comprehensive Plan Amendments

To ensure that the remaining capacity of Interchanges are reserved for currently planned land uses, Comprehensive Plan Map amendments that allow land uses that will generate traffic in excess of the IMA trip budget shall be prohibited.

6. IMA Trip Budget Standards and their Application to Individual Development Proposals

This section establishes the standard that must be met for developments in the IMA:

- Cumulative Impact Standard. The cumulative impact of each individual development proposal within the IMA is counted against the IMA trip budget as defined in 2. A, above. This applies to all developments and accounts for all development in the IMA Overlay District as a whole.
- Site-Specific Standard. This is an additional standard that applies only to developments that propose to exceed a base level of traffic related to parcel size and the underlying zoning. It applies to industrial or commercial development proposals; not to residential or institutional development proposals.

A. Cumulative Impact Standard

All commercial, industrial and institutional land use applications subject to the provisions of the IMA Overlay District shall be subject to design review and shall meet the following standard:

1. Peak hour vehicle traffic generated from the proposed development shall not, in combination with other approved developments, exceed the IMA District Trip Budget specified in Section 2.B, above.
2. Prior to approval of any land use application, the County shall make an affirmative determination that traffic generated from the proposed development will be within the adopted total trip generation budget within the IMA Overlay District.
3. The applicant may propose, and the County may require transportation demand management (TDM) measures through the design review and conditional use process.

B. Site-Specific Standard

Individual development proposals may be subject to the Site-Specific Standard as follows:

1. Exemptions:

- a. Proposed residential development shall be exempted from the provisions of this section.
 - b. Proposed institutional development (schools, parks, and publicly-owned facilities) shall be exempted from the provisions of this section. Institutional development is required to meet only the provisions of 6.A., the Cumulative Impact Standard.
 - c. For development proposals on commercially zoned land, any commercial, industrial, office, service-related and public (i.e. non-residential and non-institutional) development that falls below an estimated PM peak hour trip rate equivalent to 33 PM peak hour trips per acre, shall not be subject to further review under this sub-section (Mandatory Site-Specific Standard), but shall meet transportation demand management conditions applied through the design review process and Section 6.A, the Cumulative Impact Standard.
 - d. For development proposals on industrially zoned land, any commercial, industrial, office, service-related and public (i.e. non-residential and non-institutional) development that falls below an estimated PM peak hour trip rate equivalent to 6 PM peak hour trips per acre, shall not be subject to further review under this sub-section (Site-Specific Standard), but shall meet transportation demand management conditions applied through the design review process and Section 6.A, the Cumulative Impact Standard.
2. Conditional Use Required. Proposed development that exceeds the parcel budget (33 PM peak hour trips per acre for commercially zoned land or 6 PM peak hour trips per acre for industrially zoned land) shall be reviewed through the Type III conditional use process. The following site-specific review criteria shall apply:
- a. Development on industrial or commercial land that provides employment opportunities listed on Table E-1 below may be permitted, if the County makes affirmative findings that the development will contribute substantially to Douglas County's economic objectives and transportation demand management conditions are applied through the design review process.
 - b. Non-residential and non-targeted development on land designated Commercial on the Douglas County Comprehensive Plan shall be denied unless transportation demand management conditions are applied through the design review process to ensure that the site-specific standard is not exceeded.

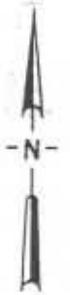
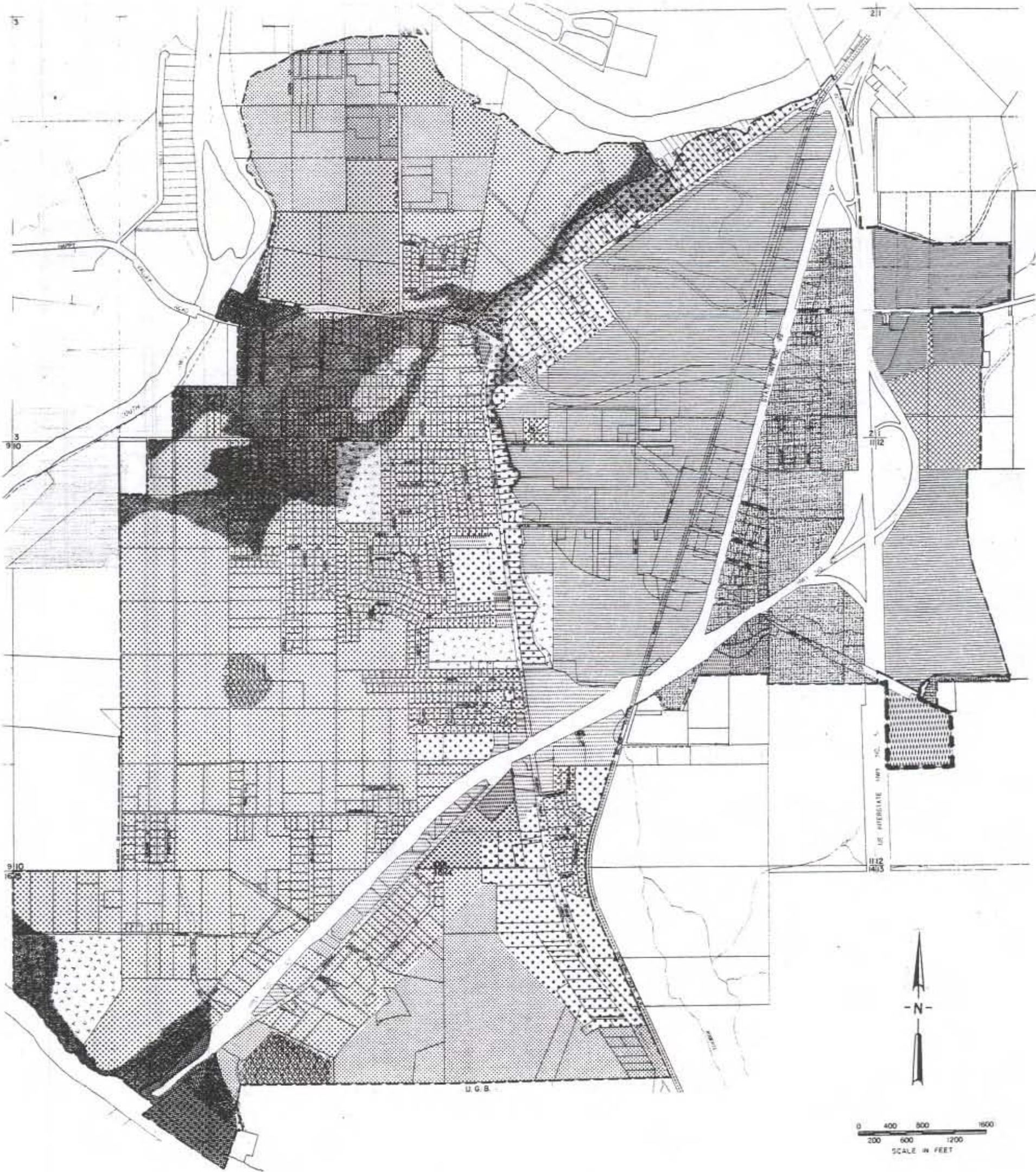
Table E-1. Targeted Employers

Standard Industrial Category (SIC) Employment Category	Category Description
Industry 27	Publishing, printing, and allied industries
Industry 32	Stone, clay, glass, and concrete products
Industry 34	Fabricated metal products, except machinery and transportation equipment
Industry 35	Industrial and commercial machinery and computer equipment
Industry 36	Electronic and other electrical equipment and components, except computer equipment
Industry 37	Transportation equipment
Industry 42	Motor freight transportation and warehousing
Industry 50	Wholesale trade – durable goods
Industry 51	Wholesale trade – non-durable goods
Industry 61	Non-depository credit institutions
Industry 73	Business services
Industry 80	Health services
Industry 87	Professional services

Appendix E
Green UUA Land Use

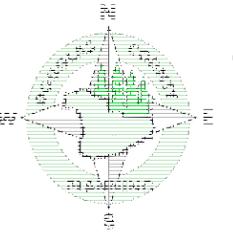
- INR  INDUSTRIAL RESERVE
- RCL  LOT OF RECORD
- RLD  LOW DENSITY RESIDENTIAL
- RMD  MEDIUM DENSITY RESIDENTIAL
- RHD  HIGH DENSITY RESIDENTIAL
- Z  LIMITED HAZARD RESIDENTIAL
- CO  COMMERCIAL
- CI  GENERAL COMMERCIAL/INDUSTRIAL
- IN  INDUSTRIAL
- PSP  PUBLIC/SEMI PUBLIC
- ZZ  GEOLOGIC HAZARD
-  URBAN GROWTH BOUNDARY
- AGG, AGC  AGRICULTURE

GREEN AREA LAND USE PLAN

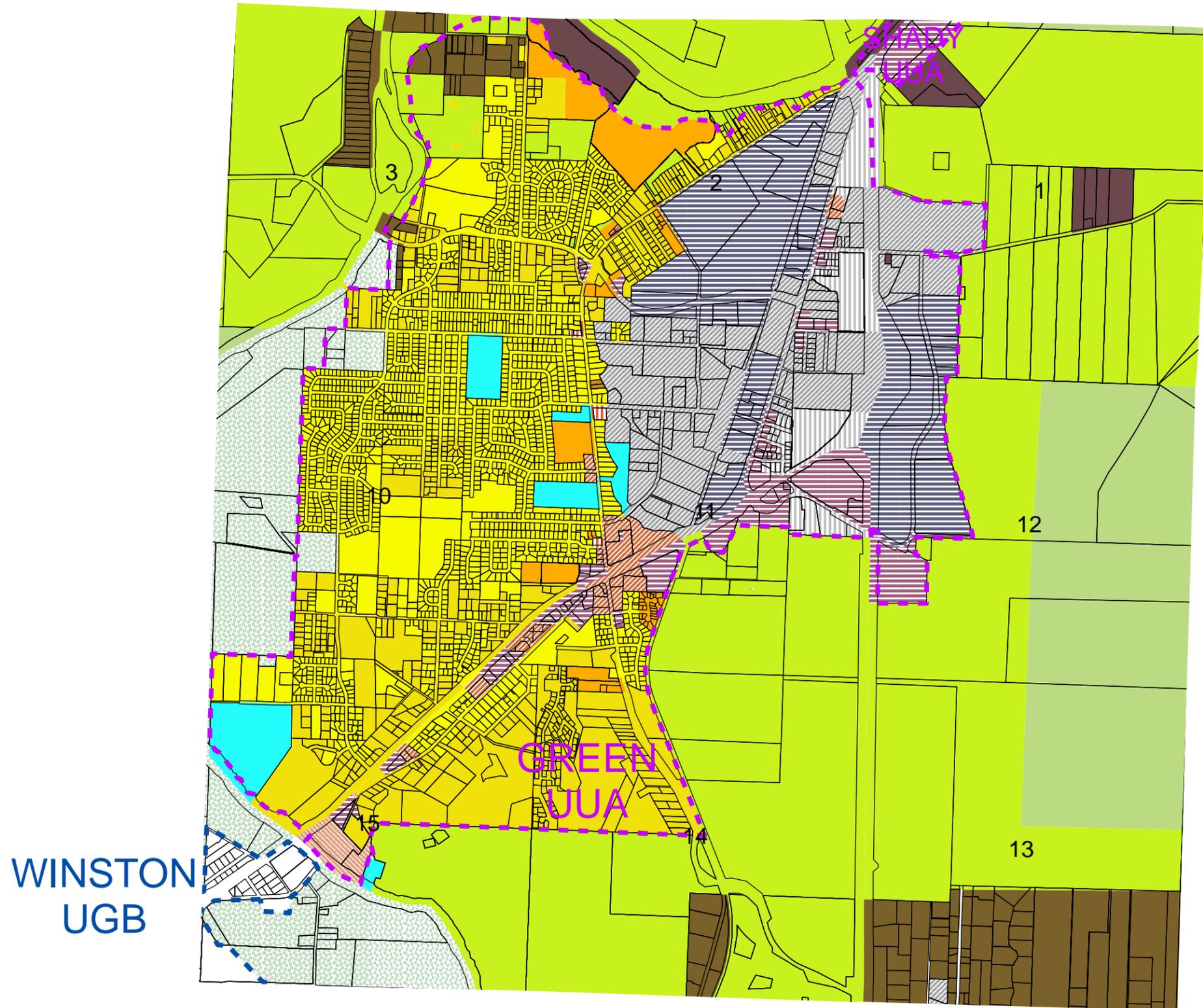


ZONING MAP T28S R06W NE-1/4

January 17, 2008



T28S R06W NE-1/4



Legend

- UGB
- UUA
- RC
- RSC
- TR
- FF
- AW
- FG
- F1
- F2
- F3
- 5R
- RR
- 1R
- RS
- R1
- R2
- R3
- CRS
- CRC
- CRE
- CT
- C1
- C2
- C3
- MRC
- ME
- M1
- M2
- M3
- PR
- WI
- ED
- EC
- EN
- CS
- MR
- WOCR
- WOTC
- MC
- MRI

ZONING GENERALLY EXTENDS TO THE
CENTERLINE OF ROADS AND RIVERS



ARTICLE 14

(R-3) Residential-High Density and Professional Office

SECTION 3.14.000 Purpose

The residential high density and professional office classification is intended to provide for a high concentration of population. A full range of public services should be available. Siting of this zone should be near major streets or roads and community services. This zone may be utilized as a buffer to central business districts, major shopping centers or in areas of redevelopment.

SECTION 3.14.050 Permitted Uses

In the R-3 Zone, the following uses and their accessory buildings and uses are permitted, subject to the general provisions and exceptions set forth by this ordinance:

1. Multiple-family dwellings.
2. Duplexes.
3. Accessory buildings not exceeding 1,500 square feet used as garages, storerooms, woodsheds, hobby shops, laundries, playhouses or similar and related uses provided that there shall not be more than two buildings allowed as accessory to any single-family dwelling or duplex. Unattached structures shall be located on the rear half of the property unless a variance is granted, except that a detached garage in conjunction with the primary dwelling need not be located on the rear half of the lot.
4. Parks, playgrounds, or community centers.
5. Limited Home Occupation.
6. Grocery store, limited to 2,500 square feet.
7. Boarding and lodging houses.
8. Clubs, lodges and assembly halls.
9. Orphanages and charitable institutions.
10. Professional Offices.
11. Medical and dental clinics.

12. Pharmacy.
13. Hospitals.
14. Privately operated kindergartens or day nurseries.
15. Residential Facility.
16. Schools.
17. Churches.
18. Public and semipublic buildings and uses.

SECTION 3.14.075 Uses Permitted With Standards

In the R-3 Zone, the following uses and activities are permitted subject to specified standards and the general provisions and exceptions set forth by this Ordinance.

Items 3 and 4 in this use category shall be subject to written consent from all surrounding adjacent property owners. Adjacent property owner consent shall be obtained by the applicant and submitted to the Planning Department on forms provided by the County. The surrounding adjacent property owners shall be identified by the Planning Department after a pre-application conference has been held and the fee paid (same fee as if the application were for a conditional use). Adjacent owner consent signatures shall be verified by sending a copy of the signed consent form to each identified owner of record. If no negative comments are received within 12 days, the request shall be granted. If adjacent owner consent cannot be obtained, the request shall then be processed as a conditional use pursuant to §2.060.1.

1. Zero lot line residential developments, subject to provisions of Article 31.
2. Mobile Home Parks subject to the density provisions and review standards of Article 51.
3. Nurseries for the growing, sale and display of trees, shrubs and flowers.
4. Buildings accessory to a single-family dwelling in excess of 1,500 square feet provided that there shall not be more than two buildings allowed as accessory to any single-family dwelling or duplex and further provided unattached structures shall be located on the rear half of the property unless a variance is granted.
5. Veterinary Clinic, provided the use shall be conducted wholly within enclosed structures and there shall be no outside animal runs.

SECTION 3.14.100 Buildings and Uses Permitted Conditionally

In the R-3 zone, the following uses and activities and their accessory buildings and uses are permitted subject to the provision of §2.060.1 and Article 39 of this chapter:

1. One single-family dwelling.

SECTION 3.14.150 Property Development Standards

1. **Area:**

- a. The minimum property area shall be 6,500 square feet.
- b. The minimum area for a multiple-family dwelling shall be 10,000 square feet provided that the minimum area per dwelling unit shall be 2,000 square feet.
- c. Lots or parcels shall have a minimum average width of 65 feet.
- d. Boarding and lodging houses shall have a minimum site area of 300 square feet for each occupant thereof.

2. **Coverage:** Not over 60 percent of the property shall be covered by all buildings located thereon.

3. **Setbacks:**

- a. Front Yard: No structure other than a fence or sign shall be located closer than 15 feet from the front property line.
- b. Side Yard: No structure other than a fence or sign shall be located closer than 5 feet from side property lines for interior properties and 10 feet from exterior side property lines for corner building sites.

No multiple-family dwellings shall be located closer than 10 feet from a side property line which abuts any other residential zone.

- c. Rear Yard: No structure other than a fence or sign shall be located closer than 5 feet from the rear property line.
- d. Vision Clearance: Vision clearance on corner properties shall be minimum of 20 feet.

4. **Height:** Maximum height of all structures shall be 60 feet.

ARTICLE 13

(R-2) Multiple Family Residential

SECTION 3.13.000 Purpose

The Multiple-Family Residential classification is intended to provide a wide range of housing density and type while preserving the residential character of an area. This zone applies to properties with minimal topographic limitations; locations which are readily accessible by and to major streets; and adjacent to public open space or commercial services. This zone is intended for areas with a full range of public services including public sewer and water.

SECTION 3.13.050 Permitted Buildings and Uses

In the R-2 Zone, the following uses and their accessory buildings and uses are permitted subject to the general provisions and exceptions set forth by this ordinance:

1. Multiple family residential dwellings or condominiums.
2. Duplexes.
3. Accessory buildings not exceeding 1,500 square feet used as garages, storerooms, woodsheds, hobby shops, laundries, playhouses or similar and related uses provided that there shall not be more than two buildings allowed as accessory to any single-family dwelling or duplex. Unattached structures shall be located on the rear half of the property unless a variance is granted, except that a detached garage in conjunction with the primary dwelling need not be located on the rear half of the lot.
4. Limited Home Occupation.
5. Residential Facility.
6. Bed and Breakfast.

SECTION 3.13.075 Uses Permitted With Standards

In the R-2 Zone, the following uses and activities are permitted subject to specified standards and the general provisions and exceptions set forth by this Ordinance.

Items 3 and 4 in this use category shall be subject to written consent from all surrounding adjacent property owners. Adjacent property owner consent shall be obtained by the applicant and submitted to the Planning Department on forms provided by the County. The surrounding adjacent property owners shall be identified by the Planning

Department after a pre-application conference has been held and the fee paid (same fee as if the application were for a conditional use). Adjacent owner consent signatures shall be verified by sending a copy of the signed consent form to each identified owner of record. If no negative comments are received within 12 days, the request shall be granted. If adjacent owner consent cannot be obtained, the request shall then be processed as a conditional use pursuant to §2.060.1.

1. Zero lot line residential developments, subject to provisions of Article 31.
2. Mobile Home Parks subject to the density provisions and review standards of Article 51.
3. Privately operated kindergartens or day nurseries.
4. Buildings accessory to a single-family dwelling in excess of 1,500 square feet provided that there shall not be more than two buildings allowed as accessory to any single-family dwelling or duplex and further provided unattached structures shall be located on the rear half of the property unless a variance is granted.
5. One single-family dwelling, provided that adjacent properties within 100 feet are predominately developed with single-family dwellings.

SECTION 3.13.100 Buildings and Uses Permitted Conditionally

In the R-2 zone, the following uses and activities and their accessory buildings and uses are permitted subject to the provisions of §2.060.1 and Article 39 of this chapter:

1. One single-family dwelling where adjacent properties within 100 feet are predominately developed with uses other than single family dwellings.
2. Public and semipublic buildings and uses not otherwise specified in this section provided that side and rear yards shall be 20 feet.
3. Hospitals and schools (kindergartens, elementary, junior high and high), providing setbacks are established from side and rear property lines of at least 50 feet.
4. Parks, playgrounds, or community centers.

SECTION 3.13.150 Property Development Standards

1. **Area:**
 - a. The minimum property area shall be 6,500 square feet. The minimum property area for multiple-family dwellings shall be 10,000 square feet provided that the minimum property area per dwelling unit shall be 2,000 square feet.

- b. Lots or parcels shall have a minimum average width of 65 feet.
 - c. A property containing less than 6,500 square feet existing at the time this ordinance became effective may be occupied by a single-family dwelling provided that all other property development standards shall be maintained.
2. **Coverage:** Not over 40 percent of the property shall be covered by all buildings located thereon.
 3. **Setbacks:**
 - a. Front Yard: No structure other than a fence or sign shall be located closer than 15 feet from the front property line.
 - b. Side Yard: No structure other than a fence or sign shall be located closer than 5 feet from side property lines for interior properties and 10 feet from exterior side property lines for corner building sites. No multi-family dwellings shall be located closer than 10 feet from side property lines.
 - c. Rear Yard: No structure other than a fence or sign shall be located closer than 5 feet from the rear property line.
 - d. Vision Clearance: Vision clearance on corner properties shall be minimum of 20 feet.
 4. **Height:** Maximum height for any structure shall be 45 feet.
 5. **Signs:**
 - a. Signs shall not extend over a public right-of-way or project beyond the property line.
 - b. Except as provided in the following subsection, signs shall be limited to six square feet in area.
 - c. One lighted identification sign (excluding illuminated signs of the flashing or animated type) not exceeding 12 square feet in area is permitted for multiple-family dwellings having five or more dwelling units and for buildings other than dwellings.
 6. **Parking:** Off street parking shall be provided in accordance with Article 35.
 7. **Access:** Access to multiple-family dwellings or condominiums shall be provided in accordance with the provisions of Article 35.

