

TSP Policies - Document G: Urban Land Use and Transportation

INTRODUCTION

This document provides an overview of current policies regarding urban roads in the Clackamas County Comprehensive Plan and staff recommendations for revising those policies and creating new policies. The staff recommendations are based on review of the existing County Comprehensive Plan – Chapter 5, State Transportation Planning Rule (TPR), Regional Transportation Plan (RTP), and TSP Vision, Goals and Objectives.

Key Questions

1. Should the County adopt a broad policy on integrating land use and transportation? (232, 233 and 234)
2. Should the County require new development to provide both short- and long-term secure bicycle parking? (255)
3. Should the County undertake a study of the Clackamas Regional Center / Fuller Road Station Area to determine if these areas should be designated as a multimodal mixed-use area (MMA)? (258 and 261)
4. Should the County convert its Transportation System Development Charge (SDC) methodology from vehicle trips to person trips so that larger variety of capital project can be included in the SDC system? (260)
5. Should the County convert the revised Table s2 and 5 into the access standards Table 5a and 5b which would be included in the Comprehensive Plan? (236 and Page 11)
6. Should the County convert the revised Table 3 into a set of typical cross section drawings that are included in the Comprehensive Plan?
7. Should the County update Operational Performance Standards to match the standards set by the Oregon Transportation Plan and the Regional Transportation Plan? (Table XX Page 28)

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General Policies - Urban Roads and Travel

ID #	Current Location in Comp Plan	Current Policy	Staff Recommendations <i>Changes in Red</i>	Working Group Issues
		<i>Integration of Urban Land Use and Transportation</i>	The policies below are recommended to be added to provide broad policy support for integrating urban land use and transportation.	
232		<i>New</i>	Support and promote an integrated approach to land use and transportation planning in urban areas.	0
233		<i>New</i>	Support transportation planning and implementation so that supports livable and sustainable urban communities.	0
234		<i>New</i>	Prioritize transportation investments that support complete and sustainable urban communities as a long-term strategy to end reliance on long commutes out of the County to employment destinations such as the Clackamas Industrial Area or the Clackamas Regional Center.	0
		<i>Intergovernmental Partnerships and Coordination</i>		
235		<i>New</i>	Support intergovernmental partnerships needed to promote coordination and solve multi-jurisdictional transportation needs in urban areas (e.g. Sunrise Corridor).	0
ID #	Current Location in Comp Plan	Current Policy	Staff Recommendations <i>Changes in Red</i>	Working Group Issues
		<i>Road Access Standards</i>		

236	Access Standards 14.0	Plan and control access onto roads within the County, as shown on Table V-5, for urban areas and according to the American Association of State Highway and Transportation Officials (AASHTO) guidelines for rural areas , for both new and existing uses, and coordinate with the Oregon Department of Transportation for access control on state highways. Access standards need to be applied in a flexible manner that maintains reasonable access to property when access cannot be denied. Where access management standards are adopted by the County in Special Transportation Plans, those standards shall apply	<p>Plan and control access onto roads within the County, as shown on Table V-5a and V-5b for both new and existing uses, and coordinate with the Oregon Department of Transportation for access control on state highways. Where access management standards are adopted by the County in Special Transportation Plans, those standards shall apply.</p> <p><i>See Table V-5a and V-5b Page 11</i></p> <p><i>Note: Special Transportation Plans currently is only the 172nd – 190th Corridor Management Plan but it could include other plan in the future</i></p>	R
237	Access Standards 15.0	Support the implementation of state access management standards (OAR Chapter 734, Division 51, as amended, and the Oregon Highway Plan) on state highway facilities within the Interchange Management Areas.	<i>No Change</i>	R M
238	Access Standards 16.0	Improve highway operations and safety by supporting construction of public roads that provide reasonable alternative access within Interchange Management Areas. When reasonable access is provided, support the elimination of direct access to state highway facilities.	<i>No Change</i>	R
ID #	Current Location in Comp Plan	Current Policy	Staff Recommendations <i>Changes in Red</i>	Working Group Issues
		Road Access Standards		
239		<p><i>New</i></p> <p><i>Or “Therefore, the County Road Standards will include a process to determine where (or whether?) engineering design exceptions are necessary to successfully design and implement the construction of</i></p>	<p>Access Standard in Tables V-5a and V-5b will be implemented through the Zoning and Development Ordinance and the County Road Standards.</p> <p>1. These implementing documents may provide a greater level of guidance for the purpose of designing transportation facilities and access to the</p>	R

