APPENDIX C

Mobility and Spacing Standards and Access Management

This appendix includes relevant mobility and spacing standards from the Oregon Highway Plan and Polk County Transportation System Plan. Also included is OAR 734-051-0155, which provides requirements for Access Management Plans as part of highway segment facility plans.

Appendix C:[4]

Access Management Standards

Access Management Spacing Standards

The following tables show the access spacing standards for the access management classifications listed in Goal 3, Policy 3A: Classification and Spacing Criteria, Action 3A.1.

Table 12: Interchange Spacing (1)

Access Management Classification	Area	Interchange Spacing(2)(3)
Interstate* and Non-Interstate Freeways (NHS)	Urban	3 miles (5 kilometers)
	Rural	6 miles (10 kilometers)
All Expressways (NHS), Statewide (NHS), Regional and District Highways	Urban	1.9 miles (3 kilometers)
	Rural	3 miles (5 kilometers)

Notes for Table 12:

* Interstate interchange spacing must be in conformance with federal policy.

(1) The spacing standards in Table 12 are for planning and design of new interchanges on freeways or expressways. A design exception is required to change these standards. A proposed design exception should also consider the spacing requirements in the Interchange Access Management Area Tables 16-19.

(2) Crossroad to crossroad centerline distance.

(3) A design exception is required to change these planning spacing standards.

[4] Appendix C was replaced as part of Technical Amendment 06 - 21 to include changes adopted as Amendments 04 - 13 and 05 - 16.

Table 13: Access Management Spacing Standards For Statewide Highways [1][2][3][4]

(Measurement in Feet)*

Posted Speed[5]	Rural Expressway **	Rural	Urban Expressway ** ***	Urban ****	STA
≥55	5280	1320	2640	1320	
50	5280	1100	2640	1100	
40 & 45	5280	990	2640	990	
30 & 35		770		720	[6]
≤25		550		520	[6]

Notes: The numbers in parentheses refer to explanatory notes that follow tables 13-15.

* Measurement of the approach road spacing is from center to center on the same side of the roadway.

** Spacing for Expressway at-grade intersections only. See Table 12 for interchange spacing.

*** These standards also apply to Commercial Centers.

**** The Urban standard applies in UBAs unless a management plan agreed to by ODOT and the local government(s) establishes a different standard. Spacing standards on access controlled facilities are also guided by those controls.

Table 14: Access Management Spacing Standards for Regional Highways [1][2][3][4]

(Measurement in Feet)*

Posted Speed[5]	Rural Expressway **	Rural	Urban Expressway ** ***	Urban ****	STA
≥55	5280	990	2640	990	
50	5280	830	2640	830	
40 & 45	5280	750	2640	750	
30 & 35		600		425	[6]
≤25		450		350	[6]

Notes: The numbers in parentheses refer to explanatory notes that follow tables 13-15.

* Measurement of the approach road spacing is from center to center on the same side of the roadway.

** Spacing for Expressway at-grade intersections only. See Table 12 for interchange spacing.

*** These standards also apply to Commercial Centers.

**** The Urban standard applies in UBAs unless a management plan agreed to by ODOT and the local government(s) establishes a different standard. Spacing standards on access controlled facilities are also guided by those controls.

Table 15: Access Management Spacing Standards for District Highways [1][2][3][4]

(Measurement in Feet)*

Posted Speed[5]	Rural Expressway **	Rural	Urban Expressway ** ***	Urban ****	STA
≥55	5280	700	2640	700	
50	5280	550	2640	550	
40 & 45	5280	500	2640	500	
30 & 35		400		350	[6]
≤25		400		350	[6]

Notes: The numbers in parenthesis refer to explanatory notes that follow tables 13-15.

* Measurement of the approach road spacing is from center to center on the same side of the roadway.

** Spacing for Expressway at-grade intersections only. See Table 12 for interchange spacing.

*** These standards also apply to Commercial Centers.

**** The Urban standard applies in UBAs unless a management plan agreed to by ODOT and the local government(s) establishes a different standard. Spacing standards on access controlled facilities are also guided by those controls.

Notes on Tables 13, 14 and 15:

(1) These access management spacing standards are for unsignalized approaches only. Signal spacing standards supersedes access management spacing standards for approaches.

(2) These access management spacing standards do not apply to approaches in existence prior to April 1, 2000 except as provided in OAR 734-051-0115(1)(c) and 734-051-0125(1)(c).