ARTICLE 12

(R-1) Single-Family Residential

SECTION 3.12.000 Purpose

The Single-Family Residential classification is intended to provide for a medium density urban residential use plus related compatible uses such as schools and parks. The classification is designed for those areas adjacent or close to existing cities or areas with an urban character in which urban services such as public water and sewer are available.

SECTION 3.12.050 Permitted Uses

In the R-1 Zone, the following uses and their accessory buildings and uses are permitted, subject to the general provisions and exceptions set forth by this ordinance:

1. A single-family dwelling.
2. Duplex, subject to development standards contained in §3.12.150 or,
 - a. A duplex on a lot or parcel of not less than 7,500 square feet that was in existence at the time this Ordinance was adopted (Dec 31, 1980), providing such duplex meets one of the following requirements:
 - (1) it will be located on a collector street; or
 - (2) it will be located on a corner lot.
3. Accessory buildings not exceeding 1,500 square feet used as garages, storerooms, woodsheds, hobby shops, laundries, playhouses or similar and related uses provided that there shall not be more than two buildings allowed as accessory to any single-family dwelling or duplex. Unattached structures shall be located on the rear half of the property unless a variance is granted, except that a detached garage in conjunction with the primary dwelling need not be located on the rear half of the lot.
4. Limited Home Occupation.

SECTION 3.12.075 Uses Permitted With Standards

In the R-1 Zone, the following uses and activities are permitted subject to specified standards and the general provisions and exceptions set forth by this Ordinance.

1. Zero lot line residential developments, subject to provisions of Article 31.

SECTION 3.12.100 Buildings and Uses Permitted Conditionally

In the R-1 zone, the following uses and activities and their accessory buildings and uses are permitted subject to the provisions of §2.060.1 and Article 39 of this chapter:

1. Hospitals and schools (kindergartens, elementary, junior high and high), provided setbacks are established from side and rear property lines of at least 50 feet.
2. Privately operated kindergartens or day nurseries.
3. Public and semipublic buildings and uses not otherwise specified in this section.
4. Mobile Home Parks subject to the density of the R-1 Zone and provisions of Article 51 of this chapter.
5. Parks, playgrounds, or community centers.
6. Residential Facility.
7. Bed and Breakfast.
8. Buildings accessory to a single-family dwelling in excess of 1,500 square feet provided that there shall not be more than two buildings allowed as accessory to any single-family dwelling or duplex and further provided unattached structures shall be located on the rear half of the property unless a variance is granted.

SECTION 3.12.150 Property Development Standards

1. **Area:**
 - a. The minimum property area shall be 6,500 square feet for a single family dwelling and 10,000 square feet for a duplex.
 - b. Lots or parcels shall have a minimum average width of 65 feet.
2. **Coverage:** Not over 40 percent of the lot shall be covered by all buildings located thereon.
3. **Setbacks:**
 - a. Front Yard: No structure other than a fence or sign shall be located closer than 15 feet from the front property line.

- b. Side Yard: No structure other than a fence or sign shall be located closer than 5 feet from side property lines for interior properties, and 10 feet from exterior side property lines for corner building sites.
 - c. Rear Yard: No structure other than a fence or sign shall be located closer than 5 feet from the rear property line.
 - d. Vision Clearance: Vision clearance on corner lots shall be minimum of 20 feet.
- 4. Height:** Maximum height for any structure shall be 35 feet, except hospitals, public buildings or churches may be 45 feet.
- 5. Signs:**
- a. Signs shall not extend over a public right-of-way or project beyond the property line.
 - b. Signs shall not be illuminated or capable of movement.
 - c. The total sign area of all signs on the property shall be limited to thirty-two square feet.
 - d. One sign not exceeding 12 square feet in area is permitted for each building other than a dwelling.
- 6. Parking:** Off street parking shall be provided in accordance with Article 35.

ARTICLE 22**(M-3) Heavy Industrial****SECTION 3.22.000 Purpose**

The Heavy Industrial classification is intended to provide, protect and recognize areas well suited for medium and heavy industrial development and uses free from conflict with commercial, residential and other incompatible land uses. This district is intended to be applied generally only to those areas which have available excellent highway, rail or other transportation.

SECTION 3.22.050 Permitted Uses

In the M-3 zone, the following uses and their accessory buildings and uses are permitted, subject to the general provisions and exceptions set forth by this ordinance.

1. Any use permitted in the M-2 zone.
2. Processing of aggregate and mineral resources or other subsurface resources, including asphalt plants.
3. Manufacturing, repairing, fabricating, processing, parking, or storage use not listed in any other section of this ordinance or under conditional uses below.
4. One mobile home or watchman's quarters in conjunction with a use listed in this article.

SECTION 3.22.100 Buildings and Uses Permitted Conditionally

In the M-3 zone, the following uses and activities and their accessory buildings and uses are permitted subject to the provisions of §2.060.1 and Article 39 of this chapter.

1. Salvage yard.
2. Automobile wrecking yard.
3. Disposal or reduction of waste materials, garbage, offal, or dead animals (not to be visible from an arterial roadway).
4. Manufacture and storage of chemicals and explosives.
5. Operations conducted for the exploration and mining of aggregate and mineral resources or other subsurface resources.
6. Slaughterhouse.

SECTION 3.22.150 Property Development Standards

1. **Area:** No standard established.
2. **Coverage:** Full coverage is allowable; provided minimum space, servicing space and setbacks have been provided.
3. **Setbacks:**
 - a. Front Yard: Front yards shall not be required.
 - b. Side and Rear Yard: Side or rear yards will not be required, but if side or rear yards are created they shall be a minimum of five feet.
 - c. Vision Clearance: Vision clearance shall be negotiated on submittal of plot plan for corner building sites.
4. **Height:** No structure shall exceed a height of 50 feet.
5. **Signs:**
 - a. Signs shall not extend over a public right-of-way or project beyond the property line.
 - b. Signs may be illuminated but may not be of the flashing or moving type.
6. **Parking:** Off street parking shall be provided in accordance with Article 35.
7. **Environmental Quality:** All uses in the M-3 zone shall comply with standards adopted by the Environmental Quality Commission for air, land, water and noise quality.

ARTICLE 21**(M-2) Medium Industrial****SECTION 3.21.000 Purpose**

The Medium Industrial classification is intended to create, preserve and enhance areas containing a wide range of manufacturing and related establishments, and is typically appropriate to areas providing a wide variety of sites with good rail or highway access.

SECTION 3.21.050 Permitted Uses

In the M-2 zone, the following uses and their accessory buildings and uses are permitted subject to the general provisions and exceptions set forth by this ordinance.

1. Any use permitted in the M-1 zone, §3.20.050.
2. Bottling works.
3. Contractor's equipment storage yards.
4. Freight and truck yards or terminals.
5. Lumber yards, retail, including mill work.
6. Manufacture of pottery.
7. Manufacturing, compounding or assembling of articles or merchandise from the following prepared materials: bone, cellophane, canvas, cloth, cork, feather, felt, fiber, fur, glass, hair, horn, leather, paper, plastics, metals, precious or semiprecious stones, shell, textiles, tobacco, wood, yarns, and paint; none of the foregoing employing a foundry process.
8. Meat processing plant (not including slaughtering).
9. Welding and machine shop.
10. Wholesale business, storage buildings, warehouses and bulk fuel storage facilities.
11. Concrete batching plants and the manufacture and sale of concrete products.

12. Airplane hangars, storage and other related facilities associated with an existing airport.
13. One mobile home or watchman's quarters in conjunction with a use listed in this article.

SECTION 3.21.100 Buildings and Uses Permitted Conditionally

In the M-2 zone, the following uses and activities and their accessory buildings and uses are permitted subject to the provisions of §2.060.1 and Article 39 of this chapter.

1. Uses similar to those permitted in §3.21.050 that are not specifically listed under the M-3 zone, provided that:
 - a. Use is not objectionable due to odor, dust, smoke, noise, vibration or appearance.
 - b. Items manufactured, processed or produced in this area shall be primarily for wholesale.
2. Slaughterhouse.
3. Airports

SECTION 3.21.150 Property Development Standards

1. **Area:** No standard established.
2. **Coverage:** Full coverage is allowable; provided minimum space, servicing space and setbacks have been provided.
3. **Setbacks:**
 - a. Front Yard: Front yards shall not be required.
 - b. Side and Rear Yard: Side or rear yards will not be required, but if side or rear yards are created they shall be a minimum of five feet.
 - c. Vision Clearance: Vision clearance shall be negotiated on submittal of plot plan for corner building sites.
4. **Height:** No structure shall exceed a height of 50 feet.

5. Signs:

- a. Signs shall not extend over a public right-of-way or project beyond the property line.
 - b. Signs may be illuminated but may not be of the flashing or moving type.
- 6. Parking:** Off street parking shall be provided in accordance with Article 35.
- 7. Environmental Quality:** All uses in the M-2 zone shall comply with standards adopted by the Environmental Quality Commission for air, land, water and noise quality.

ARTICLE 20**(M-1) Light Industrial****SECTION 3.20.000 Purpose**

The Light Industrial classification is intended to create, preserve, and enhance areas containing secondary manufacturing and related establishments and intense commercial uses with limited external impact. These uses are typically appropriate to locations near major thoroughfares and non-manufacturing areas.

SECTION 3.20.050 Permitted Uses

In the M-1 zone, the following uses and their accessory buildings and uses are permitted subject to the general provisions and exceptions set forth by this ordinance:

1. Builder supplies including retail sales of lumber, agricultural supplies and machinery sales room.
2. Laboratories.
3. Mobile home and recreational vehicle sales.
4. Warehouses, including buildings for commercial storage of personal property not used for commercial purposes.
5. Plumbing and sheet metal shops.
6. Open storage area for commercial storage of personal property such as boats and recreational vehicles.
7. Wholesale business salesrooms.
8. Laundry, cleaning and dyeing works and carpet and rug cleaning.
9. The manufacture, compounding, processing, packaging or treatment of such products as bakery goods, candy, cosmetics, dairy products, drugs, perfumes, toiletries, soft drinks, and food products; except fish, meat products, sauerkraut, vinegar, yeast, and the rendering or refining of fats and oils.
10. Veterinary clinic.
11. Utility facilities necessary for public service.

12. Outdoor Advertising in conformance with state siting standards set forth in Oregon Revised Statutes and Oregon Administrative Rules.
13. One mobile home or watchman's quarters in conjunction with a use listed in this article.

SECTION 3.20.100 Buildings and Uses Permitted Conditionally

In the M-1 zone, the following uses and activities and their accessory buildings and uses are permitted subject to the provisions of §2.060.1 and Article 39 of this chapter:

1. Uses similar to those permitted in §3.20.050 that are not specifically listed under the M-2 or M-3 zones, provided that:
 - a. The use is not objectionable due to odor, dust, smoke, noise, vibration or appearance.
 - b. Items manufactured, processed or produced in this zone shall be primarily for wholesale.
2. One single family dwelling in conjunction with a use listed in this Article.

SECTION 3.20.150 Property Development Standards

1. **Area:** No standard established.
2. **Coverage:** Full coverage is allowable; provided minimum space, servicing space and setbacks have been provided.
3. **Setbacks:**
 - a. Front Yard: Front yards shall not be required.
 - b. Side and Rear Yard: Side or rear yards will not be required, but if side or rear yards are created they shall be a minimum of five feet.
 - c. Vision Clearance: Vision clearance shall be negotiated on submittal of plot plan for corner building sites.
4. **Height:** No structure shall exceed a height of 50 feet.
5. **Signs:**
 - a. Signs shall not extend over a public right-of-way or project beyond the property line.
 - b. Signs may be illuminated but may not be of the flashing or moving type.

6. **Parking:** Off street parking shall be provided in accordance with Article 35.
7. **Environmental Quality:** All uses in the M-1 zone shall comply with standards adopted by the Environmental Quality Commission for air, land, water and noise quality.

ARTICLE 3

(FG) EXCLUSIVE FARM USE-GRAZING

SECTION 3.3.000 Purpose

The purpose and intent of the Exclusive Farm Use-Grazing zone is to provide areas for the continued practice of agriculture and permit the establishment of only those new uses which are compatible with agricultural activities. The minimum property size established by this zone is intended to promote commercial agricultural pursuits, such as grazing, rangeland and other less intensive agricultural uses.

It is the purpose of this zone classification to provide the automatic farm use valuation for farms which automatically qualify under the provisions of ORS 308. Therefore, the Exclusive Farm Use Zone is to be applied to all lands designated "Agriculture" in the Comprehensive Plan in accordance with LCDC Goal No. 3 and the Douglas County Agricultural Element.

The Exclusive Farm Use Zone is intended to guarantee the preservation and maintenance of the areas so classified for farm use free from conflicting nonfarm uses and influences.

SECTION 3.3.050 Permitted Uses

In the FG zone, the following uses and activities and their accessory buildings and uses are permitted subject to the general provisions and exceptions set forth by this ordinance:

1. Farm uses (except as provided in §3.3.100).
2. The propagation or harvesting of a forest product.
3. Other buildings and accessory uses customarily provided in conjunction with farm use.
4. Operations for the exploration of geothermal resources as defined by ORS 522.005.
5. Sites for the disposal of solid waste ordered to be established by the Department of Environmental Quality, and the facilities necessary for their operation.
6. Water impoundments with less than 1000 acre feet of storage capacity, in conjunction with beneficial uses of water customarily associated with farm

or forest uses or as a source of water for domestic use, provided that necessary state and federal permits have been issued.

7. Operations for the exploration for minerals as defined by ORS 517.750.
8. Farm stands as described in ORS 215.283.
9. Alteration, restoration or replacement of a lawfully established dwelling that:
 - a. Has intact exterior walls and roof structure;
 - b. Has indoor plumbing consisting of a kitchen sink, toilet and bathing facilities connected to a sanitary waste disposal system;
 - c. Has interior wiring for interior lights;
 - d. Has a heating system; and
 - e. In the case of replacement, the dwelling to be replaced shall be removed, demolished or converted to an allowable nonresidential use within three months of the completion of the replacement dwelling. An "Accessory farm dwelling" that was approved under §3.45.300.1.b.(3) may only be replaced by a manufactured dwelling.
 - f. A replacement dwelling may be located on any part of the same lot or parcel so long as it complies, where practicable, with all applicable siting standards.
 - g. If the dwelling to be replaced is located on a portion of the lot or parcel not zoned EFU, then the applicant shall, as a condition of approval, record a deed restriction prohibiting the future siting of a dwelling on that non-EFU portion of the lot or parcel. The deed restriction shall be noted on Planning Department records. A release from the deed restriction may only occur if the statute regarding replacement dwellings changes or if there is a change in the Plan and Zone designation.
 - h. Deferred replacement: Upon request from an applicant, a deferred replacement may be authorized, allowing the replacement dwelling to be constructed or placed at any time in the future. The deferred replacement allows a property owner to remove a dwelling meeting the criteria of 9.a-d above with the guarantee that the removed dwelling can be replaced at any time in the future, subject to the siting standards of 9.e-g. A deferred replacement is subject to the following:

- 1) The dwelling to be replaced shall be removed or demolished within three months after the deferred placement is issued. Conversion to a non-residential use shall not be permitted. Documentation (photos, contractors written statement, or other suitable evidence) that the dwelling has been removed or demolished shall be submitted by the applicant within the three month period. If the dwelling to be replaced is not removed or demolished within the three month period, the deferred replacement authorization shall become void.
 - 2) When constructed or placed, the deferred replacement dwelling shall comply with the building and sanitation codes that are applicable at the time of construction or placement.
 - 3) A deferred replacement authorization may be transferred, but only to the applicant's spouse or children.
10. Model aircraft take-off and landing sites as provided in ORS 215.283(1).
 11. Fire service facilities providing rural fire protection services.
 12. Irrigation canals, delivery lines and those structures and accessory operational facilities associated with an irrigation district, drainage district, water improvement district, or water control district (as those terms are defined in ORS 540).
 13. Establishment of a Wildlife Habitat Conservation and Management Plan.

SECTION 3.3.075 Uses Permitted with Standards

In the FG zone, the following uses and activities are permitted subject to specified standards and the general provisions and exceptions set forth by this Ordinance.

1. One single-family dwelling customarily provided in conjunction with farm use on a property meeting the requirements of Article 45.
2. "Owner of Record" dwelling subject to the standards in 3.3.125.
3. "Relative Dwelling" -- A second single-family dwelling on real property used for farm use and meeting the notice and process requirements of §3.45.100.1 through 4:
 - a. If the dwelling is:
 - i. located on the same lot or parcel as the dwelling of the farm operator; and

- ii. occupied by a relative, which means a child, parent, step- parent, grandchild, grandparent, step-grandparent, sibling, step-sibling, niece, nephew or first cousin of the farm operator or the farm operator's spouse, whose assistance in the management and farm use of the existing commercial farming operation is or will be required by the farm operator. The farm operator shall continue to play the predominant role in the management and farm use of the farm.
 - b. Except as provided in ORS 215.283(1)(e), establishment of the second dwelling may not be used for future justification of land division; and
 - c. The County must find, based on the farm operators statement, that the second dwelling is necessary for the farm operation and that the farm operator fully understands the conditions under which the building permit is being approved.
- 4. Accessory farm dwellings on a property meeting the requirements of Article 45.
- 5. Churches, subject to §2.065.2, provided that they are not within 3 miles of an urban growth boundary unless an exception is approved pursuant to ORS 197.732 and OAR 660, Division 4. Existing churches may be maintained, enhanced or expanded on the same tract without an exception. New churches are not allowed on high value farmland. Division of land for a new church or cemetery in conjunction with a church, as provided in ORS 215.263, shall not exceed five acres, and the remaining parcel must either meet the minimum parcel size or, if less than the minimum parcel size, be consolidated with an adjoining parcel.
- 6. Public or private schools, subject to §2.065.2, including all buildings essential to the operation of a school provided that they are not within 3 miles of an urban growth boundary unless an exception is approved pursuant to ORS 197.732 and OAR 660, Division 4. Existing school facilities may be maintained, enhanced or expanded on the same tract without an exception. New facilities are not allowed on high value farmland.
- 7. Onsite filming and related accessory uses may be conducted without prior approval provided the use does not exceed 45 days.
- 8. Parking of up to seven log trucks unless the County determines that log truck parking on a particular lot or parcel will:
 - a. Force a significant change in accepted farm or forest practices on surrounding lands devoted to farm or forest use; or

- b. Significantly increase the cost of accepted farm or forest practices on surrounding lands devoted to farm or forest use.
 9. One single family dwelling in conjunction with a wildlife habitat conservation and management plan that has been approved by the State Department of Fish and Wildlife, provided that:
 - a. the proposed dwelling will be situated on a lot or parcel legally created prior to November 5, 1993; and
 - b. the subject lot or parcel qualifies for a farm or non-farm dwelling under current standards (except that farm assessment disqualification shall not be required); and
 - c. the proposed dwelling will not be established on a lot or parcel that is predominantly composed of class I or II, or prime or unique soils as identified by the U.S. Natural Resources Conservation Service; and
 - d. the governing body or its designee finds that the proposed dwelling will not:
 - (1) force a significant change in accepted farm or forest practices on surrounding lands devoted to farm or forest use; or
 - (2) significantly increase the cost of accepted farm or forest practices on surrounding lands devoted to farm or forest use.
 - (3) The standards of this subsection may be satisfied through the imposition of clear and objective conditions; and
 - e. The proposed dwelling will be the only dwelling situated on the subject lot or parcel.
 10. Single-family residential dwelling not provided in conjunction with farm use, subject to Sections 2.060.1 and 3.43.100.
 11. Utility facility service lines as defined in Section 1.090.
 12. Utility facilities necessary for public service, including wetland waste treatment systems, subject to Section 2.060.1 and provided the standards in Section 3.3.170 are met. This use does not include commercial facilities for the purpose of generating electrical power for public use by sale, or transmission towers over 200 feet in height.

- _____ 13. A facility for the processing of farm crops or the production of biofuel, provided that:
- a. The farm on which the processing facility is located must provide at least one-quarter of the farm crops processed at the facility;
 - b. The building established for the processing facility shall not exceed 10,000 square feet of floor area exclusive of the floor area designated for preparation, storage or other farm use; or, if an existing farm building is used, no more than 10,000 square feet shall be devoted to processing activities within that building; and
 - c. A land division separating the processing facility from the farm operation on which it is located shall not be permitted.

SECTION 3.3.100 Buildings and Uses Permitted Conditionally

In the FG zone, the following uses and activities and their accessory buildings and uses are permitted subject to the provisions of §2.060.1 and Article 39 of this chapter:

1. Commercial activities that are in conjunction with farm use.
2. Operations conducted for:
 - a. Mining and processing of geothermal resources as defined by ORS 522.005 and oil and gas as defined by ORS 520.005.
 - b. Mining of 1,000 cubic yards or more of aggregate and other mineral and other subsurface resources or excavation preparatory to mining of a surface area of more than one acre. However, a permit for mining aggregate shall be issued only for a site included on the county inventory.
 - c. Processing, as defined by ORS 517.750, of aggregate into asphalt or portland cement, except no application shall be approved to allow batching of mineral and aggregate into asphalt cement within two miles of a planted vineyard. Planted vineyard means one or more vineyards totaling 40 acres or more.
 - d. Processing of other mineral resources and other subsurface resources.