		<i>the County's trans. system</i>	<p>county transportation system but they shall broadly conform to the standards set out in Tables V-5a and V-5B</p> <p>2. It is not the intent of this section to limit the flexibility needed in the engineering design process necessary to produce a safe and efficient transportation system. Therefore, the County Roadway Standards will include a process for granting engineering design exceptions that are necessary to successfully design and implement the construction of the County's transportation system.</p>	
240		<i>Part of Existing Policy 14</i>	Access standards need to be applied in a flexible manner that maintains reasonable access to property when access cannot be denied.	R
ID #	Current Location in Comp Plan	Current Policy	Staff Recommendations <i>Changes in Red</i>	Working Group Issues
		Road Access Standards		
241		New – may be more appropriate for the ZDO	Except along local and connector roadways, crossover access easements and shared access shall generally be required within urban areas between adjacent compatible commercial, multifamily and industrial parcels to reduce access points, reduce traffic volumes, improve safety, improve convenience to on-site users, and to reduce impacts to environmentally sensitive areas. These easements shall generally be required even if adjacent uses are allowed direct individual access to an adjacent roadway.	R
242		New – may be more appropriate for the ZDO	Accesses are subject to access movement restrictions, such as right-in, right-out or similar access achieved through roadway improvements, in order to preserve the	R

			safety or mobility of the subject roadway. If access is allowed to arterials, access restrictions along arterials shall be considered in favor of full access intersections	
243		New – may be more appropriate for the ZDO	With development, requested access may be denied and/or reduced from existing conditions if adequate safety, spacing, classification and mobility requirements cannot be met or if there is a reasonable alternate such as a shared access or access to an equal or lower classification street is available	R
ID #	Current Location in Comp Plan	Current Policy	Staff Recommendations <i>Changes in Red</i>	Working Group Issues
		Road Access Standards		
244		New – may be more appropriate for the ZDO	Spacing shall be measured from the proposed driveway/roadway centerline to the centerline of an existing or planned driveway/roadway centerline.	R
245		New – may be more appropriate for the ZDO	Along properties with multiple roadway frontages, access shall generally be provided only from the street with a lower functional classification and/or the road with the road with the lower traffic volume except where safety dictates an alternative access scenario	R
246		New – may be more appropriate for the ZDO	Site designs in which the design vehicle is required to back onto or from an arterial or collector are prohibited.	R
		Parking		
247	Parking 1.0	Set minimum and maximum limits on allowed off-street parking relative to building size, location and use, and adjacent land uses.	Set minimum and maximum limits on allowed off-street parking relative to building size, location and use, and adjacent land uses, and in coordination with regional requirements	R
248	Parking 2.0	Encourage off-street parking in commercial, industrial, and high density residential areas to be at the sides or rear of buildings where practical, with buildings oriented to the street in a manner that is convenient	Require Encourage off-street parking in commercial, industrial, and high-density residential areas to be at the sides or rear of buildings where practical, with buildings oriented to the street in a manner that is convenient to	R