(3) For in-fill and redevelopment, see OAR 734-051-0135(4).

(4) For deviations to the designated access management spacing standards see OAR 734-051-0135.

(5) Posted Speed: Posted speed can only be adjusted (up or down) after a speed study is conducted and that study determines the correct posted speed to be different than the current posted speed. In cases where actual speeds are suspected to be much higher than posted speeds, the Department reserves the right to adjust the access management spacing accordingly. A determination can be made to go to longer access management spacing standards as appropriate for a higher speed. A speed study will need to be conducted to determine the correct speed.

(6) Minimum access management spacing for public road approaches is the existing city block spacing or the city block spacing as identified in the local comprehensive plan. Public road connections are preferred over private driveways and in STAs driveways are discouraged. However, where driveways are allowed and where land use patterns permit, the minimum access management spacing for driveways is 175 feet (55 meters) or mid-block if the current city block is less than 350 feet (110 meters).

MAXIMUM VOLUME TO CAPACITY RATIOS OUTSIDE METRO[A, B, C, 17]							
Highway Category	**Inside Urban Growth Boundary**					**Outside Urban Growth Boundary**	
	STA[D]	**MPO**	**Non-MPO Outside of STAs where non-freeway posted speed <= 35 mph, or a Designated UBA**	**Non-MPO outside of STAs where non-freeway speed > 35 mph**	**Non-MPO where non-freeway speed limit >= 45 mph**	**Unincorporated Communities**	**Rural Lands**
Interstate Highways [E]	N/A	0.80	N/A	0.70	0.70	0.70	0.70
Statewide Expressways	N/A	0.80	0.70	0.70	0.70	0.70	0.70
Freight Route on a Statewide Highway	0.85	0.80	0.80	0.75	0.70	0.70	0.70
Statewide (not a Freight Route)	0.90	0.85	0.85	0.80	0.75	0.75	0.70
Freight Route on a Regional or District Highway	0.90	0.85	0.85	0.80	0.75	0.75	0.70
Expressway on a Regional or District Highway	N/A	0.85	N/A	0.80	0.75	0.75	0.70
Regional Highways	0.95	0.85	0.85	0.80	0.75	0.75	0.70
District / Local Interest Roads	0.95	0.90	0.90	0.85	0.80	0.80	0.75

Table 6: Maximum volume to capacity ratios for peak hour operating conditions

Notes for Table 6

[A] OHP Amendment 00-04 established alternative mobility standards for Portland Metro and the Rogue Valley MPO (RVMPO). For Metro, see Table 7, below. For RVMPO see note B, below and the OHP amendment establishing the RVMPO alternative standards located on the web at: *http://www.oregon.gov/ODOT/TD/TP/docs/orhwyplan/registry/0004.pdf* . Where there is a conflict between the Table 6 standards and the established alternative mobility standards, the more tolerant standard (higher v/c ratio) applies.

[B] The maximum volume to capacity ratio at the Northbound and Southbound off-ramps of the South Medford Interchange is >1.0 for four hours daily until the new South Medford Interchange is constructed. The maximum v/c ratio at Highway 99 at Stewart Avenue is >1.0 for two hours daily. When the new interchange is completed, the mobility standards for the ramps will be those in Table 6.

[C] For the purposes of this policy, the peak hour shall be the 30th highest annual hour. This approximates weekday peak hour traffic in larger urban areas.

[D] Interstates and Expressways shall not be identified as Special Transportation Areas.

[E] National Highway System (NHS) highway design requirements are addressed in the Highway Design Manual (HDM).

[17] Table 6 was replaced in August 2005, part of OHP Amendment 05-16.