3. Private parks, playgrounds, hunting and fishing preserves, and campgrounds, except that such new uses shall not be permitted on land predominantly composed of high value farmland as defined in OAR 660-33. Hunting preserves licensed under ORS 497.248, and which existed prior to July 29, 2003, are not subject to local land use approval, except that complaints against the hunting preserve shall be processed in the manner described in ORS 215.296. Private campgrounds shall be subject to the following:
 - a. Except on a lot or parcel contiguous to a lake or reservoir, private campgrounds shall not be allowed within three miles of an urban growth boundary unless an exception is approved pursuant to ORS 197.732 and OAR 660-004;
 - b. A private campground shall be established on a site, or is contiguous to lands, with a park or other outdoor natural amenity that is accessible for recreational use by the occupants of the campground;
 - c. A private campground shall be designed and integrated into the rural agricultural and forest environment in a manner that protects the natural amenities of the site and provides buffers of existing native trees and vegetation or other natural features between campsites;
 - d. Separate sewer, water or electric service hook-ups shall not be provided to individual camp sites; and
 - e. For campgrounds approved under this section, overnight temporary use in the same campground by a camper or camper's vehicle shall not exceed a total of 30 days during any consecutive 6 month period.
4. Public parks and playgrounds, except that public parks shall be subject to OAR 660-034.
5. Community centers owned by a governmental agency or a nonprofit community organization operated primarily by and for residents of the local rural community. A community center existing on January 1, 2006, may provide services to veterans, including but not limited to emergency and transitional shelter, preparation and service of meals, vocational and educational counseling, and referral to local, state or federal agencies providing medical, mental health, disability income replacement and substance abuse services (but excluding direct delivery of the listed referral services).
6. Golf courses as defined in OAR 660 Division 33.

7. Commercial utility facilities for the purpose of generating power for public use by sale and transmission towers over 200 feet in height. A power generating facility shall not preclude more than 20 acres (or 12 acres on high value farmland) from use as a commercial agricultural enterprise unless an exception is taken pursuant to OAR 660, Division 4.
8. Personal use airports for airplanes and helicopter pads, including associated hangar, maintenance and service facilities. A personal use airport as used in this section means an airstrip restricted except for aircraft emergencies, to use by the owner and, on an infrequent and occasional basis, by his invited guests, and by commercial aviation activities in connection with agricultural operations. No aircraft may be based on a personal use airport other than those owned or controlled by the owner of the airstrip. Exceptions to the activities permitted under this definition may be granted through waiver action by the Aeronautics Division in specific instances. A personal use airport lawfully existing as of September 13, 1975, shall continue to be permitted subject to any applicable regulations of the Aeronautics Division.
9. Home occupation as a use accessory to an existing dwelling.
10. A facility for the primary processing of forest products, provided that such facility is found to not seriously interfere with accepted farming practices and is compatible with farm uses described in ORS 215.203(2). Such a facility may be approved for a one year period which is renewable. These facilities are intended to be only portable or temporary in nature. The primary processing of a forest product, as used in this section, means the use of a portable chipper or stud mill or other similar methods of initial treatment of a forest product in order to enable its shipment to market. Forest products, as used in this section, means timber grown upon a property or land contiguous to the location of the primary processing facility.
11. Solid waste disposal site as provided in ORS 215.283.
12. Dog Kennels, including the breeding, kenneling and training of greyhounds for racing, except that, on high value farmland, new kennels may not be established. Existing kennels on high value farmland may be maintained, enhanced or expanded on the same tract.
13. The propagation, cultivation, maintenance and harvesting of aquatic species that are not under the jurisdiction of the State Fish and Wildlife Commission, or insect species, as provided in ORS 215.283(2).
14. Hardship dwelling meeting criteria of Article 46.
15. Onsite filming and related activities, subject to the provisions of §3.3.150, if the activity exceeds 45 days on any site within a one-year period or involves

erection of sets that would remain in place for longer than 45 days. These activities may include office administrative functions such as payroll and scheduling, and the use of campers, trailers or similar temporary facilities, or other temporary facilities to be used as temporary housing for security personnel.

16. Operations for the extraction and bottling of water.
17. Composting facilities on land not defined as high value farmland and as provided in OAR 660-033-0130.
18. Living history museum as defined in ORS 215.283(2)
19. A landscape contracting business or a business providing landscape architecture services, as defined in ORS 671, provided that the business is part of an operation involved in the growing and marketing of nursery stock on land that constitutes farm use.

Section 3.3.125 Standards for "Owner of Record" Dwellings

A dwelling on a lot or parcel that was lawfully created and was acquired and has been owned continuously by the current owner since prior to January 1, 1985, or acquired by devise or intestate succession from an owner who acquired and had owned the property continuously since prior to January 1, 1985 may be allowed after notifying the County Assessor, and subject to the following:

1. For the purposes of this provision, "owner" includes the wife, husband, son, daughter, mother, father, brother, brother-in-law, sister, sister-in-law, son-in-law, daughter-in-law, mother-in-law, father-in-law, aunt, uncle, niece, nephew, stepparent, stepchild, grandparent, grandchild, of the owner or a business entity owned by any one or combination of these family members.
2. The tract on which the dwelling will be sited:
 - a. does not include a dwelling, and
 - b. if the lot or parcel on which the dwelling will be sited was part of a tract on November 4, 1993, no dwelling exists on another lot or parcel that was part of that tract.
3. The land in the tract is not either:
 - a. Characterized by predominantly irrigated prime, unique or Class I or II soils or non-irrigated prime, unique or Class I or II soils, as designated by the Natural Resources Conservation Service (NRCS) of the U.S. Department of Agriculture (formerly the Soil Conservation Service); or

- b. Planted with "specified perennials" grown for market or research purposes including but not limited to nursery stock, berries, fruits, nuts, Christmas trees or vineyards, but not including seed crops, hay pasture or alfalfa (as demonstrated by the most recent aerial photograph of the Agricultural Stabilization and Conservation Service prior to November 4, 1993).
- c. The soil class, soil rating, or soil designation of a specific lot or parcel may be changed if the property owner:
 - (1) Submits a statement of agreement from the NRCS that the soil data should be adjusted based on new information; or
 - (2) Submits a report from a soils scientist whose credentials are acceptable to the State Department of Agriculture that the soil class, soil rating or other soil designation should be changed; and
 - (3) Submits a statement from the State Department of Agriculture that the Director of Agriculture or the director's designee has reviewed the report described in subparagraph 2) above and finds the analysis in the report to be soundly and scientifically based.
4. The location of the homesite is consistent with the wildlife habitat requirements in Article 32.
5. When the lot or parcel where the dwelling is to be sited is part of a tract, the remaining portions of the tract are consolidated into a single lot or parcel as a condition of approval.
6. If a single family dwelling is established under this section, no additional dwellings may be sited later under the nonfarm dwelling criteria.
7. An Owner of Record Dwelling approval may be transferred by a person who has qualified under this section to any other person after the effective date of the land use decision.
8. Owner of Record Dwelling on High Value Farmland: If the tract on which the dwelling will be sited is composed predominately of high value farmland soils as defined in OAR 660-33, then subsection 3.3.125.3.a) and b) do not apply and the approval is subject to the following additional criteria:
 - a. Notice, pursuant to §2.065.12, is provided to the State Department of Agriculture; and

- b. The hearings body, pursuant to §2.060.3, finds that:
- (1) The lot or parcel cannot practicably be managed for farm use, by itself or in conjunction with other land, due to extraordinary circumstances inherent in the land or its physical setting that do not apply generally to other land in the vicinity.
 - (2) The proposed dwelling will not:
 - (a) Force a significant change in accepted farm or forest practices on surrounding lands devoted to farm or forest use; or
 - (b) Significantly increase the cost of accepted farm or forest practices on surrounding lands devoted to farm or forest use.
 - (3) The dwelling will not materially alter the stability of the overall land use pattern in the area.

SECTION 3.3.150 Conditional Use Approval Standards

The Approving Authority shall consider the following additional criteria which must be met prior to the approval of a conditional use:

The use would not:

- a. Force a significant change in accepted farm or forest practices on surrounding lands devoted to farm or forest use; or
- b. Significantly increase the cost of accepted farm or forest practices on surrounding lands devoted to farm or forest use.

The Approving Authority shall also impose any conditions necessary to meet the applicable criteria so as to preserve agricultural land. Nothing herein shall be construed to require the granting of a conditional use permit. The criteria set forth in this Section shall not apply to farm or forest uses conducted within: parcels with a single family residential dwelling approved under ORS 215.284; an exception area approved under ORS 197.732; or, an acknowledged urban growth boundary.

SECTION 3.3.160 Siting Standard for Dwellings

The following siting standard shall apply to all new dwellings and other specified uses for the purpose of preserving resource lands for resource purposes.

1. To ensure that forest operations and accepted farming practices will not be curtailed or impeded, a nonexclusive resource management covenant shall

be filed by the property owner with the County Clerk prior to development authorization for a dwelling or other use where specified. Such covenant shall specify that owners of adjacent and nearby land shall have: 1) the right to conduct forest operations consistent with the Forest Practices Act and Rules; 2) the right to conduct normal farming practices; and, 3) the right to extract aggregate or rock resources on their properties and that the owner (and subsequent owners) of the subject property waive all rights to object to legal resource management activities.

SECTION 3.3.170 Standards for Authorization of Utility Facility Necessary for Public Service

A utility facility is necessary for public service if the facility must be sited in an exclusive farm use zone in order to provide the service. To demonstrate that a utility facility is necessary:

1. The applicant must show that reasonable alternatives have been considered.
2. The applicant must show that the facility needs to be sited in an exclusive farm use zone due to one or more of the following factors:
 - a. Technical and engineering feasibility;
 - b. The proposed facility is locationally dependent. A utility facility is locationally dependent if it must cross land in one or more areas zoned for exclusive farm use in order to achieve a reasonably direct route or to meet unique geographical needs that cannot be satisfied on other lands;
 - c. Lack of available urban and nonresource lands;
 - d. Availability of existing rights of way;
 - e. Public health and safety; or
 - f. Other requirements of state or federal agencies.
3. Costs associated with any of the factors listed above may be considered, but cost alone may not be the only consideration in determining that a utility facility is necessary for public service. Land costs shall not be included when considering alternative locations for substantially similar utility facilities and the siting of utility facilities that are not substantially similar.
4. The owner of the utility facility shall submit an agreement that establishes the utility facility as the responsible party for restoring to its former condition

those agricultural lands and associated improvements that are damaged or otherwise disturbed by the siting, maintenance, repair or reconstruction of the facility.

5. Clear and objective conditions shall be applied to mitigate and minimize the impacts of the proposed facility, if any, on surrounding lands devoted to farm use in order to prevent a significant change in accepted farm practices or a significant increase in the cost of farm practices on the surrounding farmlands.

Subsections 1 and 2 above shall not apply to interstate natural gas pipelines and associated facilities authorized by and subject to regulation by the Federal Energy Regulatory Commission.

SECTION 3.3.200 Property Development Standards

1. **Property Size:** The creation of a unit of land shall be subject to the following:
 - a. The minimum parcel size shall be 80 acres.
 - b. The following exceptions may apply:
 - (1) Parcel size for non-farm uses, except dwellings, set out in ORS 215.283(2), may be less than the designated minimum parcel size upon a finding that the parcel is not larger than the minimum size necessary for the use, adequate sanitation facilities may be accommodated and negative impacts to surrounding farm or forest lands do not occur.
 - (2) Division of land for public park uses provided that:
 - i. The land division is for the purpose of allowing a provider of public parks or open space, or a not-for-profit land conservation organization, to purchase at least one of the resulting parcels; and
 - ii. If one of the resulting parcels contains a dwelling, that parcel shall be large enough to support continued residential use of the parcel.
 - iii. The parcel created for park or open space uses shall not contain a dwelling, and:

- a) is not eligible for siting a dwelling, except as may be authorized under ORS 195.120;
- b) may not be considered in approving or denying an application for siting any other dwelling;
- c) may not be considered in approving a redesignation or rezoning of forest lands except for a redesignation or rezoning to allow a public park, open space or other natural resource use; and
- d) may not be smaller than 25 acres unless the purpose of the land division is:
 - i) To facilitate the creation of a wildlife or pedestrian corridor or the implementation of a wildlife habitat protection plan; or
 - ii) To allow a transaction in which at least one party is a public park or open space provider, or a not-for-profit land conservation organization, that has cumulative ownership of a least 2,000 acres of open space or park property.

(3) Nonresource divisions for a non-farm dwelling may be less than the minimum parcel size subject to the provisions of Article 44.

c. Land partitions which create parcels greater than 80 acres in size shall be reviewed by the Director as a ministerial action to ensure conformance with the provisions of this ordinance.

2. **Coverage:** No standard established.

3. **Setbacks:** No structure other than a fence or sign shall be located closer than 30 feet from the right-of-way of a public road and 10 feet from all other property lines.

4. **Height:** No standard established.

5. Signs:

- a. Signs shall not extend over a public right-of-way or project beyond the property line.
 - b. Signs shall not be illuminated or capable of movement.
 - c. The total sign area of all signs on the property shall be limited to thirty-two square feet.
- 6. Parking:** Off street parking shall be provided in accordance with Article 35.

ARTICLE 18**(C-3) General Commercial****SECTION 3.18.000 Purpose**

The General Commercial classification is intended to provide areas within which a variety of retail and wholesale business will occur. These areas would serve general community needs with types of activities which need not be conducted wholly within an enclosed building.

SECTION 3.18.050 Permitted Uses

In the C-3 zone, the following uses and their accessory buildings and uses are permitted subject to the general provisions and exceptions set forth by this ordinance.

1. Agricultural supplies and machinery sales rooms.
2. Nurseries for the growing, sale and display of trees, shrubs and flowers.
3. Automobile, truck and motorcycle sales agencies or repair garages.
4. Auto parts store.
5. Builders supplies including retail sales of lumber.
6. Buildings for commercial storage of private household goods, provided all storage shall be entirely within such building.
7. Business and professional office.
8. Funeral parlor, mausoleum or mortuary.
9. General retail sales of previously prepared products.
10. Hotel, Motel.
11. Medical and dental office.
12. Mobile home and recreational vehicle sales.
13. Outdoor advertising in conformance with state siting standards set forth in Oregon Revised Statutes and Oregon Administrative Rules.
14. Places of amusement such as billiard parlors, taverns, bowling alleys, drive-in theaters, dance halls and games of skill and science.

15. Plumbing and sheet metal shop.
16. Professional play fields such as baseball and football.
17. Public and semipublic buildings and uses.
18. Retail dry cleaning establishment.
19. Second-hand stores if conducted wholly within an enclosed building.
20. Stadiums.
21. Veterinary clinic.
22. Single family residence in conjunction with a use listed in this article.
23. Dwelling above a commercial structure; subject to the development standards of the R-3 zone classification.
24. Other uses similar to the above.
25. Other uses permitted by §3.17.050 (C-2 Zone) except those uses permitted by §3.16.050 (C-T Zone) unless such uses are otherwise specifically permitted in the C-2 Zone.

SECTION 3.18.100 Buildings and Uses Permitted Conditionally

In the C-3 zone, the following uses and activities and their accessory buildings and uses are permitted subject to the provisions of §2.060.1 and Article 39 of this chapter.

1. Stores (retail and wholesale) and business uses similar to those listed as permitted uses in the C-3 zone and normally located in a commercial district provided that:
 - a. Where there is a manufacturing, compounding, processing or treatment of products for wholesale, a minimum of 25% of the total floor area shall be used for retail sales.
 - b. Use is not objectionable due to odor, dust, smoke, noise, vibration or appearance.
2. Outdoor sales such as flea markets or swap meets of new or second-hand goods.

SECTION 3.18.150 Property Development Standards

1. **Area:** The area requirements for residential uses shall be the same as the R-3 zone.
2. **Coverage:** Full coverage is allowable, provided minimum loading space and setbacks have been maintained.
3. **Setbacks:**
 - a. Front Yard: Front yards will not be required except for residential uses which shall conform to the setbacks established in the R-3 zone.
 - b. Side Yard: Except for residential use, side yards will not be required, but if side yards are created they shall be a minimum of 3 feet wide. Residential uses shall conform to the minimum setbacks of the R-3 zone.
 - c. Rear Yard: No rear yard is required when property in the C-3 zone abuts property in a commercial or industrial zone.

When not abutting a commercial or industrial zone, there shall be a rear yard of not less than ten feet extending the full width of the subject property; provided, however, alleys contiguous to or within the property being used may be included in the required setback.
 - d. Vision Clearance: Vision clearance for corner properties shall be at least 10 feet.
4. **Height:** No standard established.
5. **Signs:** No standard established.
6. **Parking:** Off street parking shall be provided in accordance with Article 35.

ARTICLE 17**(C-2) Community Commercial****SECTION 3.17.000 Purpose**

The Community Commercial classification is intended to provide areas for localized shopping facilities. It is intended to preserve and enhance areas with a wide range of retail sales and service establishments serving both long and short term needs in compact locations.

SECTION 3.17.050 Permitted Uses

In the C-2 zone, the following uses and their accessory buildings and uses are permitted subject to the general provisions and exceptions set forth by this ordinance and provided that these uses are conducted wholly within enclosed structures.

1. Antique or curio shops.
2. Art shop, gallery, studio and supplies.
3. Automobile service station.
4. Bakery.
5. Bank.
6. Barber shop or beauty shop.
7. Book or stationery store.
8. Business and professional offices.
9. Catering service.
10. Clothes cleaning or laundry agency.
11. Clubs or lodges, fraternal and religious associations.
12. Confectionery store.
13. Delicatessen.
14. Department store.

15. Drug store.
16. Dry goods or notions store.
17. Florist or gift shop.
18. Furniture and household goods store.
19. Grocery store.
20. Handicraft shop.
21. Hardware store.
22. Laundromat.
23. Manufacture of handicraft goods for sale on premises only such as wooden wares, pottery, tile, archery and seashell wares.
24. Meat market.
25. Medical and dental clinics.
26. Millinery or custom dressmaking shops.
27. Mobile Home Parks, subject to the provisions of Article 51, except that no mobile home parks shall be allowed within urban growth boundaries.
28. Musical instruments and supplies store.
29. Office supplies and equipment store.
30. Paint and wallpaper supplies store.
31. Photography studio or shop.
32. Pottery sales.
33. Printing.
34. Public and semipublic buildings and uses.
35. Public parking areas developed in accordance with provisions established under Article 35.
36. Restaurants, cafes.

37. Seed and garden supplies.
38. Shoe or shoe repair shop.
39. Sporting goods.
40. Surgical supplies and equipment.
41. Tailor, clothing, and wearing apparel shops.
42. Telephone and telegraph exchanges.
43. Theaters (indoor).
44. Nurseries for the growing, sale and display of trees, shrubs and flowers. This use need not be conducted within enclosed structures.
45. Retail dry cleaning establishment.
46. Single family residence in conjunction with a use listed in this article.
47. Dwelling above a commercial structure, subject to the development standards of the R-2 zone classification.
48. Other uses permitted by §3.16.050 (CT zone).
49. Other uses similar to the above.

SECTION 3.17.075 Uses Permitted With Standards

In the C-2 zone, the following uses and activities are permitted subject to specified standards and the general provisions and exceptions set forth by this Ordinance.

1. Veterinary Clinic, provided the use shall be conducted wholly within enclosed structures and there shall be no outside animal runs.

SECTION 3.17.100 Buildings and Uses Permitted Conditionally

In the C-2 zone, the following uses and activities and their accessory buildings and uses are permitted subject to the provisions of §2.060.1 and Article 39 of this chapter and provided that these uses and activities are conducted wholly within enclosed structures unless otherwise specified below:

1. Outdoor activities accessory to a Veterinary Clinic, including outside animal runs.

SECTION 3.17.150 Property Development Standards

1. **Size:** The minimum property area for residential uses shall be the same as the R-3 zone.
2. **Coverage:** Full coverage is allowable, provided minimum loading space and setbacks have been maintained.
3. **Setbacks:**
 - a. Front Yard: Front yards will not be required except setback for residential uses shall conform to those established in the R-3 zone.
 - b. Side Yard: Except for residential uses, side yards will not be required but if side yards are created they shall be a minimum of 3 feet wide. Residential uses shall conform to the minimum setbacks of the R-3 zone.
 - c. Rear Yard: No rear yard is required when property in the C-2 zone abuts property in a commercial or industrial zone.

When not abutting a commercial or industrial zone, there shall be a rear yard of not less than ten feet extending the full width of the subject property; provided, however, alleys contiguous to or within the property being used may be included in the required setback.
 - d. Vision Clearance: Vision clearance for commercial properties shall be at least 10 feet.
4. **Height:** No standard established.
5. **Signs:** No standard established.
6. **Parking:** Off-street parking shall be provided in accordance with Article 35.