		to pedestrians and aesthetically pleasing to passers-by, but does not interfere with sight distance on the roadway, or preclude road widening.	pedestrians and aesthetically pleasing to passers-by, but does not interfere with sight distance on the roadway, or preclude road widening.	
ID #	Current Location in Comp Plan	Current Policy	Staff Recommendations <i>Changes in Red</i>	Working Group Issues
		Parking		
249	Parking 3.0	Existing curbside parking along arterials and collectors may be removed to allow the striping of bike lanes, construction of travel or turning lane improvements or for increasing sight distance. Where parking standards are adopted by the County in Special Transportation Plans, those standards shall apply.	<i>No Change</i>	O
250	Parking 4.0	Allow developments along transit routes to decrease their parking area requirements if they provide pedestrian and transit amenities	<i>No Change</i>	R
251	Parking 5.0	Allow commercial and industrial developments to decrease their parking area requirements if they provide and maintain ridesharing programs.	Allow commercial and industrial developments to decrease their parking area requirements if they provide and maintain ridesharing programs or other Transportation Demand Management strategies.	R P
252	Parking 6.0	Allow shared parking where feasible, such as within mixed use development and where adjacent land uses are compatible. Such sharing of parking can be used to help satisfy compliance with parking standards.	Require Allow shared parking where feasible, such as within mixed use development and where adjacent land uses are compatible. Such sharing of parking can be used to help satisfy compliance with parking standards.	R
253	Parking 7.0	Increase on-street parking in residential areas by minimizing the width of driveway curb cuts.	<i>No Change</i>	R
254	Parking 8.0	On-street parking may be prohibited in front of schools as needed to assure student safety and school security, and shall be reviewed on a school by school basis.	<i>No Change</i>	R
ID #	Current Location in Comp Plan	Current Policy	Staff Recommendations <i>Changes in Red</i>	Working Group Issues

		Parking		
255		New	<u>Require new development to provide both short- and long-term secure bicycle parking, as appropriate, and initiate a program for adding bicycle parking in areas frequented by bicyclists.</u>	R
		Safety – road condition		
		Other Land Use Topics?		
256	Improvements to Serve Development 24.0	Encourage a relationship between land use and roadways which decreases average trip length.	No Change	O
257	Improvements to Serve Development 29.0	Require that changes to the Comprehensive Plan land use designations within the Interchange Management Areas identified on Map V-12 must be consistent with Oregon Administrative Rules 660-012-0060. If the land uses allowed by the new Comprehensive Plan land use designation would cause the interchange mobility standards to be exceeded, the change either shall be denied, or improvements shall be made such that the mobility standards are met.	Require that changes to the Comprehensive Plan land use designations within the Interchange Management Areas identified on Map V-12 must be consistent with Oregon Administrative Rules 660-012-0060. If the land uses allowed by the new Comprehensive Plan land use designation would cause the interchange mobility standards to be exceeded, the change either shall be denied, or improvements shall be made such that the mobility standards are met.	R M
258	New	New	<u>Study and analyze the greater Clackamas Regional Center / Fuller Road Station Area to determine if this area should be designated as a multimodal mixed-use area (MMA) as provided in the Transportation Planning Rule – (OAR 660-012-0060 - Plan and Land Use Regulation Amendments)</u>	R
ID #	Current Location in Comp Plan	Current Policy	Staff Recommendations <i>Changes in Red</i>	Working Group Issues
		Other Land Use Topics?		
259		New	<u>Transportation System Development Charges update The Transportation SDC project list to reflect the projects identified in the TSP updates.</u>	R
260		New	<u>Convert the Transportation System Development Charges methodology from vehicle trips to person trips to allow</u>	R

			pedestrian, transit, and bicycle projects to be funded using the TSDC.	
261		New	Study alternative mobility standard and development review framework within the Clackamas Regional Center and/or Clackamas Industrial Area	O
ID #	Current Location in Comp Plan	Current Policy	Staff Recommendations <i>Changes in Red</i>	Working Group Issues
		Other Land Use Topics?		
262		<i>New</i>	<p>The County supports Transit-Oriented Development and the creation of transit-supportive communities by optimizing the use of land around high quality transit to help achieve the following social, environmental and economic objectives:</p> <ul style="list-style-type: none"> a) Support publicly-funded transit investments and enhance transit ridership; b) Create greater mobility choice through improved travel options (such as walking, bicycling, and taking transit.); c) Decrease auto use and lessen the negative impacts of the automobile such as: contributing to traffic congestion and air pollution, high household spending on transportation, consumption of fossil fuels, and parking needs; d) Create interesting and active places to live, work and play; e) Improve the design quality of the built environment; f) Increase housing options suited to a mix of generations and incomes; g) Support healthier lifestyles by encouraging increased walking and bicycling; h) Foster economic development, an enhanced tax base and the potential for revenue from public-sector real estate assets, and i) Increase the predictability and consistency of the development process. 	R