Table 18: Minimum Spacing Standards Applicable to Non-Freeway Interchanges with Two-Lane Crossroads

Category of Mainline	Type of Area	Speed of Mainline	Spacing Dimension				
			B	C	X	Y	Z
Expressways, Statewide, Regional and District Highways	Fully Developed Urban	45 mph (70 kph)	2640 ft (800 m)	1 mi. (1.6 km)	750 ft. (230 m)	1320 ft. (400 m)	990 ft. (300 m)
	Urban	45mph (70 kph)	2640 ft. (800 m)	1 mi. (1.6 km)	1320 ft. (400 m)	1320 ft. (400 m)	1320 ft. (400 m)
	Rural	55 mph (90 kph)	1 mi. (1.6 km)	2 mi. (3.2 km)	1320 ft. (400 m)	1320 ft. (400 m)	1320 ft. (400 m)

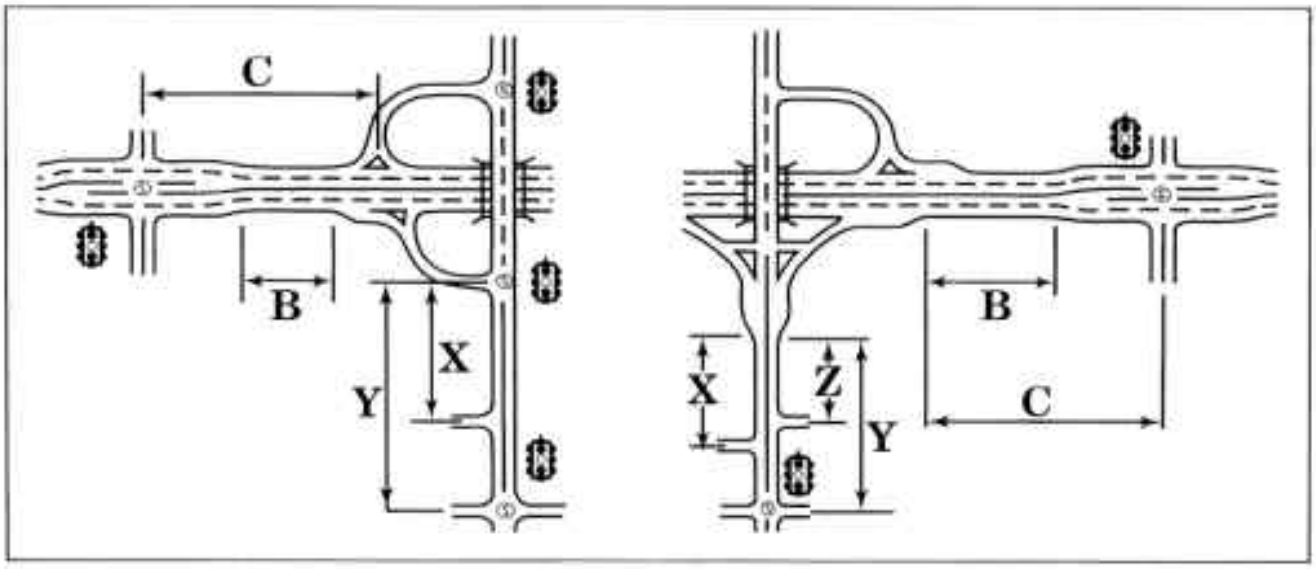
Notes:

1) If the crossroad is a state highway, these distances may be superseded by the Access Management Spacing Standards, providing the distances are greater than the distances listed in the above table.
2) No four-legged intersection may be placed between ramp terminals and the first major intersection.
3) Use four-lane cross road standards for urban and suburban locations that are likely to be widened.
4) No at-grade intersections are permitted between continuous interchanges less than 5 miles apart.

Notes for Figure 20:

B = Distance between the start and end of tapers.
C = Distance between nearest at-grade and ramp terminal intersections or the end/start of the taper section.
X = Distance to first approach on the right, right in/right out only.
Y = Distance to first intersections where left turns are allowed.
Z = Distance between the last right in/out approach road and the start of the taper for the on-ramp.

Figure 20: Measurement of Spacing Standards for Table 18



2. Statewide Highways (NHS)

(Examples: Oregon Route 58, Oregon Route 42, US Route 30, US Route 97, and US Route 20)

a. Rural Expressways

- Expressways are to be designated by action of the Oregon Transportation Commission. (See Action 1A.2.)

- Expressways are existing two lane and multi-lane highways or planned highways that provide for safe and efficient high speed and high volume traffic movements.

- Private access is discouraged.

  – There is a long-range plan to eliminate, as possible, existing approach roads as opportunities occur or alternate access becomes available.

  – Access rights will be purchased and a local road network may be developed consistent with the function of the roadway.

- Public road connections are highly controlled and must be spaced appropriately. Future grade separations (interchanges) may be an option. Compatible land use actions may be necessary and shall be included in local comprehensive plans.

- Traffic signals are discouraged.