ARTICLE 15

(C-1) Limited Commercial

SECTION 3.15.000 Purpose

The Limited Commercial classification provides for a desirable mixing of residential land uses with limited commercial land uses in close proximity to adjacent residential districts. The zone is also intended to serve local neighborhood needs rather than provide a full commercial area for an entire community. The limited commercial uses allowed in this district are selected for their compatibility with residential uses and ability to meet the frequently recurring needs of the neighborhood. Normally, the district is to be applied as a small compact area conveniently located in or near residential areas and along thoroughfares and may be utilized in areas designated as committed to nonresource use by the Comprehensive Plan.

SECTION 3.15.050 Permitted Uses

In the C-1 zone, the following uses and their accessory buildings and uses are permitted subject to the general provisions and exceptions set forth by this ordinance.

1. Business and professional offices.
2. Pharmacy.
3. Medical and dental clinic.
4. Grocery store, limited to 2,500 square feet in area.
5. Public and semipublic buildings and uses.
6. Parks, playgrounds, or community centers.
7. Single family residence in conjunction with a permitted use.

SECTION 3.15.100 Buildings and Uses Permitted Conditionally

In the C-1 zone, the following uses and activities and their accessory buildings and uses are permitted subject to the provisions of §2.060.1 and Article 39 of this chapter.

1. Mobile Home Parks, subject to the provisions of Article 51, except that no mobile home parks shall be allowed within urban growth boundaries.
2. Veterinary clinic.

3. Uses similar to permitted uses but not listed and shown to meet the intent and purpose of the zone.
4. Signs which do not conform to the requirements of §3.15.150.5.

SECTION 3.15.150 Property Development Standards

1. **Area:**
 - a. Lots or parcels shall have a minimum area of 7,500 square feet.
 - b. Lots or parcels shall have a minimum average width of 70 feet.
2. **Coverage:** Not over 60 percent of the property shall be covered by all buildings located thereon.
3. **Setbacks:**
 - a. Front Yard: No structure other than a fence or sign shall be located closer than 15 feet from the front property line.
 - b. Side Yard: No structure other than a fence or sign shall be located closer than 5 feet from side property lines for interior properties, 10 feet from exterior side property lines for corner building sites.
 - c. Vision Clearance: Vision clearance on corner properties shall be a minimum of 20 feet.
4. **Height:** Maximum height of all structures shall be 35 feet.
5. **Signs:**
 - a. Exterior signs shall be limited to two per business establishment.
 - b. Signs shall be limited to 32 square feet.
 - c. Signs may be illuminated, but shall not be of the flashing or blinking type.
 - d. No sign shall project above the height of the tallest structure on the lot.
6. **Parking:** Off-street parking shall be provided in accordance with Article 35.

ARTICLE 8

(5R) Rural Residential-5

SECTION 3.8.000 Purpose

The Rural Residential-5 classification is intended to provide for low density rural homesites in an open space environment in order to encourage the continued existence of rural family life. The 5R zone is also intended to provide a transition from more intense residential development to the agriculture, timber and open space areas of the County. The zone may be applied to areas committed to nonresource use or reserved for rural residential expansion at this density, as specifically provided in the Douglas County Comprehensive Plan.

SECTION 3.8.050 Permitted Uses

In the 5R Zone, the following uses and activities and their accessory buildings and uses are permitted subject to the general provisions and exceptions set forth by this ordinance:

1. One single-family dwelling.
2. Buildings accessory to a single-family dwelling such as garages, storerooms, woodsheds, laundry, playhouses, greenhouses, hobby shop, animal or fowl shelter, or similar and related accessory uses provided the structure does not exceed 1,500 square feet in size.
3. Additional single-family dwellings, to provide residence for an immediate family member or members of the owner, provided that a minimum average density of five acres per dwelling shall be maintained, and proper sanitation approvals are obtained.
4. Farm uses and/or animals, subject to conditions and limitations provided herein:
 - a. The total number of livestock allowed on a property shall be limited to the area of the property divided by the total minimum area required for each animal listed below:
 - (1) One horse, cow or swine per acre; or
 - (2) One goat, sheep, llama, alpaca or emu per half acre.
 - b. A minimum of five hundred square feet of area shall be required for each chicken, other fowl or rabbit kept on the property.

- c. The number of colonies of bees allowed on a property shall be limited to one colony for each ten thousand square feet of area and shall not be located closer than 50 feet from any property line.
 - d. Animals and fowl shall be properly caged or housed, and proper sanitation shall be maintained.
5. Forest uses, including the propagation and harvesting of forest products.
 6. Roadside stand.
 7. Limited Home Occupation.
 8. Publicly owned park, playground, or golf course.
 9. Public and semipublic buildings, structures and uses essential to the physical, social and economic welfare of an area, including but not limited to fire stations, schools, granges, community halls and churches.
 10. Fish and wildlife management.
 11. Utility and communication facilities necessary for public service.

SECTION 3.8.075 Uses Permitted With Standards

In the 5R Zone, the following uses and activities are permitted subject to specified standards and the general provisions and exceptions set forth by this Ordinance.

Item 1 in this use category shall be subject to written consent from all surrounding adjacent property owners. Adjacent property owner consent shall be obtained by the applicant and submitted to the Planning Department on forms provided by the County. The surrounding adjacent property owners shall be identified by the Planning Department after a pre-application conference has been held and the fee paid (same fee as if the application were for a conditional use). Adjacent owner consent signatures shall be verified by sending a copy of the signed consent form to each identified owner of record. If no negative comments are received within 12 days, the request shall be granted. If adjacent owner consent cannot be obtained, the request shall then be processed as a conditional use pursuant to §2.060.1.

1. Buildings accessory to a single-family dwelling in excess of 1,500 square feet.

SECTION 3.8.100 Buildings and Uses Permitted Conditionally

In the 5R zone, the following uses and activities and their accessory buildings and uses are permitted, subject to the provisions of §2.060.1 and Article 39 of this chapter:

1. Private park, playground, or golf course.
2. Nursery for the growing, sale and display of trees, shrubs and flowers.
3. Kennels.
4. Aggregate and mineral extraction.
5. Home Occupation.

SECTION 3.8.150 Property Development Standards

1. **Size:** The minimum property size for which a building permit or placement permit for a dwelling may be issued is five (5) acres, or as otherwise provided in the Ordinance.
2. **Coverage:** Not over 40 percent of the lot area of any building site shall be covered by all buildings located thereon.
3. **Setbacks:** No structure other than a fence or sign shall be located closer than 30 feet from the right-of-way of a public road or from an easement serving more than 15 units of land, 10 feet from the right-of-way of other private road easements, and 10 feet from all other property lines.
4. **Height:** Maximum height of any structure shall be 45 feet.
5. **Signs:**
 - a. Signs shall not extend over a public right-of-way or project beyond the property line.
 - b. Signs shall not be illuminated or capable of movement.
 - c. The total sign area of all signs on the property shall be limited to thirty-two square feet.
6. **Parking:** Off street parking shall be provided in accordance with Article 35.

ARTICLE 11

(RS) Suburban Residential

SECTION 3.11.000 Purpose

The Suburban Residential classification is intended to provide for a primarily single-family suburban environment within which certain limited agricultural pursuits may be carried on. It is intended to be applied in those areas which are within adopted Urban Growth Boundaries, yet have limited urban services.

SECTION 3.11.050 Permitted Uses

In the RS Zone, the following uses and their accessory buildings and uses are permitted subject to the general provisions and exceptions set forth by this ordinance:

1. A single-family dwelling.
2. Duplex, provided a density of one dwelling per 15,000 square feet is maintained.
3. Buildings accessory to a single-family dwelling such as garages, storerooms, woodsheds, laundry, playhouses, greenhouses, hobby shop, animal or fowl shelter, or similar and related uses provided the structure does not exceed 1,500 square feet in size and that there shall not be more than four buildings allowed as accessory to any dwelling.
4. Farm use and/or animals, subject to conditions and limitations provided herein:
 - a. The total number of cows, horses, sheep or goats allowed on a property shall be limited to the area of the property divided by the total minimum area required for each animal listed below:
 - (1) One horse or cow per acre; or
 - (2) One goat or sheep per half acre.
 - b. A minimum of five hundred square feet of property area shall be required for each chicken, other fowl or rabbit kept on the property.
 - c. The number of colonies of bees allowed on a property shall be limited to one colony for each ten thousand square feet of lot area and shall be located no closer than 50 feet from any property line.

- d. The raising of swine is not permitted in the RS zone.
 - e. Animal runs or barns, and fowl pens shall be located no closer than fifty feet from any property line, or natural or other drainage channel.
 - f. Animals and fowl shall be properly caged or housed, and proper sanitation shall be maintained.
- 5. Limited Home Occupation.
 - 6. Bed and Breakfast.

SECTION 3.11.075 Uses Permitted With Standards

In the RS Zone, the following uses and activities are permitted subject to specified standards and the general provisions and exceptions set forth by this Ordinance.

Items 3, 4 and 5 in this use category shall be subject to written consent from all surrounding adjacent property owners. Adjacent property owner consent shall be obtained by the applicant and submitted to the Planning Department on forms provided by the County. The surrounding adjacent property owners shall be identified by the Planning Department after a pre-application conference has been held and the fee paid (same fee as if the application were for a conditional use). Adjacent owner consent signatures shall be verified by sending a copy of the signed consent form to each identified owner of record. If no negative comments are received within 12 days, the request shall be granted. If adjacent owner consent cannot be obtained, the request shall then be processed as a conditional use pursuant to §2.060.1.

- 1. Zero lot line residential developments, subject to provisions of Article 31.
- 2. Mobile Home Parks subject to the density of the RS Zone and the provisions of Article 51.
- 3. Privately operated kindergartens or day nurseries.
- 4. Residential Facility.
- 5. Buildings accessory to a single-family dwelling in excess of 1,500 square feet.

SECTION 3.11.100 Buildings and Uses Permitted Conditionally

In the RS zone, the following uses and activities and their accessory buildings and uses are permitted subject to the provisions of §2.060.1 and Article 39 of this chapter:

- 1. Park, playground or golf course.

2. Public and semipublic buildings, structures and uses essential to the physical, social and economic welfare of an area, including but not limited to schools, libraries, fire stations, granges, community halls, pumping stations, and substations. Churches shall maintain setbacks from side and rear property lines of at least 20 feet. Alleys contiguous to or within the property may be included in the requested setback.
3. Nursery for the growing, sale and display of trees, shrubs and flowers.

SECTION 3.11.150 Property Development Standards

1. **Area:**
 - a. Minimum property size is one acre or larger when determined for proper sewage disposal by the appropriate sanitary authority in areas not served by a community water supply system or a community sanitary sewer system.
 - b. In areas served by community water supply system or by community sanitary sewer system, or both, lots or parcels may have a minimum area of 15,000 square feet.
 - c. Minimum average width shall be 100 feet.
2. **Coverage:** Not over 40 percent of the property shall be covered by all buildings located thereon.
3. **Setbacks:**
 - a. Front Yard: No structure other than a fence or sign shall be located closer than 15 feet from the front property line.
 - b. Side Yard: No structure other than a fence or sign shall be located closer than 5 feet from side property lines for interior properties and 10 feet from exterior side property lines for corner building sites.
 - c. Rear Yard: No structure other than a fence or sign shall be located closer than 5 feet from the rear property line.
 - d. Vision Clearance: Vision clearance on corner properties shall be a minimum of 20 feet.
4. **Height:** Maximum height for all structures shall be 35 feet, except hospitals, public buildings or churches which may be increased in height to 45 feet.

Appendix F
Interchange 119/120 Conditions Report

Transportation Conditions Report

I-5 Interchanges 119/120

Douglas County, Oregon

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October, 2005

EXECUTIVE SUMMARY

This document comprises the Interchange Area Study for Interchanges 119 and 120 (Winston and Green). The interchanges are located less than one mile apart, approximately five miles south of Roseburg, and serve the unincorporated community of Green in Douglas County.

The Conditions Report project is intended as the first step in planning for long-range improvements. This initial step is needed to gain a better understanding of both the current and the future deficiencies of these two interchanges. In the future, an Interchange Area Management Plan will be drafted using information from this Conditions Report to determine a preferred build solution that will solve the transportation problems within this area. Both interchanges have structurally deficient bridges and traffic operations limitations. The goal of this report is to identify and document conditions, limitations, opportunities and needs so that subsequent planning can address all relevant issues and focus on those that are most important. At the same time, long-range options should not be precluded by short-range solutions to immediate problems.

The conditions report contains a review of relevant plans and policies, including the Statewide Planning Goals, 1999 Oregon Highway Plan, Oregon Administrative Rules, Douglas County Transportation System Plan, Green Urban Unincorporated Circulation Plan, Winston Transportation System Plan, Greater Roseburg Area Transportation Study, 2000 I-5 State of the Interstate Report, and various traffic impact studies.

Operational analyses at planning area intersections and freeway facilities under existing and year 2025 no-build conditions were conducted and summarized in the report. The analyses confirmed that several intersections are approaching or exceeding ODOT operations standards. The I-5 southbound ramp terminals at Old Highway 99 are currently well over capacity with long queue lengths. The intersection of OR 42 with Carnes Road marginally exceeds ODOT operations standards under existing traffic conditions and approaches capacity under year 2025 traffic conditions. Preliminary analysis showed the intersection of Old Highway 99 and Grant Smith Road to marginally exceed ODOT standards under existing conditions, but still well under capacity. However, due to an imbalanced distribution of vehicles on the eastbound approaches caused by the Interchange 119 configuration, actual operations are much worse. Further analysis was conducted to model the detrimental effects of lane imbalance on this approach, and resulted in longer queue lengths and poor overall operation.

An analysis of the freeway ramps was conducted to test the benefits of adding a northbound auxiliary (weave) lane between the two interchanges. Results of this analysis showed that an auxiliary lane would improve operations somewhat over existing conditions. However, adding a weaving section would increase turbulence and increase the number of potential conflicts due to the introduction of a new lane-change maneuver for northbound traffic exiting at Interchange 120.

The report also contains a safety analysis, a listing of planned and programmed projects in the area, an examination of existing and future land uses, and a review of environmental constraints. The report also identifies deficiencies and needs related to roadway geometry, structures, operations, safety and access management standards. Additionally, the report identifies freight movement patterns and needs.

This conditions report has been prepared with participation of Douglas County, the City of Roseburg the Oregon Department of Transportation, and with input from a variety of stakeholders and the general public.

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1 INTRODUCTION

1.1 Project Study Area

Interstate 5 (I-5) Interchanges 119 and 120 are located approximately 5 miles south of Roseburg, serve the unincorporated community of Green in Douglas County and provide important connections to Roseburg and Winston. The two interchanges are located approximately 0.7 miles apart. Interchange 119 is a trumpet B form and generally exhibits good geometrics and operations. Interchange 120 is a modified partial cloverleaf, with constrained geometry, which results in poor operational characteristics, particularly at the southbound off-ramp. In addition, there is no northbound on-ramp to Interstate 5 at this location. Old Highway 99 South parallels Interstate 5 and crosses under the freeway just north of Interchange 120. The Coos Bay – Roseburg Highway (OR 42) enters Interstate 5 from the west at Interchange 119. Both Interstate 5 and Old Highway 99 experience peak hour commuter traffic between Green and Roseburg. Figure 1 shows the Interchange 119/120 planning area.

1.2 Project Description

The Interchanges 119 and 120 Conditions Report project is intended as the first step in planning for long-range improvements. This initial step is needed to gain a better understanding of both the current and the future operational deficiencies of these two interchanges. In the future, an Interchange Area Management Plan will be drafted using information from this conditions report to determine a preferred build solution that will solve the transportation problems within this area.

Both interchanges have structurally deficient bridges and traffic operations limitations. Additional planning is needed to ensure that long-range options are not precluded by short-range solutions to immediate problems. The goal of this initial step is to identify and document conditions, limitations, opportunities and needs so that subsequent planning can address all relevant issues and focus on those that are most important.

Planned local development will affect the operation of both interchanges. Recent zone changes have been approved by Douglas County in the study area that will likely lead to increased demand affecting both interchanges. Due to increased travel on I-5 and local growth in recent years, state and local officials, area businesses, and residents have developed a common understanding that both interchanges need to be evaluated and possibly improved to accommodate future travel demand.

The purpose of this initial planning effort is to evaluate the operation of Interchanges 119 and 120, assess the limitations and issues of concern, and, in general terms, assess the long-range needs attributable to planned development in the area. Because of the proximity of the interchanges to each other this work order is set up to evaluate how the interchanges perform independently as well as in combination as part of the Interstate 5 system serving the Green area. The work will also include a general assessment of the effect of the state and local highway system, within the study area, on the performance and traffic at the interchanges and on I-5.

One or more subsequent phases will be initiated after the completion of this work order to determine how best to improve the interchanges and the local transportation facilities that affect interchange operations.

This report was coordinated with the work to complete the I-5 Interchange 123 Interchange Area Management Plan.

1.3 Agency Participation

This conditions report has been prepared with participation of Douglas County, the City of Roseburg the Oregon Department of Transportation, and with input from a variety of stakeholders and the general public. Contacts were made with stakeholders interested in or concerned about future modifications to the interchanges and the possible effects on existing land uses, access, and the local road system.

A Technical Advisory Committee (TAC) informed and guided the preparation of the work products developed for the report. The TAC met five times during the course of the project. TAC members included representatives from the Douglas County Planning and Road departments, and the City of Roseburg planning department. ODOT TAC members included staff from Region 3 Planning, Preliminary Design, Transportation Analysis Unit, Traffic/Region Access Management Engineer, Right-of-Way, and the Bridge Package Consultant Project Manager. In addition, two public meetings took place during the course of the project. The first public meeting took place on September 9, 2004 during a meeting of the City of Roseburg Public Works Commission. The second public meeting took place on May 17th, 2005 during a meeting of the Roseburg/Green Planning Advisory Committee.

1.4 Interchange Function

Interchanges 119 and 120 are located outside the UGB of the City of Roseburg. However, the interchanges serve commuter traffic between Roseburg and the City of Winston as well as the unincorporated community of Green.

Interchange 119 connects I-5 with OR 42, classified by ODOT as a Statewide Highway and Expressway. Interchange 120 provides a partial connection with Old Highway 99 South, a County Arterial. The primary function of interstate freeways is to serve inter-regional and interstate passenger and freight traffic. The function of Statewide-level highways is to provide inter-regional and inter-urban mobility (connecting larger urban areas, ports and other locations that are not served by the Interstate system). The function of County Arterials is to provide through traffic movement between major communities in Douglas County, and distribute traffic between the State Highway system and the local streets network.

The intended function of Interchanges 119 and 120 is to safely and efficiently accommodate future traffic demands generated by population and employment growth in the region.

2 STAKEHOLDER IDENTIFICATION AND INTERVIEWS

2.1 Background

A specific task identified for this project involved interviewing interested parties with knowledge of the interchanges. With the help of the project's Technical Advisory Committee, the consulting team identified individuals that potentially had valuable information and insight into transportation and land use planning-related issues at the interchanges. This initial list ultimately was narrowed down to a representative list of 13 individuals. The individuals included business property owners, homeowners, representatives of distribution and manufacturing interests, visitor or traveler service providers, and economic development representatives. These individuals were then interviewed via telephone during the last two weeks of June 2004 to identify issues associated with the 119/120 Interchange area. This section provides an overview of the stakeholder interviews. The complete summary report from the stakeholder interviews, including a list of the stakeholders interviewed and a complete list of the interview questions and responses can be found in Appendix A.

2.2 Interview Summary

There were some topics or themes that were common to most of the responses to the interview questions. Most respondents were generally pleased with present operations at all three interchanges and did not have concerns regarding the interchanges' ability to handle current levels of traffic efficiently and safely. However, those interviewed did make a point of mentioning that the design of one or more of the interchanges was potentially dangerous. The majority of comments confirmed that current traffic conditions at the interchanges were not seen as having negative impacts to businesses or properties in the area. Words such as "workable," "acceptable," and "serves needs well" were used to describe current traffic conditions at the intersections, with one contrary comment pointedly saying that operations at Interchange 120 were unsatisfactory¹.

Several of those interviewed emphasized the growth in Roseburg, Winston and Coos Bay and noted that this growth will likely have negative impacts on the interchanges in the future. Most interviewees anticipated increased growth in the immediate vicinity of the interchanges as well, noting the amount and location of vacant and redevelopable land. Increases in light industrial and distribution-warehousing was anticipated for the Interchange 119/120 area. One individual interviewed predicted more residential growth in the Interchange 120 and Green area, citing the relative affordability of housing prices.

The interviews highlighted that most people view the three interchanges' primary function to access property in the immediate area. In the case of the 119 exit, access to the coast and other tourist destinations (such as the Wildlife Safari in Winston), as well as access to the industrial park in Green, were also cited as a primary functions. Most of those interviewed expressed a vested interest in one particular interchange, typically the one closest physically to their property or place of business.

There were differing opinions regarding the function of Interchange 120; business representatives pointed to the necessity of the interchange for commercial uses and truck

¹ It was unclear if this comment was reacting to current construction at the Interchange, but the implication was that this Interchange doesn't work well under normal conditions.

movement, but another interviewee saw Interchange 120 serving predominantly residential traffic west of the freeway and in the Green area, with 119 being the major commercial exit.

The recent construction at Interchange 119 was cited the most as an improvement that had a positive effect on traffic movement in the area. There were few comments directed specifically at access issues, beyond concerns that current access be retained, both during and after any future construction at the interchanges.

3 PLAN AND POLICY REVIEW

This section summarizes the relevant plans and policies and identifies how they influence planning for Interchanges 119 and 120. The complete technical memorandum can be found in Appendix B.