Table V-5a and 5b - Access Standards – replaces V-2 and V-5

Table V-5a (Revised)

Access Standards by Functional Classification, Urban Areas Only	Functional Classification				
	Major Arterial	Minor Arterial	Collector	Connector	Local
<i>Street to Street Intersections</i>					
Street Access Allowed to Arterials	Yes	Yes	Yes	Yes	No
Street Access Allowed to Collectors			Yes	Yes	Yes
Street Access Allowed to Connectors				Yes	Yes
Street Access Allowed to Local					Yes
Minimum Intersection Distance from an Existing or Planned Roadway Intersection, Signal or Roundabout*	400'	300'	150'	100'	100'
Minimum Distance Between Signals or Roundabouts	1000'	1000'	1000'		
Preferred Spacing Between Roadways/Driveways			530'	530'	530'
Minimum Pedestrian/Bicycle Connection Spacing if Preferred Spacing Not Met	330'	330'	330'	330'	330'

Access Standards by Functional Classification, Urban Areas Only					
<i>Street to Driveway Intersections</i>					
Minimum Full Access Driveway Spacing*	400'	300'	150'	25'***	25'***
Minimum Restricted Access Driveway Spacing	400'	200'	100'		
Single Family Residential Driveway Access Allowed	No	No	No	Yes	Yes
Maximum Spacing Between Roadways/Driveways			530'	530'	530'
Preferred Pedestrian/Bicycle Connection Spacing if Maximum Spacing Not Met	330'	330'	330'	330'	330'
Minimum Development Generated Average Daily Traffic Threshold for Secondary Access	2500	2000	1000		

Notes:

Modifications to these requirements and guidelines may be processed via Section 170 of the Clackamas County Roadway Standards-- **this may not be needed per new policy**

N/A = Not applicable

No portion of a driveway allowed within 2' of a property line. - **ZDO Provisions?**

*Access should not be allowed within 95th percentile queue of signalized or roundabout intersection - **ZDO Provisions?**

Measured from right-of-way lines at an intersection - **ZDO Provisions?

Table V-5b

Access Standards by Functional Classification, Rural Areas Only	Functional Classification				
	Major Arterial	Minor Arterial	Collector	Connector	Local
<i>Street to Street Intersections</i>					
Street Access Allowed to Arterials	Yes	Yes	Yes	Yes	No
Street Access Allowed to Collectors			Yes	Yes	Yes
Street Access Allowed to Connectors				Yes	Yes
Street Access Allowed to Local					Yes
Non Signalized Intersection Minimum Intersection Distance from an Existing or Planned Roadway Intersection, Signal or Roundabout *	1000'	500'	250'	100'	100'
Minimum Distance Between Signals or Roundabouts	2000'	2000'	2000'		

Access Standards by Functional Classification, Rural Areas Only					
<i>Street to Driveway Intersections</i>					
Minimum Full Access Driveway Spacing ADT Over 5000*	600'	600'	600'		
Minimum Full Access Driveway Spacing ADT Over 2500*	500'	500'	500'		
Minimum Full Access Driveway Spacing ADT Over 1000*	400'	400'	400'		
Minimum Full Access Driveway Spacing ADT 400 ≥ 1000	200'	200'	200'	200'	200'
Minimum Full Access Driveway Spacing ADT ≤ 400	100'	100'			
Single Family Residential Driveway Access Allowed if Alternatives Feasible	No	No	No	Yes	Yes

Notes:

Modifications to these requirements and guidelines may be processed via Section 170 of the Clackamas County Roadway Standards -- **this may not be needed per new policy**

N/A = Not applicable

No portion of a driveway allowed within 2' of a property line. **ZDO Provisions?**

*Access should not be allowed within 95th percentile queue of signalized or roundabout intersection - **ZDO Provisions ?**

Measured from right-of-way lines at an intersection - **ZDO Provisions ?

Table V-3 Roadway Classifications and Typical Cross Sections–

Table V-3 will be replaced with Typical Cross Section Drawings that use the dimension included in Table V-3 but look similar to the Washington County Cross Sections Page 17 which are attached as an example. Typical Street Cross Sections are expected to be eliminated from the County Road Standards.