- Nontraversible medians must be constructed in the modernization of all multi-lane Expressways that have traversible medians.

- Parking is prohibited.

- The primary function of Expressways is to provide connections to larger urban areas, ports and major recreation areas with minimal interruptions.

b. Other Rural Highways[21]

- Statewide Rural Highways provide for high speed, continuous flow and through traffic movement.

- Direct access to the abutting property is a minor objective.

[21] Nomenclature for highways with no special designations ("other") has been changed here and throughout this section for consistency with Policy 1B changes made August 17, 2005, Amendment 05-16.

Table 8
Polk County Road Standards[1,2,3]

Functional Classification	Right-of-Way Urban/Rural	Developed Roadway Urban/Rural	Parking Urban/Rural	Bikeway Urban/Rural
Major Arterial	84 feet/N/A	70 feet/N/A	No/N/A	Bike Lane/N/A
Minor Arterial	68 feet/60 feet	44 feet/44 feet	No/No	Bike Lane/Shared Roadway
Major Collector	68 feet/60 feet	44 feet/36 feet	No/No	Bike Lane/Shared Roadway
Minor Collector	64 feet/60 feet	44 feet/30 feet	Yes/No	None/None
Resource Road	N/A	N/A	No	N/A/None
Local	60 feet/60 feet	44 feet/22 feet	Yes/Yes	None/None
Cul-de-Sac	60 feet/60 feet	34 feet/22 feet	Yes/No	None/None

Source: Polk County Road Standards and Subdivision Ordinance

[1] Within the UGB, the applicable city's standards apply
[2] Roads which are designated as bike routes shall have a minimum of 4 foot paved shoulders, and the shared shoulder bikeway shall prevail
[3] When volumes on county road exceed 1,000 ADT, shoulder bikeways will be used instead of shared roadway bikeways.

Access Management

Roads perform two basic functions--access to property for local traffic and allowing transit of through traffic. The functional classification of a road gives a clue as to its primary function. At the upper level, arterials are intended to primarily serve the through traffic, and at the lower end, local roads are intended to provide access to property. Collectors generally serve both purposes.

Since the majority of roads evolved from beginnings as local roads to a higher level of classification as an area grew, it is often difficult to attain the desired purpose without some reduction of service to residential, industrial, or commercial areas. A state highway which serves as the main street for a small town is often used for short trips and access to local businesses, industry, or even residences. But with increased traffic on the highway from growth in and/or out of the city, efficient service for both local and through travel becomes more and more difficult to attain. Lack of access management and insufficient coordination of land uses along the highway contribute to the degradation of the road network. Desire for traffic signals, new road approaches and driveways decrease speed and capacity while increasing both congestion and hazards. It has been estimated that the addition of a traffic signal will result in an almost automatic degradation of a road's level of service by one level.

Overall, access management is controlling vehicular access to a road. The simplest form of "management" is access denial which prohibits new accesses onto a major roadway. A related method of management is controlling where accesses are placed. Other forms include restricting left turns onto a highway, or not allowing cross traffic at intersections. Limits such as these provide a higher vehicle capacity on the major highway, which in turn allows higher speeds

without requiring construction of additional traffic lanes. For several years, the state has placed access limits on its highway system. **Table 9** shows these limits for the state highways in Polk County.

On the majority of Polk County roads, congestion is not now, or for the next twenty years expected to be a problem. Therefore, access management has traditionally been to ensure safety, and Polk County's road permit process is primarily to satisfy that purpose.

The county access management program differentiates requirements based upon functional classification. The general requirement for locating accesses is that they shall be provided in a manner and location that shall protect public safety. In addition to the general requirement, the following standards govern accesses onto county roads:

- Every dwelling shall have access to a public road or an easement. An easement for access to two or more dwelling units on lots established after November 13, 1970 shall be at least 60 feet wide. (Polk County Zoning Ordinance)
- The maximum number of access points from a lot or parcel in an adopted Urban Growth Boundary is one, but no more than 40 percent of the frontage shall be used for the access. This standard does not apply to "flag lots" or lots or parcels located on a cul-de-sac which have less than 50 feet of road frontage. (Polk County Road Standards)
- The maximum number of access points from a lot or parcel outside an adopted Urban Growth Boundary is two. However, additional access points may be permitted by the Public Works Director. (Polk County Road Standards)
- The spacing for driveway accesses is dependent on minimum stopping sight distance, and varies from 125 feet at speeds of 20 mph to 525 feet at speeds of 60 mph. For intersections, the spacing distance ranges from 200 at speeds of 20 mph to 575 feet at speeds of 60 mph . Refer to the Polk County Road Standards for further details.
- For access distances within a UGB, the applicable city's standard shall apply. For ease of reference, they are repeated in **Table 9**. However, a permit applicant and/or permit approval authority should periodically review the standards with the city to ensure currency.