This section reviews the following transportation and land use plans and regulations:

- Statewide Planning Goals 2 (Land Use Planning), 11 (Public Facilities Planning), and 12 (Transportation) , and 14 (Urbanization)
- 1999 Oregon Highway Plan (OHP);
- Oregon Administrative Rule (OAR) 734-051 (ODOT Division 51 Interchange Area Access Management Spacing Standards for Approaches);
- Douglas County Transportation System Plan (Adopted 2001);
- Green Urban Unincorporated Circulation Plan (adopted as part of the Douglas County TSP, 2001);
- City of Winston Transportation System Plan (2003);
- Greater Roseburg Area Transportation Study (GRATS) (Final Report 1996);
- 2000 I-5 State of the Interstate Report; and
- Traffic impact studies (developed as part of land use applications submitted to Douglas County).

3.1 Statewide Planning Goal 2 and OAR 660, Division 4

Goal 2, Land Use Planning, requires that a land use planning process and policy framework be established as a basis for all decisions and actions relating to the use of land. Goal 2 is important because:

- 1) It requires planning coordination between ODOT and Douglas County to address future impacts to the area impacted by proposed interchange improvements, as well as the future operation of the interchanges;
- 2) It requires that land use decisions and actions be supported by “substantial evidence,” and for that evidence to be found as adequate to support findings of fact; and
- 3) It requires that local/state/federal level plans and actions related to land use be “consistent with the comprehensive plans of cities and counties and regional plans adopted under ORS Chapter 268.”

3.2 Statewide Planning Goal 11 and OAR 660, Division 11.

Statewide Planning Goal 11. Public Facilities Planning, requires cities and counties 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. The goal requires that urban and rural development be “guided and supported by types and levels of urban and rural public facilities and services appropriate for, but limited to, the needs and requirements of the urban, urbanizable and rural areas to be served.” The Unincorporated Urban Area of Green is growing and appropriate transportation facilities are needed to manage impacts from that growth.

3.3 Statewide Planning Goal 12 and OAR 660, Division 12.

Goal 12, Transportation, requires cities, counties, metropolitan planning organizations and ODOT to provide and encourage a safe, convenient and economic transportation system. This is accomplished through development of Transportation System Plans (TSPs) based on inventories of local, regional and state transportation needs. Goal 12 is implemented through OAR 660, Division 12, the Transportation Planning Rule (TPR). The TPR requires local governments to adopt land use regulations consistent with state and federal requirements “to protect transportation facilities, corridors and sites for their identified functions OAR 660-012-0045(2).” This policy is achieved through access control measures, road operations standards, and coordinated review of future land use decisions affecting transportation facilities between local jurisdictions and ODOT. See also OAR 660-012-0060.

LCDC’s rules implementing Goal 12 do not regulate access management. ODOT adopted OAR 734, Chapter 51 to address access management and it is expected that ODOT, as part of this project, will engage in access management consistent with its Access Management Rule.

3.4 Statewide Planning Goal 14, and OAR 660, Divisions 14 and 22

Goal 14, Urbanization, is important because it focuses development within relatively compact boundaries of Urban Growth Boundaries (UGBs) and to a lesser degree in unincorporated communities. This compact development helps contain the costs of public facilities such as transportation by reducing the need for facilities further out and helping jurisdictions better anticipate where growth will occur. The Interchange 119 and 120 Study Area includes land in the unincorporated community of Green. Goal 14 (OAR 660, Division 22) recognizes established development centers that were never incorporated yet have many qualities of a small city.

3.5 1999 Oregon Highway Plan

The 1999 Oregon Highway Plan (OHP) policies applicable to planning for interchanges 119 and 120 include four items under Goal 1 (System Definition). Policy 1B (Land Use and Transportation) recognizes the need for coordination between state and local jurisdictions. Policy 1C (State Highway Freight System) states the need to balance the movement of goods and services with other uses. 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. Policy 1G (Major Improvements) requires maintaining performance and improving safety by improving efficiency and management before adding capacity.

Under Goal 2: System Management, Policy 2B (Off-System Improvements) helps local jurisdictions adopt land use and access management policies. Policy 2F (Traffic Safety) improves the safety of the highway system. While an IAMP is not part of this project, future proposed improvements to the interchanges will require preparation of an IAMP and Access Management Plan that will address access management standards. One component of the IAMP will be an intergovernmental agreement between ODOT and the local jurisdiction(s) to implement access management solutions.

Under Goal 3: Access Management, Policy 3A (Classification and Spacing Standards) sets access spacing standards for driveways on, and approaches to, the state highway system. Policy 3C (Interchange Access Management Areas) sets policy for managing interchange areas by developing IAMPs. Policy 3D (Deviations) establishes general policies and procedures for deviations from adopted access management standards and policies.

This report compares access spacing with adopted access standards (existing physical features summary). Any future suggested improvements for the interchange would need to comply with this policy and improve any deficiencies identified. Future improvements to the interchange may affect the current configuration of approaches and access points.

3.6 Oregon Administrative Rule 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 access spacing standards and the purpose and components of an access management plan.

3.7 Green Transportation System Plan (Adopted August 2001) and Douglas County Transportation System Plan (Adopted 2001)

The Green Transportation System Plan (TSP) was adopted in 2001 to provide a detailed analysis of transportation facilities and levels of service for the Green Unincorporated Urban Area. The TSP inventories and analyzes the current transportation system and predicts conditions at buildout based on a buildable lands inventory and on population projections.

The TSP does not advocate any new projects directly impacting Interchanges 119 or 120. Key projects identified as solutions to Green's capacity, circulation, and safety issues include: improving traffic circulation by constructing multiple, local road connections; enhancing safety and circulation on and near OR 42 by closing some accesses and constructing a frontage road; and improving capacity and enhancing safety at Kelly's Corner by adding right-turn lanes on OR 42 in both directions, widening the local legs, moving the signal poles and highway signs away from the intersection, and re-phasing the signals.

The Green TSP was used as the basis of the Green Urban Area Circulation Plan that is part of the Douglas County TSP. The Douglas County Transportation System Plan (TSP) was adopted in 2001 and establishes a system of transportation facilities and level of service adequate to meet the county's transportation needs. This project is consistent with the goals and policies of the county's TSP, which includes goals to "provide and encourage a safe, convenient and

economical transportation system.” The TSP does not list any projects related to interchanges 119 or 120.

3.7.1 Green Urban Unincorporated Circulation Plan (2001)

The purpose of the Green Urban Unincorporated Circulation Plan is to provide circulation policies and findings for the unincorporated urban areas and to address transportation issues within those unincorporated areas. The findings described in The Green Circulation Plan discuss previous transportation improvements within the community, including relocating the Carnes Road/Old Highway 99 intersection to improve intersection safety. The plan also proposes future improvements, including providing new roadways or increasing capacity of existing roadways within the planning area. Proposed new roadways near I-5 would serve future development of an industrial area between Carnes Road and the Central Oregon Pacific Railroad and a vacant industrial area on the east side of I-5. No new connection to I-5 is proposed in the Green Circulation Plan. Future interchange improvements, based on the 2025 Needs Summary Report to be developed as part of the Conditions Report, will need to consider accessibility from the proposed new roadways in the industrial areas, as adopted in the circulation plan.

3.8 City of Winston Transportation System Plan (2003)

The City of Winston is located west of interchanges 119 and 120, which are outside of the city’s urban growth boundary (UGB). However, the Winston TSP may apply if improvements were to occur to Old Highway 99/OR 42 within the Winston UGB that connects with I-5 at interchange 120. This project’s objectives are consistent with the goals and policies of the Winston TSP; but it is possible that none of the proposed improvements will be within the city’s UGB. If no improvements are proposed within the UGB, the Winston TSP will not be applicable to this planning project.

3.9 Greater Roseburg Area Transportation Study (GRATS) (Final Report 1996)

The Greater Roseburg Area Transportation Study (GRATS) is a regional framework study that identifies multimodal strategies to manage growth and the communities’ transportation needs. Several goals are described in the study and are relevant to the project; they include accessibility, mobility, affordability, safety, flexibility and connectivity. Although the GRATS provides some framework for planning in the region, it was not adopted. It was built on an older model and has subsequently been replaced by more current transportation system plans.

3.10I-5 State of the Interstate Report

The I-5 State of the Interstate Report (2000) describes the existing and forecasted operating, geometric, safety, and physical conditions for the I-5 mainline and interchanges within Oregon. The following information within this report is relevant to interchanges 119 and 120. The State of the Interstate Report uses highway segments as a unit of analysis; the Conditions Report study area stretches from approximately milepost (MP) 119.24, at Grant Smith Road, to MP 120.62 at the South Umpqua River. The Conditions Report being prepared for interchanges 119 and 120 will incorporate information from the I-5 Report.

The Interstate Report references the 1997 Pavement Conditions Report. The information is outdated, as the 2003 Pavement Conditions Report is available. The Oregon State Highway System 2003 Pavement Conditions map for Region 3 (December 2003) shows the relevant segment as good. The 1997 report classifies the I-5 segment between MP 117.7 and 122.3 as having a 52.4 section index (fair condition) for the northbound lanes and a 43.0 (poor condition) section index for the southbound lanes. The index ranges from 0 to 100, with 11.0 to 45.0 categorized as poor and 46.0 to 75.0 as fair. A fair rating describes generally stable pavement with moderate cracking, minor areas of structural weakness and acceptable ride quality. Poor pavement conditions indicate a pavement with areas of instability, large crack patterns, heavy and numerous patches and acceptable to poor ride quality. Pavement in fair condition may require some maintenance to ensure the existing pavement does not fall below the fair category. Poor pavement quality requires action to meet ODOT's goal for ensuring pavement quality.

3.11 Traffic Impact Studies

Three traffic impact studies (TISs) were reviewed as a part of this task. All are for land use proposals to rezone land within the Green Urban Unincorporated area. Of the three TISs, a potential area of concern where rezoning would cause congestion levels to worsen was identified as the unsignalized intersection at Old Highway 99 and the I-5 southbound ramps. Based on capacity analysis performed for the Speedway Industrial Rezone TIS, it was determined that this intersection warrants a signal. ODOT has indicated, however, that there are sight distance issues with the existing geometric configuration at the Old Highway 99/I-5 southbound ramps that would make locating a signal difficult.

4 TRANSPORTATION FACILITIES

4.1 Traffic Operations Analysis

This section summarizes the methods, procedures, and data used in analyzing the traffic counts and developing 30th highest hour volumes and year 2025 design hour volumes. Also included is a summary of the traffic operations analyses at key intersections, ramp terminals and freeway entrance / exit ramps. Analysis was conducted under both existing year (2004) and future year (2025) traffic volume conditions. The summary information in this section is based on the technical memoranda compiled in Appendix C.

4.1.1 Planning Area Intersections, Ramps and Freeway Segments

Old Highway 99 at I-5 Southbound Ramps

This is a T-intersection. The westbound leg consists of the southbound on- and off-ramps to I-5, which has a shared through-left turn with a channelized right-turn lane. Old Highway 99 consists of a through lane and channelized right-turn lane on the northbound approach. The southbound approach contains a through lane and a left-turn lane.

Old Highway 99 at Speedway Road

This is a T-intersection, with the stop-controlled Speedway Road intersecting Old Highway 99 with a single-lane approach for both left- and right-turning vehicles. Old Highway 99 is a two-lane facility with shared lanes for both through and turning movements.

Old Highway 99 at Happy Valley Road

Happy Valley Road and Old Highway 99 is a signalized intersection with a driveway comprising the east approach. The northbound approach of Old Highway 99 has a shared through-right turn lane and a left-turn lane. The southbound approach consists of a channelized right turn lane with approximately 150 feet of vehicle storage, and a left turn lane. The eastbound approach of Happy Valley Road consists of a shared through-left turn lane with an exclusive right-turn lane.

Old Highway 99 at Beaver State Sand and Gravel Access

The east leg of this T-intersection provides access to Beaver State Sand and Gravel. This approach consists of a single lane for both left- and right-turning vehicles. Old Highway 99 is a two-lane facility with shared lanes for both through and turning movements.

Coos Bay–Roseburg Highway (OR 42) at Old Highway 99/Grant Smith Road

The intersection of Old Highway 99 and OR 42/Grant Smith Road is a signalized intersection located approximately 0.4 miles west of I-5. The westbound approach carries traffic from the north- and southbound off-ramps of Interchange 119 and has four lanes: a separate left-turn lane, two through lanes, and a separate right-turn lane. The eastbound approach consists of a left-turn lane, through lane, and a shared through-right turn lane. The southbound approach of Old Highway 99 has a channelized right-turn lane with separate through and left-turn lanes. The northbound approach from Grant Smith Road has a similar configuration with right-turn channelization and separate left-turn and through movements.

OR 42 at Carnes Road/Roberts Creek Road

This intersection is located approximately 0.5 miles southwest of OR 42's intersection with Old Highway 99. The westbound approach on OR 42 consists of a left-turn lane, two through lanes, and a right-turn lane. The eastbound approach has a left-turn lane, one through lane, and one shared through-right turn lane. Both Carnes Road and Roberts Creek Road have shared through-right turn lanes and left-turn lanes.

The lane configuration and traffic control at each of the six intersections is illustrated in Figure 2.

Interchanges 119 and 120

The OHP requires a minimum of two miles between the on-ramp of one interchange and the off-ramp of a downstream interchange in rural locations². However, the southbound on-ramp at Interchange 120 is located about 2200 feet from the southbound off-ramp at Interchange 119, and the northbound on-ramp for Interchange 119 is located about 2500 feet from the off-ramp of Interchange 120.

The volume of vehicles entering I-5 northbound from Interchange 119 is significant, as it is approximately equal to the mainline volume. The acceleration lane for the northbound on-ramp at Interchange 119 is 300 feet short of ODOT standards. This configuration forces large volumes of vehicles to complete their merge maneuver over a substandard length. Freeway operations during peak operating hours are characterized by congestion between the northbound on- and off-ramps.

² Although the interchanges are in a developed area, they do not lie inside the Roseburg Urban Growth Boundary. Therefore, the OHP classifies the interchanges as rural.

4.1.2 Traffic Counts and Design Hour Development

Traffic Counts

ODOT conducted 3-hour, and 14-hour manual classification counts at planning area intersections between November 2003 and June 2004. Additionally, ODOT conducted 48-hour tube counts at the ramps of Interchange 119 and 120 in May 2002. The classification counts were used in the development of 30th highest hour and design hour volumes. Details regarding traffic counts can be found in Appendix C.

ODOT count data enabled the determination of peak hour volumes, peak hour factors and the percentage of heavy vehicles at each intersection. The common peak hour for the four intersections was found to occur between 4:00 and 5:00 PM. Heavy vehicles were determined to comprise between three and eight percent of overall traffic at area intersections.

30th Highest Hour Determination

The Transportation Planning Analysis Unit (TPAU) of ODOT has developed a procedure for calculating current year 30th highest hour traffic volumes. In an urban area the 30th highest hour typically occurs on a weekday during the peak month of the year, and in a rural area it typically occurs on a weekend day during the summer. The 30th highest hour is calculated by applying a seasonal factor to the recorded peak hour volumes. The seasonal factor is found by using the Automatic Traffic Recorder (ATR) closest to the location of interest with similar traffic flows, area type, and lane configuration. Traffic volumes are then multiplied by their appropriate seasonal factor to determine the 30th highest hour volumes.

The above procedure was applied to the Interchange 119/120 planning area to determine the 30th highest traffic volumes, which were then manually balanced between intersections and the two interchanges. These volumes are illustrated in Figure 3 and Figure 4.

Year 2025 Design Hour Development

EMME/2 model volumes were developed for years 2000 and 2025. Year 2004 model volumes were determined through linear interpolation between 2000 and 2025 model volumes. Using the method outlined in NCHRP 255³, the difference between link volumes for the 2004 and 2025 model years was calculated and added to the 2004 30th highest hour volumes used for the traffic operations analysis for existing conditions. Volumes were then balanced between planning area intersections and the two interchanges. Figure 4 and Figure 5 show 2025 design hour volumes for the intersections and ramps within the Interchanges 119 and 120 planning area. See Appendix C for details regarding the model development process.

4.1.3 Traffic Operations Analysis Methods

Traffic operations analyses were performed at the six interchange area intersections and at the ramp merge and diverge points on Interstate 5 using the methodology outlined in the *2000 Highway Capacity Manual* (HCM). The Synchro software package was selected for performing the traffic operational analysis for non-freeway facilities. Synchro report output summarizes the

³ National Cooperative Highway Research Program Report 255. "Highway Traffic Data for Urbanized Area Project Planning and Design." 1982.

calculated level of service (LOS), volume-to-capacity (v/c) Ratios, and the 95th percentile queue length by lane.

SimTraffic simulation modeling was used to supplement Synchro and HCM analysis for congested intersections and freeway ramp and weave segments. SimTraffic is not subject to the limitations inherent in HCM queuing analysis due to its ability to calculate the effects of traffic flow under saturated traffic conditions where traffic may spill out of left-turn storage bays or spill over from one intersection to another. SimTraffic also provides information on delay and average speed for freeway ramp and weaving segments. Appendix C contains further details and a discussion regarding traffic operations analysis methods.

4.1.4 Operational Criteria

Transportation engineers have established various descriptors for traffic operations of intersections. The most common descriptor is the level-of-service (LOS) as defined by the HCM. The LOS concept requires consideration of factors that include travel speed, delay, frequency of interruptions in traffic flow, relative freedom for traffic maneuvers, driving comfort, convenience, and operating cost. Six standards have been established ranging from LOS A, where traffic is relatively free flowing, to LOS F, where the street system is totally saturated with traffic and movement is very difficult.

At both signalized and unsignalized intersections, LOS is based on control delay. At two-way stop-controlled intersections, control delay is the total duration from the time a vehicle joins the back of the queue until it proceeds forward into the intersection from the first position at the stop sign.

On freeway ramp and weaving segments LOS is based on the density of passenger cars per mile per lane (pc/mi/ln). At LOS A, traffic moves at free-flow speeds, and vehicles experience no impedance to their ability to maneuver in the traffic stream. At the other end of the continuum is LOS F, in which demand exceeds capacity and operational breakdowns occur. LOS E represents the density at capacity.

A comparison of traffic volume demand to intersection capacity is another method of evaluating how well an intersection is operating. This comparison is presented as a volume-to-capacity (v/c) ratio. A v/c ratio of less than 1.0 indicates that the volume is less than capacity. When it is closer to 0.0, traffic conditions are generally good with little congestion and low delays for most intersection movements. As the v/c ratio approaches 1.0, traffic becomes more congested and unstable with longer delays.

The OHP and the Douglas County Transportation System Plan (TSP) define mobility standards in terms of v/c ratios, which are dependent on the roadway classification and area type. According to the OHP, the mobility standard for OR 42, a rural Statewide Highway and Expressway, is 0.70. The controlling mobility standard for ramp terminals is the lower of 0.85 or that of the crossroad. Old Highway 99, the Interchange 120 crossroad, is a Rural Arterial according to the Douglas County TSP. As such, it has a mobility standard of 0.80. These mobility standards apply through the planning horizon year, which is 2025 in this case.

The OHP requires that a v/c ratio of 0.70 be met for rural interstate freeway segments. This mobility standard includes ramp and weaving segments.

4.1.5 Intersection Operations Analysis Results

This section presents the results of the operational analysis for 2004 and 2025 conditions at each intersection. The results are based on HCS reports generated by Synchro. Table 1 summarizes traffic operations analysis results for both 2004 and 2025 traffic volume conditions.

Table 1. Intersection Operations Analysis Summary

Intersection	Approach	V/C Ratio	2004		2025		
			95th Percentile Queue	LOS	V/C Ratio	95th Percentile Queue	LOS
Old Highway 99 at I-5 SB Ramps	Westbound L	60	475	F	1.95	5.75	F
Old Highway 99 at Speedway Road	Westbound L/R	0.33	50	D	0.50	75	F
	Northbound T/R	0.29	0	n/a [†]	0.34	0	n/a [†]
Old Highway 99 at Happy Valley Road	Intersection	0.65	n/a	B	0.70	n/a	B
	Southbound T	0.58	325	B	0.65	400	B
	Eastbound L/T	0.79	225	C	0.82	250	D
Old Highway 99 at Beaver State S&G	Westbound L/R	0.14	<25	C	0.17	<25	C
	Northbound T/R	0.18	0	n/a [†]	0.21	0	n/a [†]
	Southbound L/T	0.00	0	A	0.01	<25	A
OR 42 at Old Highway 99 / Grant Smith Road	Intersection	0.74	n/a	C	0.77	n/a	C
	Eastbound L	0.73	175	D	0.76	250	D
	Eastbound T/R	0.65	350	B	0.75	475	B
	Southbound L	0.84	325	D	0.86	325	D
OR 42 at Carnes Road / Roberts Creek Road	Westbound T	0.61	325	B	0.75	425	C
	Intersection	0.72	n/a	C	0.92	n/a	D
	Eastbound L	0.82	275	D	0.94	350	E
	Westbound T/R	0.73	350	C	0.91	500	D
	Southbound L	0.66	250	D	0.92	300	E

† Free vehicular movements

The network is expected to see significant increases in traffic volumes in the next 20 years. Consequently, intersection operations will be degraded to varying degrees. A discussion of intersection results follows.