The following provisions apply to Roadway Classifications and Typical Cross Sections:

- Storm water treatments for County roads will include conventional storm water systems, ditches, drainage swales and other non structural storm water facilities. Median lanes and landscape strips may be used in part or in whole as bio-swales. Details on storm water facilities will be included in the County Road Standards.
- Rights-of-way for all arterials and collectors shall be adequate to accommodate all required road improvements including bikeways, shoulders, landscaping, street-lighting, on street parking, drainage facilities and sidewalks as appropriate for rural and urban areas.
 - ▣ Additional right-of-way may be required for slope, sign, and utility easements.
 - ▣ Rights-of-way may be increased at intersections to accommodate needed turn lanes, pedestrian facilities and bikeways, roundabouts or on street parking.
- Pedestrian facilities, bikeways, and landscape strips are required on all new streets within the Urban Growth Boundary and when development or redevelopment occurs on existing streets.
- The Roadway Classifications and Typical Cross Sections are modified as set out in Special Transportation Plans which are adopted as part of this Chapter of the Comprehensive Plan

Table V-3 Roadway Classifications and Guidelines –

THIS TABLE WILL BE USED TO PRODUCE TYPICAL ROAD CROSS SECTION DRAWINGS THAT WILL REPLACE THIS TABLE IN CHAPTER 5

Urban Functional Classification	Metro Green Streets Classification	Number Of Traffic Lanes	Median Lanes	Typical Right-Of-Way Width*	Typical Paved Width	Sidewalk/ Pathway / Pedestrian Zone	Bikeways (Bike Lanes, Cycle Track Etc)	Landscape Strip And Street Trees	Storm Water Facilities
Urban Area									
Freeway / Expressway, State Highways	Regional Principal Arterials	Defer to State Standards (ODOT) or Adopted Alternative Road Cross Sections for specific portions of urban system							
Major Arterial	Regional Boulevard or Regional Street	4 11' – 12' travel lanes	12' – 14' median / turn lane	98' – 118'	64'- 80'	Yes 6' -15' as part of a Pedestrian Zone on each side of the street	Yes 6' – 8'	Yes 5' – 7' may include on street parking	<i>Conventional and/or non- structural storm water facilities</i>
Minor Arterial	Community Boulevard Or Community Street	2 to 4 11' – 12' Travel lanes	Optional 12' – 14' median / turn lane	68' – 112'	60' – 78'	Yes 6' -10	Yes 6' - 8'	Yes 5' - 7' may include on street parking	<i>Conventional and/or non- structural storm water facilities</i>
Urban Functional Classification	Metro Green Streets Classification	Number Of Traffic Lanes	Median Lanes	Typical Right-Of-Way Width*	Typical Paved Width	Sidewalk/ Pathway / Pedestrian Zone	Bikeways (Bike Lanes, Cycle Track Etc)	Landscape Strip And Street Trees	Storm Water Facilities

Collector	Road	2 10' – 12' Travel lanes	Optional 11' – 13' median / turn lane	64' – 90' may include on street parking	44' – 70'	Yes 5' -7'	Yes 6'- 8'	Yes 5' – 7' may include on street parking	<i>Conventional and/or non- structural storm water facilities</i>
Connector Urban Commercial Multifamily	Road	2 14' – 17' travel lanes	No	64' – 78'	36' –50' Parking on one side or both sides	Yes 5' -7'	No	Yes 5' – 7'	<i>Conventional and/or non- structural storm water facilities</i>
Connector Industrial	Road	2 21' travel lanes	No	78'	58' Parking on both sides	Yes 5'	No	Yes 5'	<i>Conventional and/or non- structural storm water facilities</i>
Local	Road	2 10' – 21' travel lanes	No	50' – 60'	28' – 58' depending on parking	Yes 5' -7'	No	Yes 5'	<i>Conventional and/or non- structural storm water facilities</i>
Alley		2 8' travel lanes	No	16'	16'	No	No	No	N/A
Urban Functional Classification	Metro Green Streets Classification	Number Of Traffic Lanes	Median Lanes	Typical Right-Of- Way Width*	Typical Paved Width	Sidewalk/ Pathway / Pedestrian Zone	Bikeways (Bike Lanes, Cycle Track Etc)	Landscape Strip And Street Trees	Storm Water Facilities
Urban Area									
	Urban Multi Use Path	0	No	24	12	0	2 6' bike lanes	12	N/A