Table 9
Access Management Standards
State Highways

Access Category & Hwy.	Level of Importance[1]	Section (Urban/ Rural)	Intersection				Signal Spacing[4]	Median Control
			Public Road		Private Drive[3]			
			Type [2]	Spacing	Type	Spacing		
Cat. 3 Hwy. 18/22	Statewide	U	At grade/intch	1/2-1 mile	Right Turn	800 feet	1/2-1 mile	Partial
		R	At grade/intch	1-3 mile	Right Turn	1200 feet	None[5]	Partial[6]
Cat. 4 Hwy.99	Statewide/ Regional	U	At grade/intch	1/4 mile	Left & Right Turns	500 feet	1/2 mile	Partial/ None[7]
		R	At grade/intch	1 mile	Left & Right Turns	1200 feet	None[5]	Partial/ None[7]
Cat. 5 Hwy. 221	Regional/ District	U	At grade	1/4 mile	Left & Right Turns	300 feet	1/4 mile	None
		R	At grade	1/2 mile	Left & Right Turns	500 feet	1/2 mile	None
Cat. 6 Hwy. 51/223	District	U	At grade	500 feet	Left & Right Turns	150 feet	1/4 mile	None
		R	At grade	1/4 mile	Left & Right Turns	300 feet	1/2 mile	None

Source: 1991 Oregon Highway Plan

1 Level of Importance is an indicator of the area a highway is primarily to serve. It will generally correspond to certain access categories. When the access category is higher than the level of importance, existing levels of access control will not be reduced.

2 Type indicates an allowable intersection design option. The table above lists the basic options.

3 Private Drives:
   a. Generally, no signals will be allowed at private access points on statewide and regional highways.
   b. Allowed moves may be more restrictive than shown.

4 Signals should be spaced to minimize delay and disruptions to through traffic.

5 In some instances, signals may need to be required, but only after examining other options. Additionally, long range plans should find ways to eliminate the need for the signal in the future.

6 Partial median control will allow some breaks in the physical barrier, but only if no deterioration of highway operation will result.

7 Median barriers can be interspersed with segments of continuous left turn lanes.

112.175. ACCESS ONTO ARTERIALS.

(A) The number of access points onto arterial roads from any development shall be minimized whenever possible through the use of driveways common to more than one development, and interior circulation design, including frontage or marginal access roads, which further this requirement. Generally, no driveway or County or public road access will be permitted onto the rural portions of State Highways 18, 22, 51, 99W, 221, and 223 unless the following standards are met:

State Highway Access Distance

Access Type	Distance From Nearest Access Point					
	Hwy 18	Hwy 22	Hwy 51	Hwy 99W	Hwy 221	Hwy 223
Driveway	1,200 feet[1]	1,200 feet	500 feet	1,200 feet	500 feet	300 feet
County or Public Use Road	1-3 miles	1–3 miles	.5 mile	1 mile	.5 mile	.25 mile

[1] Right turn only access permitted

(B) Access onto arterials will require the approval, through the permit process, from the Oregon Department of Transportation. The applicant(s) will need to follow ODOT's construction requirements for that portion of the access within state-owned right-of-way.

(C) Where property, such as a reverse frontage lot, is located abutting a county or public use road, and a state highway, the preferred access will be onto the county or public use road. **[Adopted by Ordinance #98-5, dated July 8, 1998.]**

734-051-0155

Access Management Plans, Access Management Plans for Interchanges, and Interchange Area Management Plans

(1) The Department encourages the development of Access Management Plans, Access Management Plans for Interchanges, and Interchange Area Management Plans to maintain highway performance and improve safety by improving system efficiency and management before adding capacity consistent with the 1999 Oregon Highway Plan.