Old Highway 99 at I-5 SB Ramps

The westbound approach is currently well over capacity with a v/c of 1.60. The 95th percentile queue length is 475 feet. A queue of this length extends into the segment of the ramp needed for deceleration. Under 2025 volume conditions, intersection operations will further degrade with longer queues and more delay.

A preliminary signal warrant analysis has shown that this intersection meets the following MUTCD signal warrants under current traffic volume conditions: Warrant 1, Eight-Hour Vehicular Volume; Warrant 2, Four-Hour Vehicular Warrant; and Warrant 3, Peak-Hour.

Old Highway 99 at Speedway Road

The stop-controlled approaches are currently operating within County mobility standards and are expected to remain within an acceptable range through 2025. The westbound approach is

expected to be at LOS 'F' with delays of about 50 seconds. However, this is a relatively minor approach with low volumes. The overall intersection operation is expected to remain satisfactory.

Old Highway 99 at Happy Valley Road

This intersection is currently operating at a v/c of 0.65, with moderate queuing on the southbound and eastbound approaches. Under 2025 design hour volume conditions, the intersection is expected to meet the Douglas County mobility standard with a v/c of 0.70.

Old Highway 99 at Beaver State Sand and Gravel

This two-way stop-controlled intersection is operating well within the mobility standard under current and future traffic volume conditions.

OR 42 at Old Highway 99 / Grant Smith Road

The north- and southbound on-ramps for Interchange 119 diverge approximately 1000 feet to the east of this intersection, with the left lane going north and the right lane going south. About 85% of the eastbound vehicles leaving this intersection head north at the interchange. Most of those vehicles have already assumed their desired lanes on the eastbound approach to the intersection. This results in many more vehicles queuing in the left lane than in the right lane.

Preliminary analysis, as shown in Table 1, depicts the intersection operating with moderate queuing and overall v/c ratios of less than 1.00 for both existing and future year conditions. However, this analysis assumed a nearly equal distribution between the right and left lanes of the eastbound approach. Therefore, the values shown in Table 1 are likely underreporting overall v/c ratios and 95th percentile queue lengths on the eastbound approach due to lane imbalance that is occurring.

Supplemental analysis was conducted using Synchro and SimTraffic to more accurately reflect the queuing and v/c resulting from lane imbalances. Results confirmed that significant queuing of greater than 1000 feet results when the effects of lane imbalance are taken into account. A complete discussion of a Synchro HCM sensitivity analysis can be found in Appendix C. The sensitivity analysis tested the impacts of increasingly unbalanced lane use on the eastbound leg. Appendix C also contains a discussion of a SimTraffic simulation designed to test the impacts of lane imbalance.

OR 42 at Carnes Road

Currently this intersection marginally exceeds the mobility standard with a v/c of 0.75. Under future year traffic volume conditions, the intersection is expected to approach capacity with a v/c of 0.92. The eastbound left, westbound through/right, and southbound left-turn movements are all expected to exceed a v/c of 0.90 under future year traffic volume conditions.

4.1.6 Freeway Operations Analysis Results

A 1999 ODOT origin-destination study found that 20 percent of northbound vehicles entering at Interchange 119 subsequently exit at Interchange 120. It has been suggested that the addition of an auxiliary lane between the on- and off-ramps could improve operations. An auxiliary lane would create a weaving segment between the ramps. The following sections evaluate current and future year traffic operations under the existing interchange configuration (merge/diverge analysis) and with an auxiliary lane (weave analysis).

Due to the low volumes of ramp-to-ramp traffic in the southbound direction, a southbound auxiliary lane is not recommended. However, mainline freeway operations in the southbound

direction were examined and found to be operating at acceptable v/c ratios of 0.48 and 0.62 under 2004 and 2025 traffic volume conditions, respectively.

Merge / Diverge Analysis

Figure 4 shows 2004 and 2025 volumes for the Interchange 119 and 120 ramps, as well as the mainline. HCM Ramps and Ramp Junction methodology was used to determine LOS of the Interchange 119 ramps under 2025 design hour volume conditions. A v/c analysis was also conducted so that the merge and diverge segments could be compared to OHP mobility standards.

Table 2 summarizes results for 2004 and 2025 ramp junction analysis at Interchanges 119 and 120 under existing lane configurations. The northbound off-ramp terminal at Old Highway 99 is also provided. As the table shows, the ramp junctions are expected to experience increased traffic volumes, which will increase density and degrade v/c and LOS. However, even under 2025 traffic volume conditions, no ramps are expected to operate below a v/c of 0.60 and LOS C.

Table 2. Interchanges 119/120 Ramps Operations Analysis Summary

Direction of Travel	Density (pc/mi/ln)	2004 v/c	LOS	Density (pc/mi/ln)	2025 v/c	LOS
IC 119 Northbound On	18.4	0.52	B	23.3	0.65	C
IC 119 Northbound Off	12.7	0.25	B	17.2	0.35	B
IC 119 Southbound On	12.9	0.33	B	17.4	0.46	B
IC 119 Southbound Off	26.3	0.53	C	27.3	0.68	C
IC 120 Northbound Off	20.6	0.54	C	26.1	0.68	C
IC 120 Southbound Off	23.7	0.57	C	29.3	0.72	D
IC 120 Southbound On	19.8	0.51	B	24.7	0.65	C
IC 120 Northbound Off at Old 99	n/a [†]	0.54	A	n/a [†]	0.60	B

† HCM (density-based) merge methodology does not apply to two-way, two-lane facilities. Synchro ICU report results are shown for a yield controlled intersection.

Weave Analysis

A significant amount of northbound ramp-to-ramp traffic exists between the on-ramp at Interchange 119 and the off-ramp at Interchange 120. This section evaluates the effects of an auxiliary weave lane between the two interchanges. Figure 6 illustrates the merge and diverge movements for the current ramp configuration and the weave movements of a possible auxiliary lane between the two ramps. HCM Weaving methodology was used to determine LOS of an auxiliary lane scenario. A v/c analysis was also conducted so that the weave segment could be compared to OHP mobility standards. Analysis results are summarized in Table 3.

Table 3. Interchange 119/120 Weaving Segment Summary

	2004	2025
Speed (mph)	51.0	50.2
Density (pc/mi/ln)	15.3	19.7
v/c	0.41	0.50
LOS	B	B

Analysis results for the weave segment show moderately improved operations compared to the merge/diverge configuration (“*Northbound On*” row from Table 2), with the weave segment improving v/c from 0.46 to 0.41 for current year conditions and from 0.58 to 0.50 for year 2025 conditions. The weave segment would be expected to maintain a LOS of B through 2025.

ODOT conducted a weaving analysis in 1999 to evaluate whether an auxiliary lane between the ramps would have any operational benefits over the current ramp configuration. The ODOT analysis draws a similar conclusion, showing improved operations with an auxiliary weave lane. A detailed discussion of the ODOT analysis can be found in Appendix C.

Simulation modeling using SimTraffic software was conducted to supplement HCM analysis results and construct a more complete picture of freeway operations under both merge/diverge and weaving scenarios. The results showed that an auxiliary lane would improve freeway operations. However, the model results show the ramps operating with lower speeds and more delay with an auxiliary lane in place. This decrease in operational performance may reflect the spillback from disruption caused by the weaving of entering vehicles from Interchange 119 and mainline vehicles exiting at Interchange 120. It should be noted that the facility is expected to perform adequately under either scenario. Details regarding the SimTraffic model results can be found in Appendix C

4.1.7 Auxiliary Lane Discussion

Generally weaving lanes cause significant turbulence and increase the number of potential conflicts. An auxiliary lane would remove the merge/diverge maneuver for ramp-to-ramp vehicles. This movement accounts for a full 20 percent of entering vehicles at Interchange 119, or 260 out of 1300 future year peak hour vehicles. However, an auxiliary lane would force a lane-change maneuver where one currently does not exist for mainline vehicles exiting at Interchange 120 (approximately 120 future year peak hour vehicles). An auxiliary lane would allow a greater distance for entering vehicles to complete their merge with mainline traffic, but it would also extend the length over which potential conflicts may occur, as well as create additional conflicts over the current configuration.

HCM ramp and weaving analysis results show moderately improved overall performance with an auxiliary lane than with the current merge/diverge configuration. A v/c analysis shows that, while an auxiliary lane would improve operations, OHP mobility standards would be met under future year traffic volume conditions even if an auxiliary lane is not constructed. SimTraffic modeling shows that an auxiliary lane does offer some level of improved operations over the

existing merge/diverge configuration for mainline through traffic. However, an auxiliary lane may not provide appreciable benefits to ramp operations.

4.2 Safety Analysis

This section summarizes the crash analysis that was conducted for the Planning Area roadway facilities. The safety analysis included a review of the ODOT supplied Planning Research Corporation (PRC) crash listings (2000 to 2002), ODOT Safety Priority Index System (SPIS) data, and a comparison of calculated crash rates with statewide averages. The procedures used to analyze this data are discussed in Appendix D.

SPIS Data

The SPIS is a method developed by ODOT for prioritizing locations where funding for safety improvements can be spent most efficiently and effectively. Based on crash data, the SPIS score is influenced by three components: crash frequency, crash rate, and crash severity. Three years of crash data are analyzed for the SPIS score. A list of the sites with the top 10% SPIS scores is produced each year. There are two Top 10% SPIS locations within the Interchanges 119/120 Planning Area. The first is at the intersection of OR 42 and Carnes Road. The second from milepost 76.29 to 76.43 on OR 42, which is located to the east of the intersection of OR 42 with Old Highway 99/Grant Smith Road. This section had one fatal crash where a pedestrian was walking in the roadway.

4.2.1.1 Study Area Findings

Crashes were summarized by location for each of the six study intersections. Figure 7 shows the location and the number of crashes that occurred between 2000 and 2002. Intersection crash rates are summarized in Table 4.

Table 4. Study Area Intersection Crash Rates

Intersection	ADT	3-Year Crash Rate
Old Highway 99 at IC 120 SB On/Off Ramp	11,480	0.40
Old Highway 99 at Speedway Road	11,140	0.08
Old Highway 99 at Happy Valley Road	12,310	0.37
Old Highway 99 at Beaver State S & G	6,920	0.00
Old Highway 99 at OR 42	23,800	0.23
OR 42 at Carnes Road	23,610	1.04

The crash rate of 1.04 at the intersection of OR 42 with Carnes Road is high when compared to the surrounding intersections. This location had 27 crashes between 2000 and 2002 that occurred within 265 ft (0.05 mi.) of the intersection on both OR 42 and Carnes Road/Roberts Creek Road. Of the 27 crashes, 18 were rear end crashes. Fifteen (15) of the crashes resulted in injuries and 12 resulted in property damage only. There were no fatal crashes at this location during the study period. As noted above, this intersection is a Top 10% SPIS location.

The crash rate on Old Highway 99 from OR 42 to the ramp terminal at interchange 120 is 1.04. This is comparable to the statewide crash rate for highways in the same class as the Old Highway 99, which is 0.99.

Crashes were also examined on I-5 between Interchanges 119 and 120. The segment of freeway examined included both the northbound and southbound lanes, as well as the merge and diverge areas for both interchanges. The I-5 segment crash rate was found to be 0.28, which is slightly higher than the comparable statewide average of 0.22. Table 5 summarizes the crashes on Interstate 5 in the vicinity of Interchanges 119 and 120.

Table 5. Freeway Crash Data

Location	2000	2001	2002	Total
Northbound				
IC 119 Off Ramp (MP 119.72)	1	0	0	1
IC 119 On Ramp (MP 119.99)	1	1	1	3
IC 119 On to IC 120 Off Ramps	2	1	4	7
IC 120 Off Ramp (MP 120.41)	1	1	2	4
IC 119 On and Off (OR 42)	1	1	2	4
Southbound				
IC 120 Off Ramp (MP 120.43)	0	1	0	1
IC 120 On Ramp (MP 120.13)	0	0	0	0
IC 120 On to IC 119 Off Ramps	0	4	0	4
IC 119 Off Ramp (MP 119.68)	0	0	0	0
IC 119 On Ramp (MP 119.68)	0	0	0	0

4.2.1.2 Safety Conclusions

The safety analysis showed that only one of the intersections in the study area, OR 42 at Carnes Road, has a crash rate greater than the surrounding area. This intersection had 25 crashes within the influence area between 2000 and 2002. The primary type of crash was rear-end, which are often caused by driver inattention and congestion at signalized intersections. Due to the nature of rear-end crashes, there is no specific mitigation that can be suggested. However, some general safety mitigations may help improve safety, including changes to signal timing such as increasing the clearance interval. Also, visibility of signals may be improved by re-aiming the signal heads or using a different luminaire.

4.3 Summary of Planned and Programmed Projects

Both Douglas County and ODOT were asked to provide any planned or programmed projects in the area surrounding Interchange 119 and 120. The following section provides a brief overview of any planned or programmed projects and a discussion of the likely impact on the transportation infrastructure, use, and operations.

OR 42: Winston to I-5 Resurfacing

This project is part of the 2004 to 2007 Statewide Transportation Improvement Program. This project has several objectives including placing a new road surface and improving the intersection geometry at Kelly's Corner. This project took place from milepost 73.20 to 77.20 on

OR 42 and has been completed. It is expected that this project will improve safety and operations on this stretch of roadway.

I-5 Overcrossing: South Umpqua River and Old Highway 99

The replacement project is in the approved 2004-2007 STIP. The I-5 northbound and southbound structures crossing over the South Umpqua River and Old Highway 99 will be replaced and widened. These Bridges are listed as an OTIA stage 1a project. As part of this project, the northbound off-ramp is being reconstructed as well.

4.4 Land Use

4.4.1 Existing Land Uses

The 119/120 planning area is located primarily within the Green Unincorporated Urban Area (UUA) of Douglas County. Although Green is not a city, it is developed with higher densities than typical rural areas with industrial, commercial, and residential development. The dominant land uses surrounding the interchanges and both sides of Old Highway 99 are industrial in nature. Access to OR 42 and Old Highway 99 makes this area appropriate for distribution-related industries, such as UPS and FedEx on Old Highway 99. Other “medium heavy” industrial uses, the largest area of which is along Austin Road, Green Siding Road, and Industrial Drive, include recreational boat manufacturing, auto body shops, storage, and machinery parts manufacturing. Pacific Power on the corner of Old Highway 99 and Happy Valley Road is also zoned medium industrial. “Heavy” industrial uses include wood products processing (Roseburg Forest Products owns 93 acres), paving materials manufacturing, and salvage/automobile wrecking (allowed conditionally in heavy industrial zones). The dominant land uses in the light industrial-zoned areas within the study area are mobile home parks (on Old Highway 99 and west of I-5, south of Interchange 120 and east of Interchange 199).

Commercial uses in the study area are predominantly found at Kelley’s Corner, the intersection of Carnes Road and OR 42, where there is a large grocery store, some strip commercial uses, and restaurants in “C-2,” and off of Grant Smith Road, south of Interchange 119 (Loves Truck Stop, zoned “C-3”). Outside of the mobile home parks, the majority of residential developments within Green are located farther from I-5 in the northern and western portions of the study area. Figure 8 and Figure 9 show zoning and Comprehensive Plan designations, respectively, for the planning area.

4.4.2 Douglas County Comprehensive Plan and Development Code

The entire project area is located within Douglas County’s planning jurisdiction, mostly within the Green Urban Unincorporated Area (UUA). The northernmost portion, along Old Highway 99 north of Interchange 120, is outside of the Green planning area. The predominant land use designations, per the Douglas County Comprehensive Plan (2003) are Industrial and General Commercial/Industrial (described as a designation intended for heavy retail service commercial uses or light industrial uses). There is also an area of Industrial Reserve directly east of Interchange 119. Residential designations are also found along Roberts Creek and Carnes Road, the western boundary of the study area. Residential lots east of Carnes Road are designated High Density; moving northwest, from Carnes Road to the Umpqua River, residential densities go from High to Medium Density.

Comprehensive Plan land use policies applicable to the study area include:

3. *(Commercial) Future commercial development should be located along Carnes Road, at Kelley's Corner, and along Grange Road.*

4. *(Commercial/Industrial) A mix of light industrial and heavy commercial uses are encouraged in the designated portions of the area bounded by Carnes Road, OR 42, and I-5.*

In addition, there are specific industrial policies that pertain to industrial development east of I-5 at Interchange 119. These policies address improvements to Grant Smith Road, screening and landscaping, and drainage plans.

Industrial zones cover most of the study area and are concentrated along I-5 and Old Highway 99. Industrial designations include Light Industrial (M-1), Medium Industrial (M-2), and Heavy Industrial (M-3), permitting a range of uses from Mobil Home Parks and some commercial uses, "clean" industry, manufacturing, and heavy industry. Medium and Heavy Industrial specify the necessity of being in proximity to good (or excellent) rail or highway access.

Consistent with the Comprehensive Plan Land Use Map, to the east of Interchange 119 is an Industrial Reserve designation (INR). The intent of the Industrial Reserve is to ensure that an adequate quantity of land suitable for industrial use is available in Douglas County. Areas with this designation in the study area are in the Green Urban Unincorporated Area, and over time development is expected to reach urban densities. All sites designated Industrial Reserve are considered potentially good industrial sites and are protected for the County's economic future.

Commercial zoning is concentrated on the west side of I-5 primarily at Kelley's Corner, near Grant Smith Road and OR 42 near the Interchange 119 on ramp, and interspersed with industrial zoned property along the eastside of Old Highway 99.

Residential zoning in the study area includes primarily Single-Family Residential (R-1, 6,500 square foot minimum lot area), with some Multiple Family Residential (R-2, 6,500 square foot minimum lot area for single family residence) interspersed along Carnes Road, bordering the western study area boundary. The northwest corner of the study area also encompasses a portion of R-2. Suburban Residential (RS) flanks the intersection of OR 42 and Carnes Road, and continues to be the dominant zoning along Carnes Road in the northern portion of the study area. The RS zone is intended for suburban residential development where limited agricultural activities, including raising livestock and nursery stock, may be pursued. Minimum lot size in this zone are 15,000 square feet, when served by a community water supply system or community sanitary sewer system, and one (1) acre or larger if not on a water or sewer system. The RS zoning designation is not consistent with the Douglas County Comprehensive Plan, which specifies only high density residential along Carnes Road, but is fairly consistent with the type of existing residential development in the area.

4.4.3 Future Land Uses

The Green District is the largest urban unincorporated area in Douglas County and has seen a great deal of commercial and industrial growth in the last five years, including the new Love's Truck Stop and Ingram Book distribution center (approximately 6 acres and 500 employees) that lie within the study area. In addition, the Green District is the most populated urban unincorporated area in Douglas County and, with a growth rate of 2.2%, continues to attract

residents, predominantly to new residential developments in the west portion of the District.⁴ The 2000 census recorded the population of Green as 6,174. Development services related to the Green area account for a third of the planning activity at the County's Planning Department. According to a representative of the Umpqua Economic Development Partnership, warehousing/distribution and light industrial growth is expected around Interchange 119 due to the available land, services and comparatively affordable housing in the vicinity. Interviews with business and property interests in the vicinity of the I-5 interchanges consistently included comments regarding the potential for continued commercial, industrial and residential growth in the area. Douglas County maintains a current buildable lands inventory of vacant industrial land in the study area.

The Green District is within the Roberts Creek Enterprise Zone, a program to encourage businesses to make new or additional investments through property tax abatement. The majority of vacant industrial land is east of I-5, in the vicinity of, and north of Ingram Book Distribution Center. Much of the developable land is within the Oak Creek Industrial Park where approximately 30 acres is available. The land is owned by Douglas County, and an industrial board, Umpqua Economic Development Partnership, is responsible for marketing the site. The goal of the park (which is restricted to "clean" industrial development) is to enhance Douglas County's industrial base and create jobs. Moderate slopes and stands of oak characterize the area north of the Industrial Park.

Also, the Cow Creek Tribe has recently purchased a 15.29-acre site, formerly a drive-in theater, to the south of Grant Smith Road. While this property has a "Rural Commercial (CRE)" zone designation, which allows a variety of commercial uses, it is expected that this parcel will ultimately be placed in the Tribal Trust and future uses will be dictated by the Tribe.

There are only a few vacant industrial areas west of I-5. The largest known redevelopment plan is at Roseburg Forest Products, which is currently undergoing an environmental permitting process to fill an existing 30-40 acre log pond (and nationally listed wetland). The company intends to drain the site, substantially increasing the buildable acreage on the property, in order to fulfill expansion plans for the plywood plant.

Residential areas close to I-5 are predominantly mobile home parks, with some pockets of "stick built" homes, and an occasional house associated with a business on Old Highway 99. Areas on "M-1," where mobile homes are allowed, appear to be built out. Numerous single-family residential developments have recently been built or are underway near Carnes Road, Happy Valley Road, and Little Valley Road.

The growth in the Winston-Dillard area, while outside of the study area, will also have an effect on the transportation system in the study area. The City of Winston, a community of roughly 5,000, has seen rapid residential growth in recent years and expects to see 520 homes built within the next 5-6 years. With very little commercial and no industrial uses in Winston, residents are dependent on OR 42 and Old Highway 99 to get to services and jobs. The Dillard area is being promoted as a prime industrial area. OR 42 is an important route for people and freight through Winston, Dillard and further west and is designated a Freight Route in the Oregon Highway Plan recognizing its significance in connecting Coos Bay and Roseburg.

⁴ The most recent demographic information for the Green District can be found in the Green Transportation System Plan, August 8, 2001, available at the Douglas County Planning Department.