Rural Functional Classification	Metro Green Streets Classification	Number Of Traffic Lanes	Median Lanes	Minimum Right-Of-Way Width*	Paved Width	Sidewalk/ Pathway	Bikeways	Landscape Strip	Storm Water Facilities
Rural Area									
Freeway / Expressway, State Highways	Defer to State Standards (ODOT) or Adopted Alternative Road Cross Sections for specific portions of rural system								
	Rural Road on <i>high speed roads and freight routes with bio-swales</i>	2 to 4 11' travel lanes	No	63' -83'	34' – 54' with 3' shoulders	6'	Yes 6'	7'	non-structural storm water facilities
Rural Arterials In Rural Centers or Unincorporated Communities	N/A	2 11' – 12' Travels lanes	Optional 12' – 14' median / turn lane	60'- 96' may include on street parking	36' - 50'	Yes, 6' in Rural Centers, or uni	Yes 6'	Yes 5'	Conventional and/or non-structural storm water facilities
Rural Functional Classification	Metro Green Streets Classification	Number Of Traffic Lanes	Median Lanes	Minimum Right-Of-Way Width*	Paved Width	Sidewalk/ Pathway	Bikeways	Landscape Strip	Storm Water Facilities
Rural Area									
Rural Arterials median / turn lane, Not permitted in Resources Zone	N/A	2 11' – 12' Travels lanes	Optional 12' – 14' median / turn lane	66'- 72'	36' – 50'	No 6" Gravel Shoulders	Yes 6'	No	Ditches and/or non-structural storm water facilities

Rural Collectors median / turn lane, Not permitted in Resources Zone	N/A	2 10' – 12' Travels lanes	Optional 11' – 13' median / turn lane	60'	36' – 50'	No, 6' Gravel Shoulders	Yes 6'	No	Ditches and/or non-structural storm water facilities
Rural Connector	N/A	2 11' Travels lanes	No	55'	22'	No 6' Gravel Shoulders	No	No	Ditches and/or non-structural storm water facilities
Rural Local	N/A	2 11' Travels lanes	No	50'	22'	No 6' Gravel Shoulders	No	No	Ditches and/or non-structural storm water facilities