(2) Access Management Plans and Access Management Plans for Interchanges are developed for a designated section of highway with priority placed on facilities with high volumes or providing important statewide or regional connectivity where:

(a) Existing developments do not meet spacing standards;

(b) Existing development patterns, land ownership patterns, and land use plans are likely to result in a need for deviations; or

(c) An access management plan would preserve or enhance the safe and efficient operation of a state highway.

(3) Access Management Plans and Access Management Plans for Interchanges may be developed:

(a) By the Department;

(b) By local jurisdictions; or

(c) By consultants.

(4) Access Management Plans and Access Management Plans for Interchanges comply with all of the following:

(a) Are prepared for a logical segment of the state highway and include sufficient area to address highway operation and safety issues and development of adjoining properties including local access and circulation.

(b) Describe the roadway network, right-of-way, access control, and land parcels in the analysis area.

(c) Are developed in coordination with local governments and property owners in the affected area.

(d) Are consistent with any applicable adopted Transportation System Plan, Local Comprehensive Plan, Corridor Plan, or Special Transportation Area or Urban Business Area designation, or amendments to the Transportation System Plan unless the jurisdiction is exempt from transportation system planning requirements under OAR 660-012-0055.

(e) Are consistent with the 1999 Oregon Highway Plan.

(f) Contain short, medium, and long-range actions to improve operations and safety and preserve the functional integrity of the highway system.

(g) Consider whether improvements to local street networks are feasible.

(h) Promote safe and efficient operation of the state highway consistent with the highway classification and the highway segment designation.

(i) Consider the use of the adjoining property consistent with the comprehensive plan designation and zoning of the area.

(j) Provide a comprehensive, area-wide solution for local access and circulation that minimizes use of the state highway for local access and circulation.

(k) Are approved by the Department through an intergovernmental agreement and adopted by the local government, and adopted into a Transportation System Plan unless the jurisdiction is exempt from transportation system planning requirements under OAR 660-012-0055.

(l) Are used for evaluation of development proposals.

(m) May be used in conjunction with mitigation measures.

(5) The Department encourages the development of Interchange Area Management Plans to plan for and manage grade-separated interchange areas to ensure safe and efficient operation between connecting roadways:

(a) Interchange Area Management Plans are developed by the Department and local governmental agencies to protect the function of interchanges by maximizing the capacity of the interchanges for safe

movement from the mainline facility, to provide safe and efficient operations between connecting roadways, and to minimize the need for major improvements of existing interchanges;
(b) The Department will work with local governments to prioritize the development of Interchange Area Management Plans to maximize the operational life and preserve and improve safety of existing interchanges not scheduled for significant improvements; and
(c) Priority should be placed on those facilities on the Interstate system with cross roads carrying high volumes or providing important statewide or regional connectivity.
(6) Interchange Area Management Plans are required for new interchanges and should be developed for significant modifications to existing interchanges consistent with the following:
(a) Should be developed no later than the time an interchange is designed or is being redesigned;
(b) Should identify opportunities to improve operations and safety in conjunction with roadway projects and property development or redevelopment and adopt strategies and development standards to capture those opportunities;
(c) Should include short, medium, and long-range actions to improve operations and safety in the interchange area;
(d) Should 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;
(e) Should provide adequate assurance of the safe operation of the facility through the design traffic forecast period, typically 20 years;
(f) Should consider existing and proposed uses of the all property in the interchange area consistent with its comprehensive plan designations and zoning;
(g) Are consistent with any adopted Transportation System Plan, Corridor Plan, Local Comprehensive Plan, or Special Transportation Area or Urban Business Area designation, or amendments to the Transportation System Plan unless the jurisdiction is exempt from transportation system planning requirements under OAR 660-012-0055;
(h) Are consistent with the 1999 Oregon Highway Plan; and
(i) Are approved by the Department through an intergovernmental agreement and adopted by the local government, and adopted into a Transportation System Plan unless the jurisdiction is exempt from transportation system planning requirements under OAR 660-012-0055.
Stat. Auth.: ORS 184.616, 184.619, 374.310, 374.312 & 374.345; Ch. 972 & Ch. 974, OL 1999
Stats. Implemented: ORS 374.305 to 374.345 & 374.990; Ch. 974, OL 1999, Ch. 371, OL 2003
Hist.: TO 4-2000, f. 2-14-00, cert. ef. 4-1-00; HWD 2-2004, f. 2-18-04, cert. ef. 3-1-04, Renumbered from 734-051-0360