4.5 Environmental Constraints

A review of existing natural and historic resources was conducted to identify sensitive natural and historic resources in the planning area that could result in potential constraints or barriers to future transportation facility improvements. The complete memorandum is contained in Appendix E. In addition to analyzing two environmental baseline reports, the following information was reviewed:

- Goal 5 resources and the Douglas County Comprehensive Plan;
- Federal Emergency Management Agency (FEMA) floodplains;
- Known Threatened and Endangered (T&E) listed species;
- Wetlands and the presence of hydric soils;
- Hazardous materials databases and field surveys;
- Cultural and historic resources; and
- Agency Cultural Resource Specialist lists for potential archeology sites.

More detailed analysis will need to occur after improvement projects are identified, to determine precise impacts and the resulting permitting and mitigation actions required. Local, state, and federal agencies/jurisdictions regulate project impacts associated with improvements.

Interchange 119 may have issues regarding wildlife, environmental, and cultural resource concerns, due to the proximity or potential proximity to threatened and endangered species, water resources, hazardous materials, and cultural deposits in an area not previously surveyed. Threatened species that may potentially be located near Interchange 119 include the bald eagle, coho salmon (Oregon Coast) and Kincaid's lupine flower. Potential endangered species near Interchange 119 includes the rough popcorn flower. A review of hazardous materials databases and field surveys found four sites with recognized environmental concerns located near Interchange 119. Also, the North Fork Roberts Creek runs through the project area enhancing the possibility of encountering buried cultural deposits near Interchange 119.

The Douglas County Floodplain Overlay indicates a portion of North Fork Roberts Creek, an intermittent stream that joins the South Umpqua River downstream of the site, is located about a quarter mile south of Interchange 119. Therefore, it is unlikely that special floodplain considerations would apply to repairs or replacement of Interchange 119 bridges.

Areas of concern for Interchange 120 include possible floodplain, wildlife, wetland, environmental, and cultural constraints. Unlike Interchange 119, Interchange 120 is located relatively close to the South Umpqua River yet outside of the 100-year floodplain. Interchange 120 is also near an unnamed stream with a floodplain that is constrained by terraces. Surveys would need to be conducted at the bridge site to better ascertain any floodplain constraints related to improvements. Potential threatened and endangered species identified near Interchange 119 also apply to Interchange 120. Wetlands identified by NWI mapping and the area of mapped hydric soils along Unnamed Stream 1, were not investigated for the baseline report in the field because of access limitations. Site surveys would be necessary prior to construction. A recognized environmental concern was identified through site reconnaissance located near Interchange 120. Prior to ground disturbance, an evaluation of potential hazardous materials and other sites of concern will need to be completed. In addition, the presence of an unnamed

tributary and a prehistoric lithic scatter near the Umpqua River highlights the potential for cultural resources near Interchange 120.

After project improvements are identified and construction envelopes delineated, potential impacts to natural and historic resources and necessary permitting can be determined. Any project impacts to wetlands or streams could require special permitting with the Oregon Department of Environmental Quality (DEQ), US Corps of Engineers (COE) and the Oregon Division of State Lands (DSL). These permits may require mitigation including one or more of the following: water quality swales, water quality detention ponds, construction of new wetlands, and/or enhancement of existing wetlands. Douglas County regulates impacts to floodplains and may require similar mitigation if impacts to the floodplains are anticipated.

Project impacts to threatened species or species of concern could require detailed consultation with the US Department of Fish and Wildlife and National Marine Fisheries Service (NOAA Fisheries). A Biological Assessment or similar biological evaluation may be required to determine project impacts to listed and proposed species. Based on the analysis, the agencies may require modified construction techniques and timing to minimize impacts on the species. If identified hazardous material sites will be disturbed during project construction activities, both testing for hazardous materials and proper disposal in an appropriate landfill will be required. DEQ is the overseeing agency for disposal of hazardous materials. Regarding cultural and historic resources, no resources have been identified, so special protective measures or mitigation are not necessary to implement prior to project area construction. However, if previously undetected cultural resources are encountered during the course of the project, all ground disturbing activities must cease and personnel at ODOT's Environmental Services Division must be notified immediately. Data recovery must be undertaken. This would likely result in construction delay and additional project costs to pay for the recovery.

5 NEEDS ASSESSMENT

The following section identifies geometric, operational, safety, and freight movement deficiencies related to the existing interchange and roadway network configurations. The needs identified in this section will be used to inform the future Interchange Area Management Plan (IAMP). The IAMP will recommend specific long-term strategies to address existing deficiencies in the planning area.

5.1 Interchanges 119/120 Geometric Deficiencies

A review of geometric deficiencies for the I-5 interchanges 119 and 120 was conducted for this conditions report. The deficiencies described in this section are based upon a review of as-built drawings for the interchanges and information presented in the *I-5 State of the Interstate Report*. The existing conditions were compared against the ODOT design standards from the 2003 Highway Design Manual.

5.1.1 Interchange 119 Deficiencies

I-5 is a divided freeway in this section. There are only 4 foot wide inside shoulders when standard is 6 feet and the median width is only 30 feet when 64 feet is the standard. The vertical clearance beneath the OR 42 overpass is less than the required 17 feet. The Type 1 and earth mound guardrail terminals for this section are not to current standards. The spacing between the

ramps of the Coos Bay-Roseburg interchange and the ramps of Interchange 120 do not meet the 2 mile OHP standard spacing for rural interchanges⁵.

The northbound entrance ramp has a design speed of 55 mph, which meets current design standards. However, the acceleration length is approximately 300 feet short of ODOT standards for vehicles merging onto I-5. In addition, the merge area of the ramp is on a spiral as opposed to a tangent section, which is not desirable.

The northbound exit ramp functions as a loop ramp with a speed of 30 mph, meeting current standards for speed. However, the deceleration length is approximately 270 feet short of ODOT standards for vehicles leaving I-5. In addition, there is no tangent or spiral section prior to the curve to aid in speed reduction and superelevation transitions.

The southbound entrance ramp has a design speed of 45 mph, which meets current design standards for speed. The acceleration length is approximately 470 feet short of ODOT standards for vehicles merging onto I-5. In addition, the ramp merges onto I-5 with a 45 mph horizontal curve, with no tangent or spiral section to aid in speed increase and superelevation transitions. The superelevation transition must occur completely on the curve itself before the merge with I-5.

The southbound exit ramp has a design speed of 65 mph, meeting current design standards for speed. However, the deceleration length is approximately 140 feet short of ODOT standards for vehicles leaving I-5. In addition to the short deceleration length, the exit ramp is a horizontal curve, with no tangent or spiral section before it to aid in speed reduction and superelevation transitions. The superelevation transition must occur completely on the curve itself.

5.1.2 Interchange 120 Deficiencies

I-5 is a divided freeway with a median barrier in this section. The median width is 16 feet, while the standard minimum width is 18 feet. The Type 1 and earth mound guardrail terminals for this section are not to current standards. The horizontal alignment contains spiral lengths of 400 feet, below the standard 600 feet required for a 4-lane section. This requires superelevation transitions to happen over a shorter distance. As noted in Section 5.1.1, the spacing between the ramps of this interchange and the ramps of Interchange 119 are substandard.

The northbound exit ramp has a design speed of 65 mph, meeting current design standards for speed. However, the deceleration length is approximately 70 feet short of ODOT standards for vehicles leaving I-5. The Type 1 and earth mound guardrail terminals on this ramp are not to current standards. Access should be controlled within 1320 feet of the ramp, however there are several private accesses on or within this distance on the crossroad. Also, 140 additional feet should be provided for acceleration from the ramp onto Old Highway 99. Note that this ramp will be reconstructed as part of the I-5 overcrossing project described in Section 4.4. This project will address many of the geometric deficiencies described above.

The design speed for the southbound entrance ramp is 45 mph, meeting current design standards for speed. The spirals of the horizontal alignment could be lengthened by 50 feet to provide longer transitions for superelevation. For both this ramp and the southbound exit ramp, access

⁵ Although the interchanges are in a developed area, they do not lie inside the Roseburg Urban Growth Boundary. Therefore, the OHP classifies the interchanges as rural.

should be controlled within 1320 feet of the ramp, however there are multiple private accesses within 1320 feet on the crossroad.

The southbound exit ramp has a design speed of 15 mph, which does not meet the standard of 25 mph minimum. The horizontal alignment contains a sharp, 72 foot radius curve with no spirals to aid in speed reduction and superelevation transitions. The following section contains additional discussion regarding the deficiencies of this ramp and measures to address them.

5.2 Traffic Operations and Safety Deficiencies

Section 4.1 contains a comprehensive discussion regarding traffic operations analysis results. The following discussion presents some strategies that may be considered to address the major operational and safety deficiencies found in the planning area. As noted above, the future IAMP effort will expand on these general concepts and will recommend specific actions to address the existing operational and safety deficiencies within the planning area.

Old Highway 99 at I-5 SB Ramps

The westbound left turn at the ramp terminal is currently operating over capacity at v/c of 2.05, and is forecast to reach a v/c of 2.51 in 2025. The ramp does not have adequate storage length to accommodate the queues that result, which often back up onto the freeway. Preliminary analysis has shown that several signal warrants are met for this intersection. A signal would improve operations and safety at the intersection by providing a protected left turn for southbound exiting vehicles, which would lower v/c and queue lengths.

However, signalization will not improve the operational problems related to geometric deficiencies. The southbound off-ramp contains a sharp, 15 mph curve with a 72-foot radius. In addition, the ramp terminal intersection with Old Highway 99 is too close to the freeway. Possible solutions include the relocation of Old Highway 99 further from the interstate to increase spacing and storage length, or the relocation of the ramp terminals further south on Old Highway 99. This would allow the curve on the southbound off-ramp to be designed with a larger-radius, and would also increase the storage length.

OR 42 at Old Highway 99 / Grant Smith Road

The eastbound approach lanes experience excessive queuing and delays due to lane imbalance on the approach. The Interchange 119 ramp split is located less than 1000 feet downstream. Most vehicles have already assumed their desired lanes on the approaches to the intersection. With 85 percent of vehicles subsequently heading to the northbound I-5 ramps from the left lane, most vehicles queue in the left approach lane at the intersection.

A possible improvement includes constructing a new overcrossing, currently carrying a two-lane, two-way roadway, with sufficient width to accommodate two eastbound lanes. This would allow vehicles heading north at the interchange to occupy both eastbound lanes. At the north- and southbound split, the roadway would consist of one exclusive northbound lane and one lane for both north- and southbound traffic. Allowing northbound interchange traffic to occupy both lanes would reduce or eliminate the imbalance seen at the intersection of OR 42 at Old Highway 99 / Grant Smith Road.

OR 42 at Carnes Road / Roberts Creek Road

This intersection marginally exceeds the ODOT mobility standard under current year conditions, but approaches capacity (0.92) under 2025 conditions. Possible mitigation strategies include adding lanes on the approaches and signal timing modifications.

Other Operational Issues

Some stakeholders have identified as a deficiency the lack of northbound freeway access at Interchange 120. This places limitations on access to Roseburg and points north from the Green area. It also places additional demands on the intersection of OR 42 with Old Highway 99 / Grant Smith Road and Interchange 119, facilities that are already experiencing operational problems. One possible solution includes the construction of a full-movement interchange at this location that would provide a northbound entrance ramp. Another alternative might be to replace interchanges 119 and 120 altogether with a single interchange. This could provide better access to the Green area, while removing several closely-spaced entrance and exit ramps.

As discussed in Section 4.1, the northbound merge at Interchange 119 experiences operational problems due to the high volumes of entering traffic followed by an exit ramp 2500 feet downstream at Interchange 120. An auxiliary lane may provide some operational benefits compared to the existing interchange configuration. This alternative will be thoroughly evaluated in the future IAMP effort.

Traffic Safety Deficiencies

As discussed in Section 4.2, intersection and segment crash rates for planning area facilities are generally consistent with statewide average crash rates. The intersection of OR 42 with Carnes Road has a higher crash rate, with a significant number of rear-end crashes.

5.3 Access Management Needs

Background

Access to the roads connecting to the interstate system is vital to the adjacent property owners who need access for their businesses and residences. However, it has been shown that a proliferation of driveways and minor street intersections on major roadways and near ramp terminals can drastically increase conflicts, causing operational problems, decreasing capacity, and generally degrading service for all system users.

One of the primary goals of the future IAMP will be to develop an access management strategy that helps preserve the functionality of planning area roadway facilities, protecting their ability to accommodate traffic volumes safely and efficiently into the future, while accommodating the needs of businesses and residences. This goal will be implemented by the development of a set of short, medium, and long-term strategies. The access management strategies will comply with the objectives outlined in OAR 734-051, the administrative rule pertaining to access management on State highway facilities.

Access Spacing Standards and Access Inventory

The access management spacing standards for roadways in the study area vary according to jurisdiction, classification and posted speed. The OHP spacing standard for OR 42, a Statewide

Highway and Expressway, is one mile. As previously noted, the minimum spacing between the on-ramps of one interchange and the off-ramps of the downstream interchange is two miles for rural locations (outside of UGB). Also, the OHP specifies that access should be controlled on interchange crossroads within 1320 feet (1/4 mile) of ramp terminals. However, several private approaches currently exist on Old Highway 99 within 1320 feet of the Interchange 120 southbound ramp terminals. Douglas County has control over access spacing requirements on the remainder of Old Highway 99.

An inventory of existing access points on roads within the study area was compiled based on aerial and tax lot maps, and a site visit. The access points are listed in Appendix F. The access inventory revealed that many access points do not currently comply with the applicable access spacing standards. The IAMP will develop access management strategies for roadways in the study area to address safety or operational problems concerning existing or proposed private and public access points, with the overall goal of balancing the mobility needs with the access needs of residences and businesses.

5.4 Freight Movement Patterns & Needs

This section identifies significant freight movement patterns and freight movement deficiencies related to Interchanges 119 and 120. OR 42 and I-5 are both Statewide Freight System Routes on the National Highway System. OR 42 helps move freight in both Coos and Douglas Counties, while I-5 serves local, county, statewide, and interstate freight traffic. An automatic traffic recorder just north of Roseburg shows that approximately 18% of I-5 traffic is heavy vehicles. On OR 42, just west of Brockaway, the automatic traffic recorder shows approximately 13% of the traffic is heavy vehicles.

The *Intermodal Management System* (March 1997) identified no intermodal facilities for freight within the planning area. However, there were two project needs that the report identified within the area of interchanges 119 and 120. The first is a project that would allow the use of triple-trailers on OR 42 between Coos Bay and Roseburg. The second is a project that would provide a better highway connection between Coos Bay and Roseburg. One project that would address those needs would consist be the creation of a new highway with four lanes and flatter curves facilitating high-speed truck travel between the two cities. Such a facility would make travel safer for long vehicles and speed truck freight movement through the corridor.

ODOT's Motor Carrier Transportation Division has imposed weight restrictions in the vicinity of Interchanges 119 and 120. These include the Shady River Bridge over the South Umpqua River at MP 120.57 and the I-5 Overcrossing at Interchange 119.

The 1999 ODOT report entitled *Freight Moves the Oregon Economy* does not contain any specific needs or projects for the 119 and 120 study area. It does address some general improvements that could be applied in the area such as: installing additional automatic traffic recorders to monitor truck traffic, continuing to develop the Intermodal Management System, and continuing to identify and develop Intelligent Transportation Systems (ITS) applications for freight movements.

Other possible constraints identified in the region relate to possible clearance issues and pavement conditions. The county has noted that the clearance under I-5 on Speedway Road could have a possible height restriction. Grant Smith Road has been realigned and a traffic signal

installed to address past access and safety issues near interchange 119. As of 2001, the pavement condition on I-5 near interchanges 119 and 120 was identified as being in poor condition.

6 REFERENCES

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Exhibit B: FINDINGS

INTRODUCTION

This section documents that ODOT is not exceeding its authority and that this IAMP complies with all applicable state laws, regulations, and policies and is consistent with the local plan. The section is divided into two subsections. The first addresses the IAMP's compliance with State of Oregon laws, regulations, and policies; and the second addresses compatibility with applicable local plans.

STATE PLANS, POLICIES, AND RULES

Oregon Statewide Planning Program

Statewide Planning Goals

Statewide Planning Goals in General

Requirements

The 19 Statewide Planning Goals are the fundamental policies of Oregon's Statewide Planning Program. Statewide Planning Program law requires each city and county to adopt a comprehensive plan that complies with the Statewide Planning Goals. Zoning and land division ordinances are implementing tools for the comprehensive plans. The Land Conservation and Development Commission (LCDC) reviews local plans and ordinances for consistency with the Statewide Planning Goals. When LCDC has officially approved a local government's plan, that plan is considered "acknowledged." An acknowledged local comprehensive plan is the controlling document for land use in the geographic area covered by that plan. With the exception of the administrative rule that implements Statewide Planning Goal 12, Transportation, once there is an acknowledged comprehensive plan, the Statewide Planning Goals do not apply directly to state highway projects. Instead, state highway projects must be compatible with the applicable local comprehensive plans.¹ However, the Statewide Planning Goals do apply directly to any amendments to city and county comprehensive plans made to include a State highway project.

Finding

With the exception of the administrative rules that implement Goal 12 referenced above and addressed immediately below, the Statewide Planning Goals do not apply directly to IAMP 119 and 120. This is because Douglas County has an acknowledged comprehensive plan. When Douglas County adopts amendments to their comprehensive plan, they will need to demonstrate that the amendments comply with the Statewide Planning Goals.

¹ ORS 197.180 requires that "... state agencies shall carry out their planning duties, powers and responsibilities and take actions that are authorized by law with respect to programs affecting land use. . . (b) In a manner compatible with: (A) Comprehensive plans and land use regulations. . ."

Statewide Planning Goal 12, Transportation, and the TPR (Oregon Administrative Rules Chapter 660-012)

Statewide Planning Goal 12 is “To provide and encourage a safe, convenient and economic transportation system.” The TPR implements Goal 12 and contains the provisions addressed below that apply to the state transportation system plan, including facility plans such as this IAMP.

OAR 660-012-0030, Determination of Transportation Needs

Requirements. Applicable parts of OAR 660-012-0030 state:

(1) The TSP shall identify transportation needs relevant to the planning area and the scale of the transportation network being planned including:

- (a) State, regional, and local transportation needs;
- (b) Needs of the transportation disadvantaged;
- (c) Needs for movement of goods and services to support industrial and commercial development planned for pursuant to OAR 660-009 and Goal 9 (Economic Development).

* * *

(3) Within urban growth boundaries, the determination of local and regional transportation needs shall be based upon:

- (a) Population and employment forecasts and distributions that are consistent with the acknowledged comprehensive plan, including those policies that implement Goal 14. Forecasts and distributions shall be for 20 years and, if desired, for longer periods; and
- (b) Measures adopted pursuant to OAR 660-012-0045 to encourage reduced reliance on the automobile.

Finding. The IAMP complies with OAR 660-012-0030 for the following reasons:

- The IAMP addresses the need for the improvement projects described therein. Needs include the need to accommodate motor vehicle traffic, which includes meeting state, regional, and local transportation needs and needs for the movement of goods and services to support industrial and commercial development. They also include needed improvements to bicycle and pedestrian facilities, which serve the transportation disadvantaged.
- The improvement projects are based on a 20-year forecast of motor vehicle traffic which is based on 20-year forecasts of population and employment. These forecasts are consistent with the acknowledged comprehensive plans of Douglas County, the City of Roseburg and the City of Winston.

OAR 660-012-0035, Evaluation and Selection of Transportation System Alternatives

The following evaluates IAMP compliance with the sections of OAR 660-012-0035 applicable to it.

OAR 660-012-0035(1)

Requirements. OAR 660-012-0035(1) states:

The TSP shall be based upon evaluation of potential impacts of system alternatives that can reasonably be expected to meet the identified transportation needs in a safe manner and at a reasonable cost with available technology. The following shall be evaluated as components of system alternatives:

- (a) Improvements to existing facilities or services;
- (b) New facilities and services, including different modes or combinations of modes that could reasonably meet identified transportation needs;
- (c) Transportation system management measures;
- (d) Demand management measures; and
- (e) A no-build system alternative required by the National Environmental Policy Act of 1969 or other laws.

Finding. The IAMP complies with OAR 660-012-0035(1) because the alternatives development process evaluated the potential for the strategies listed in items a through d above including a no-build alternative.

OAR 660-012-0035(3)

Requirements. OAR 660-012-0035(3) states:

The following standards shall be used to evaluate and select alternatives:

- (a) The transportation system shall support urban and rural development by providing types and levels of transportation facilities and services appropriate to serve the land uses identified in the acknowledged comprehensive plan;
- (b) The transportation system shall be consistent with state and federal standards for protection of air, land and water quality including the State Implementation Plan under the Federal Clean Air Act and the State Water Quality Management Plan;
- (c) The transportation system shall minimize adverse economic, social, environmental and energy consequences;
- (d) The transportation system shall minimize conflicts and facilitate connections between modes of transportation; and
- (e) The transportation system shall avoid principal reliance on any one mode of transportation by increasing transportation choices to reduce principal reliance on the automobile. In MPO areas this shall be accomplished by selecting transportation alternatives which meet the requirements in section (4) of this rule.

Finding. The IAMP complies with OAR 660-012-0035(3) because:

- The future improvement projects will support urban and rural development by providing a transportation facility appropriate to serve the land uses in the interchange area identified in the Douglas County Comprehensive Plan.
- In addition to accommodating automobile travel, the improvement projects will improve facilities for other modes.

ODOT State Agency Coordination Program

Statewide Planning Program law requires ODOT and other state agencies to carry out their duties “in a manner compatible with” local comprehensive plans and land use regulations.² In addition, state agencies are required to have policies to coordinate with other agencies and local governments in the performance of their duties under the Statewide Planning Program. ODOT implemented these requirements as applied to the I-5 Interchanges 119 and 120 Area Management Plan (IAMP) by adopting the ODOT State Agency Coordination Program. It includes the following provisions that apply to this IAMP. References to “the Department” mean ODOT.

OAR 731-015-0065(1)

Requirement

Except in the case of minor amendments, the Department shall involve DLCD and affected metropolitan planning organizations, cities, counties, state and federal agencies, special districts and other interested parties in the development or amendment of a facility plan. This involvement may take the form of mailings, meetings or other means that the Department determines are appropriate for the circumstances. The Department shall hold at least one public meeting on the plan prior to adoption.

Finding

731-015-0065(1) applies to the IAMP because the IAMP is part of the facility plan for the I-5 interchanges at exits 119 and 120. The IAMP complies with 731-015-0065(1) because:

- The Project Management Team (TAC) for the project included representatives of the City of Roseburg, City of Winston, Cow Creek Band of Umpqua Tribe of Indians and Douglas County.
- IAMP team members consulted Umpqua Transit in development of the IAMP.
- FHWA personnel were invited to TAC meetings and received copies of materials..
- Four public open houses were held during development of the IAMP.
- All meetings of the TAC were open to the public. Douglas County will hold public hearings on the IAMP prior to county adoption.

OAR 731-015-0065(2)

Requirement

The Department shall provide a draft of the proposed facility plan to planning representatives of all affected cities, counties and metropolitan planning organization and shall request that they identify any specific plan requirements which apply, any general plan requirements which apply and whether the draft facility plan is compatible with the acknowledged comprehensive plan. If no reply is received from

² Oregon Revised Statutes section 197.180(1)(b).

an affected city, county or metropolitan planning organization within 30 days of the Department's request for a compatibility determination, the Department shall deem that the draft plan is compatible with that jurisdiction's acknowledged comprehensive plan. The Department may extend the reply time if requested to do so by an affected city, county or metropolitan planning organization.

Finding

A copy of the IAMP and notice of intent to adopt was sent to Douglas County, DLCD, the cities of Roseburg and Winston and the Cow Creek Band of Umpqua Tribe of Indians via certified mail on March 30, 2009. The notice requested a statement of compatibility with the acknowledged comprehensive plan and provided 30 days for comment.

OAR 731-015-0065(3)

Requirement

If any statewide goal or comprehensive plan conflicts are identified, the Department shall meet with the local government planning representatives to discuss ways to resolve the conflicts. These may include:

- (a) Changing the draft facility plan to eliminate the conflicts;
- (b) Working with the local governments to amend the local comprehensive plans to eliminate the conflicts; or
- (c) Identifying the conflicts in the draft facility plan and including policies that commit the Department to resolving the conflicts prior to the conclusion of the transportation planning program for the affected portions of the transportation facility.

Finding

No jurisdictions have replied to the 30 day notice. Pursuant to OAR 731.015.0065, ODOT deems that the IAMP is compatible with the Douglas County Comprehensive Plan.

OAR 731-015-0065(4)

Requirement

The Department shall evaluate and write draft findings of compatibility with acknowledged comprehensive plans of affected cities and counties, findings of compliance with any statewide planning goals which specifically apply as determined by OAR 660-030-0065(3)(d), and findings of compliance with all provisions of other statewide planning goals that can be clearly defined if the comprehensive plan of an affected city or county contains no conditions specifically applicable or any general provisions, purposes or objectives that would be substantially affected by the facility plan.

Finding

The IAMP complies with 731-015-0065(4) because:

- The findings beginning on page 16 address the compatibility with the acknowledged comprehensive plan of Douglas County.

- The IAMP complies with OAR 660-012-0015 and therefore complies with OAR 660-030-0065(3)(d). OAR 660-030-0065(3)(d) states:

A state agency shall adopt findings demonstrating compliance with the statewide goals for an agency land use program or action if one or more of the following situations exists: * * * (d) A statewide goal or interpretive rule adopted by the Commission under OAR chapter 660 establishes a compliance requirement directly applicable to the state agency or its land use program.

The only interpretive rule that qualifies under OAR 660-030-0065(3)(d) is 660-012-0015(1), which states:

ODOT shall prepare, adopt and amend a state TSP in accordance with ORS 184.618, its program for state agency coordination certified under ORS 197.180, and OAR 660-012-0030, 660-012-0035, 660-012-0050, 660-012-0065 and 660-012-0070. The state TSP shall identify a system of transportation facilities and services adequate to meet identified state transportation needs:

- (a) The state TSP shall include the state transportation policy plan, modal systems plans and transportation facility plans as set forth in OAR 731, Division 15;
- (b) State transportation project plans shall be compatible with acknowledged comprehensive plans as provided for in OAR 731, Division 15. Disagreements between ODOT and affected local governments shall be resolved in the manner established in that division.

This IAMP is an amendment to the state TSP and the OTC will adopt it in compliance with ORS 184.618.³ This section of the findings documents compliance with ODOT's State Agency Coordination Program, which is ODOT's "program for state agency coordination certified under ORS 197.180." These findings document compliance with OAR 660-012-0030 on page xx, OAR 660-012-0035 on page xx, and OAR 660-012-0065 on page xx.

³ ORS 184.618 states:

- (1) As its primary duty, the Oregon Transportation Commission shall develop and maintain a state transportation policy and a comprehensive, long-range plan for a safe, multimodal transportation system for the state which encompasses economic efficiency, orderly economic development and environmental quality. The plan shall include, but not be limited to, aviation, highways, mass transit, pipelines, ports, rails and waterways. The plan shall be used by all agencies and officers to guide and coordinate transportation activities and to insure transportation planning utilizes the potential of all existing and developing modes of transportation.
- (2) As the plan is developed by the commission, the Director of Transportation shall prepare and submit to the commission for approval, implementation programs. Work approved by the commission to carry out the plan shall be assigned to the appropriate unit of the Department of Transportation.
- (3) The director and members of the commission shall give safety, economic development and the provisions of industrial site services priority in fund allocation decisions.

OAR 731-015-0065(5)

Requirement

The Department shall present to the Transportation Commission the draft plan, findings of compatibility with the acknowledged comprehensive plans of affecting [sic] cities and counties and findings of compliance with applicable statewide planning goals.

Finding

The IAMP complies with 731-015-0065(5) because ODOT will present to the OTC a draft of this IAMP, which includes these findings. These findings address compatibility with the Douglas County Comprehensive Plan on page xx, below.

OAR 731-015-0075(1)

Requirement

The Department shall involve affected cities, counties, metropolitan planning organizations, state and federal agencies, special districts and other interested parties in the development of project plans. The Department shall include planning officials of the affected cities, counties and metropolitan planning organization on the project technical advisory committee.

Finding

- The IAMP developed for interchanges 119 and 120 on Interstate 5 complies with this requirement because the TAC for the project included representatives of the Cities of Roseburg, Winston, Douglas County, and the Cow Creek Band of Umpqua Tribe of Indians.

Oregon Transportation Plan

The following addresses how the IAMP complies with policies of the Oregon Transportation Plan (OTP).⁴ It addresses only polices that apply by their own terms to the project.

Strategy 1.2.1

Requirements

* * *

Where opportunities for coordination with other transportation service providers exist, work to integrate programs and align investments of service providers involved with the design, delivery and funding of mobility services.

* * *

⁴ ODOT, Oregon Transportation Plan, September 2006.

Promote frequent public transit, intercity bus and passenger rail services as a method to increase ridership and decrease travel times, especially during peak travel periods and along heavily traveled highway corridors.

Finding

The IAMP complies with Strategy 1.2.1 because the TDM measures identified on pages 28-30 include recommendations to coordinate with other transportation service providers and promote increased ridership and decreased travel times on public transit.

Strategy 2.1.1

Requirements

Promote transportation demand management and other transportation system operations techniques that reduce peak period travel, help shift traffic volumes away from the peak period and improve traffic flow. Such techniques may include high occupancy vehicle lanes with express transit service, truck-only lanes, van/carpools, park-and-ride facilities, parking management programs, telework, flexible work schedules, peak period pricing, ramp metering, traveler information systems, traffic signal optimization, route diversion strategies, incident management and enhancement of rail, transit, bicycling and walking.

Finding

The IAMP complies with Strategy 2.1.1 because the TDM measures identified on pages 28-30 promote reduced peak period travel through transit, carpools, off-peak shifts, etc..

Strategy 4.3.1

Requirements

Support the sustainable development of land with a mix of uses and a range of densities, land use intensities and transportation options in order to increase the efficiency of the transportation system. Support travel options that allow individuals to reduce vehicle use.

Finding

The IAMP complies with Strategy 4.3.1 because the TDM measures identified on pages 28-30 support travel options through increased use of transit, promotes walking and moving traffic to off-peak periods to reduce motor vehicle use.

Strategy 7.3.1

Requirements

In all phases of decision-making, provide affected Oregonians early, open, continuous, and meaningful opportunity to influence decisions about proposed transportation activities. When preparing and adopting a multimodal transportation plan, modal/topic plan, facility plan or transportation improvement program, conduct and publicize a program for citizen, business, and tribal, local, state and federal government involvement. Clearly define the procedures by which these groups will be involved.

Finding

Strategy 7.3.1 applies to the IAMP because the IAMP is a facility plan for I-5 interchanges 119 and 120. The IAMP complies with Strategy 7.3.1 because of the following:

- Since the outset of development of the IAMP, ODOT held ten meetings of the PDT. The PDT included representatives of ODOT, the City of Roseburg, the City of Winston, Douglas County, Department of Land Conservation and Development and the Cow Creek Band of Umpqua Tribe of Indians.
- A series of 4 open houses were provided to solicit citizen input. In addition, a survey of stakeholders was conducted.
- IAMP team members consulted directly with representatives from Douglas County on the formulation of IAMP measures.
- ODOT discussed the IAMP with Cow Creek Band of Umpqua Indian tribe.

Oregon Highway Plan

The following addresses how the IAMP complies with policies of the OTP. It addresses only polices that apply by their own terms to the IAMP.

Action 1A.1

Requirements

Use the following categories of state highways, and the list in Appendix D, to guide planning, management, and investment decisions regarding state highway facilities:

Interstate Highways (NHS) provide connections to major cities, regions of the state, and other states. A secondary function in urban areas is to provide connections for regional trips within the metropolitan area. The Interstate Highways are major freight routes and their objective is to provide mobility. The management objective is to provide for safe and efficient high-speed continuous-flow operation in urban and rural areas.

* * *

Statewide Highways provide inter-urban and inter-regional mobility and provide connections to larger urban areas, ports, and major recreation areas that are not directly served by Interstate Highways. A secondary function is to provide connections for intra-urban and intra-regional trips. The management objective is to provide safe and efficient, high-speed, continuous-flow operation. In constrained and urban areas, interruptions to flow should be minimal. Inside Special Transportation Areas (STAs), local access may also be a priority.

* * *

Finding

The IAMP complies with Action 1A.1 because it uses the above classifications to determine the mobility performance standards applicable to intersections, then incorporates measures to achieve compliance with the mobility performance standards over the planning period. See:

- in Table C-1 of Appendix C, the classification of I-5 as an Interstate Highway;
- in Table C-1 of Appendix C, the classification as Statewide Highways of OR 42 in the Green UUA;
- in Table C-2 of Appendix C, the OHP mobility performance standards applicable to the I-5 Mainline, the interchange ramp terminals, and OR 42;
- in Table 1 on page 12 of the Conditions Report (Appendix F) of the IAMP, applicable OHP mobility performance standards and forecasted 2025 v/c ratios are identified.

The forecasted 2025 v/c ratios at the critical intersections show that the IAMP will achieve the mobility performance standards in the OHP. “Critical intersections” are intersections where forecasted 2025 v/c ratios approach or exceed the applicable standards without IAMP measures.

Action 1B.1

Requirements

Actively pursue the objectives and designations in the Background, Intent and Actions in Policy 1B, as appropriate, through:

* * *

- Facility and transportation system plans;

* * *

Policy 1B, Land Use and Transportation, states:

This policy recognizes the role of both State and local governments related to the state highway system:

- State and local government must work together to provide safe and efficient roads for livability and economic viability for all citizens.
- State and local government must share responsibility for the road system.
- State and local government must work collaboratively in planning and decision-making relating to transportation system management.

It is the policy of the State of Oregon to coordinate land use and transportation decisions to efficiently use public infrastructure investments to:

- Maintain the mobility and safety of the highway system;
- Foster compact development patterns in communities;
- Encourage the availability and use of transportation alternatives;
- Enhance livability and economic competitiveness; and
- Support acknowledged regional, city and county transportation system plans that are consistent with this Highway Plan

Finding

Action 1B.1 applies to the IAMP because the IAMP is a facility plan for Interstate 5 interchanges 119 and 120. The IAMP complies with Action 1B.1 for the following reasons:

- The IAMP is a collaboration between ODOT and Douglas County under which future improvements identified in the IAMP will one day be constructed.
- The roles ODOT and Douglas County will play in the management of the interchange area, including both the roadway network and land use, exemplify sharing of responsibility for the road system between state and local government.
- The IAMP serves as an instrument to coordinate land use and transportation to maintain the mobility of the highway system.

Action 1B.2

Requirement

Use the rules, standards, policies and guidance developed by ODOT to implement Policy 1B. These include but are not limited to Oregon Administrative Rule Chapter 734, Division 51 on Access Management, the ODOT Highway Design Manual, ODOT Transportation System Plan Guidelines and ODOT Development Review Guidelines, LCDC Goal 12 on Transportation and the Transportation Planning Rule.

Finding

The IAMP complies with Action 1B.2 because it applies Division 51 of Oregon Administrative Rule Chapter 734 to implement Policy 1B. See the findings on compliance with Oregon Administrative Rule Chapter 734-051 on page **XX**, below.

Action 1B.8

Requirement

Work with local governments to maintain the highway mobility standards on state highways by creating effective development practices through the following means:

* * *

- Avoid the expansion of urban growth boundaries along Interstate and Statewide Highways and around interchanges unless ODOT and the appropriate local governments agree to an interchange management plan to protect interchange operation or an access management plan for segments along non-freeway highways.

Finding

Retention of the current Comprehensive Plan Designations and Zoning shown on page 34 and included in Appendix E, effectuates Action 1B.8 by affording ODOT the ability to coordinate with Douglas County to protect the operation of the interchanges before the the Green UUA is expanded or land uses intensified.

Action 1F.1

Requirement

Apply the highway mobility standards in Table 6 to all state highway sections located outside of the Portland metropolitan area urban growth boundary . . .

Finding

The IAMP complies with Action 1F.1 because it applies the mobility standards in Table 6 of the OHP. See the findings for Action 1A.1.

Action 2D.1

Requirement

Conduct effective public involvement programs that create opportunities for citizens, businesses, regional and local governments, state agencies, and tribal governments to comment on proposed policies, plans, programs, and improvement projects.

Finding

The IAMP complies with Action 2D.1. See the findings for OTP Strategy 7.3.1.

Action 2D.3

Requirement

Coordinate with local governments and other agencies to ensure that public involvement programs target affected citizens, businesses, neighborhoods, and communities, as well as the general public.

Finding

The IAMP complies with Action 2D.3 because ODOT coordinated with Douglas County, the cities of Roseburg and Winston and the Cow Creek Band of Umpqua Tribe of Indians were all represented on the TAC. A stakeholder survey was conducted and a series of open houses were held to solicit citizen input.

OAR 734-051-0155, Access Management Plans and Interchange Area Management Plans

OAR 734-051-0155(1)

Requirement

The Department encourages the development of Access Management Plans and Interchange Area Management Plans to maintain and improve highway performance and safety by improving system efficiency and management before adding capacity.

Access Management Plans and Interchange Area Management Plans:

- (a) Must be consistent with Oregon Highway Plan;
- (b) Must be used to evaluate development proposals; and
- (c) May be used to determine mitigation for development proposals.

Finding

The IAMP complies with OAR 734-051-0155(1). As described above starting on page 35, the IAMP is consistent with the OHP. ODOT will use the IAMP to evaluate development proposal in the IMA. ODOT may use the IAMP to determine mitigation for development proposals in the IMA.

OAR 734-051-0155(2)

Requirement

Access Management Plans and Interchange Area Management Plans must be adopted by the Oregon Transportation Commission as a transportation facility plan consistent with the provisions of OAR 731-015-0065. Prior to adoption by the Oregon Transportation Commission, the Department will work with local governments on any amendments to local comprehensive plans and transportation system plans and local land use and subdivision codes to ensure the proposed Access Management Plan and Interchange Area Management Plan is consistent with the local plan and codes.

Finding

The IAMP complies with OAR 734-051-0155(2). The OTC will adopt the IAMP as a transportation facility plan. As discussed previously, adoption will be consistent with OAR 731-015-0065. ODOT worked with Douglas County on amending the Douglas County Comprehensive Plan to include this IAMP .

OAR 734-051-0155(7)(c)

Requirement

Include short, medium, and long-range actions to improve operations and safety within the designated study area.

Finding

The measures in this IAMP will improve operations in the IMA in the short, medium, and long terms. Inclusion of short, medium, and long-range actions is needed for access management measures to take advantage of opportunities that arise when development, redevelopment, and street improvement projects occur in the future.

OAR 734-051-0155(7)(d)

Requirement

Consider current and future traffic volumes and flows, roadway geometry, traffic control devices, current and planned land uses and zoning, and the location of all current and planned approaches.

Finding

The traffic analysis in Appendix F of this IAMP demonstrates that IAMP development considered current and future traffic volumes and flows, roadway geometry, traffic control devices, and the location of all current and planned approaches. The land use scenarios in Appendix F demonstrate that IAMP development considered current and planned land uses and zoning.

OAR 734-051-0155(7)(e)

Requirement

Provide adequate assurance of the safe operation of the facility through the design traffic forecast period, typically 20 years.

Finding

The IAMP addresses safety through 2025 within the IMA.

OAR 734-051-0155(7)(f)

Requirement

Consider existing and proposed uses of all the property within the designated study area consistent with its comprehensive plan designations and zoning.

Finding

The land use designations in Appendix E demonstrate that IAMP development considered existing and proposed uses of all the property within the designated study area consistent with its comprehensive plan designations and zoning. See, in particular, Annexes 1 and 2 of Appendix F.

OAR 734-051-0155(7)(g)

Requirement

Be consistent with any applicable Access Management Plan, corridor plan or other facility plan adopted by the Oregon Transportation Commission.

Finding

This criterion does not apply because there is no applicable access Management Plan, corridor plan, or other facility plan adopted by the OTC.

OAR 734-051-0155(7)(h)

Requirement

Include polices, provisions and standards from local comprehensive plans, transportation system plans, and land use and subdivision codes that are relied upon for consistency and that are relied upon to implement the Interchange Area Management Plan.

Finding

Douglas County. Appendix F contains the policies, provisions, and standards from the Comprehensive Plan and Land Development Code which the IAMP relies on for consistency and to implement the IAMP.

LOCAL PLANS AND POLICIES

ORS 197.180 requires that “. . . state agencies shall carry out their planning duties, powers and responsibilities and take actions that are authorized by law with respect to programs affecting land use. . . (b) In a manner compatible with: (A) Comprehensive plans and land use regulations. . .”

Douglas County Comprehensive Plan

The following address how the IAMP is compatible with applicable policies of the Douglas County Comprehensive Plan. It addresses only polices that are related to the Green area interchanges and this IAMP.

Green Transportation System Plan (2001)

The Green Transportation System Plan (TSP) was adopted in 2001 to provide a detailed analysis of transportation facilities and levels of service for the Green Unincorporated Urban Area. The TSP inventories and analyzes the current transportation system and predicts conditions a buildout based on the buildable lands inventory and population projections..

Finding

The IAMP was developed using the policies and projects contained in the Green UUA TSP. The IAMP also utilized the same traffic model as the TSP incorporating employment and population projections.

Douglas County Transportation System Plan (2001)

Policy

The preparation and revision of the County Transportation System Plan shall be coordinated with the Oregon Department of Transportation.

Policy

The County Transportation System Plan relies upon the Oregon Transportation System Plan and its modal and multi-modal plans for analysis and policy direction on state facilities and relies upon the Oregon Department of Transportation to apply plan policies and programs on state facilities.

Policy

Existing and planned transportation facilities and corridors shall be protected from conflicting land uses.

Policy

All transportation facilities shall be periodically evaluated for their adequacy to accommodate existing demand.

Finding

Preparation of the IAMP was coordinated with Douglas County during its development. Douglas County participated as a member of the TAC. The IAMP evaluated the adequacy of existing and future demand on the interchanges and makes a set of recommended multi-modal improvement projects and actions to meet anticipated demand.

Exhibit D

I-5 Exits 119 and 120 Interchange Area Management Plan

Copies of the I-5 Exits 119 and 120 Interchange Area Management Plan can be obtained by downloading it at: [ftp://ftp.odot.state.or.us/outgoing/ OTC_May09](ftp://ftp.odot.state.or.us/outgoing/OTC_May09) or contacting:

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