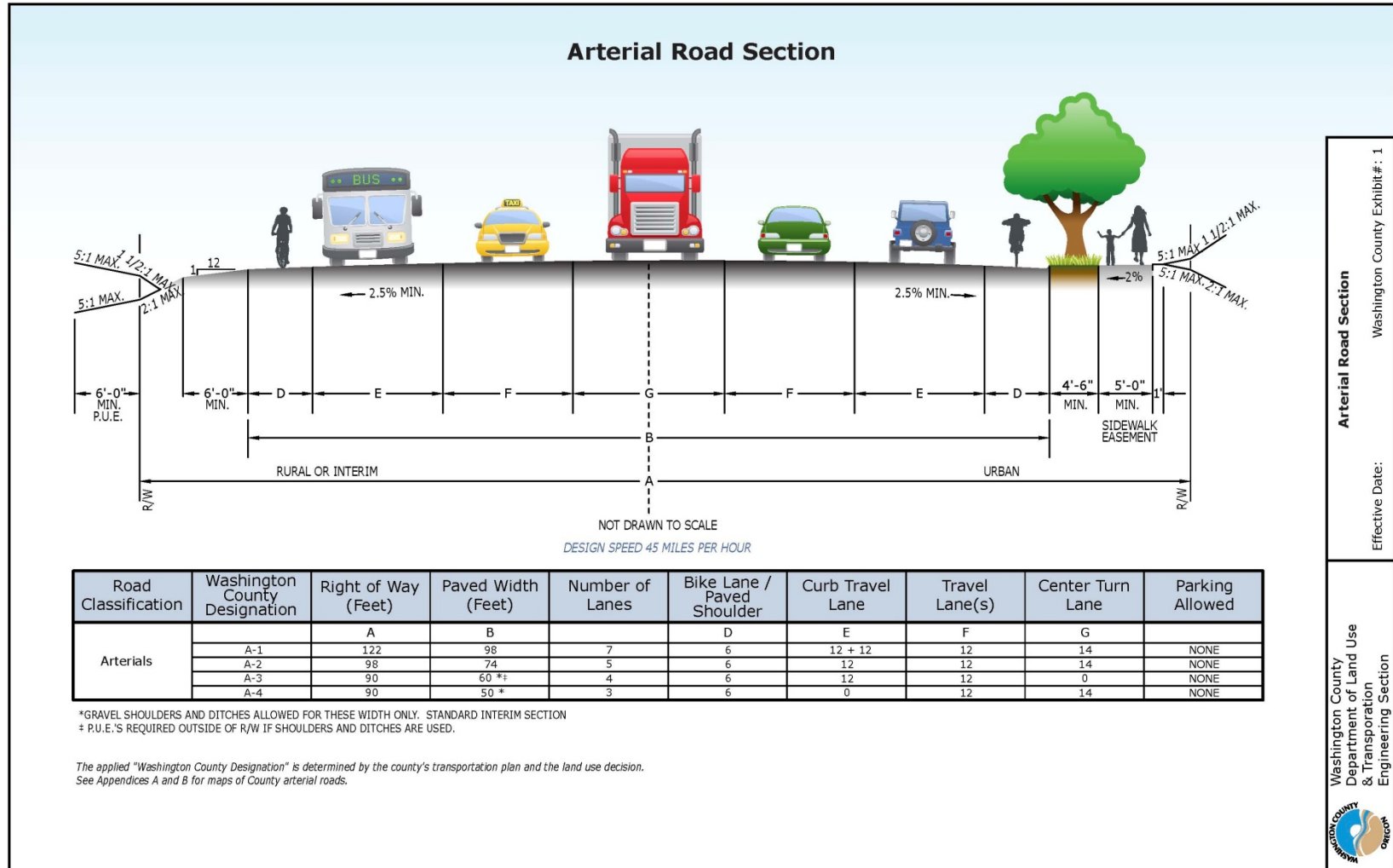
Table V-4 Arterial and Throughway Design Concepts – Inside Metro Boundary		
2040 Design Concept	Design Guidelines	<u>Examples (from Figure 2-10)</u> <u>Regional Design Classifications</u>
Throughway - Freeway	<p>Principal arterial</p> <ul style="list-style-type: none"> • 4 - 6 through lanes (plus auxiliary lanes) with grade separated interchanges • Medians • Bikeways, usually separated from and parallel to facility. • Transit Amenities – Through service supported with amenities only at station areas, transit priority where appropriate at interchanges • Primary freight routes 	I-5 I-205
Throughway - Highway	<p>Principal arterial</p> <ul style="list-style-type: none"> • 6 through lanes (plus auxiliary lanes) with grade separated intersections/ interchanges • Bikeways and sidewalks separated from and parallel to facility • Medians with limited use as a turn lane. • Transit Amenities – Through service supported with amenities only at station areas, transit priority where appropriate at intersections • Primary freight routes 	US 26 OR 224 Sunrise Project to 152 nd Avenue OR 213 S OR 99 E - North of OR 224 and South of Oregon City
Throughway -Parkway	<p>Principal arterial</p> <ul style="list-style-type: none"> • 6 through lanes (plus auxiliary lanes) with grade separated intersections/ interchanges • Bikeways and sidewalks separated from and parallel to facility • Medians with limited use as a turn lane. 	
<p>Regional Boulevard</p> <ul style="list-style-type: none"> • <i>2040 centers</i> • <i>Station communities</i> • <i>Main streets</i> 	<p>Major Arterial</p> <ul style="list-style-type: none"> • 4 through lanes with turn lanes • Bikeways, sidewalks and pedestrian buffers • Medians used as pedestrian refuge and turn lane. 	OR 213 N (82 nd) OR 99 E - Downtown Milwaukie & Oregon City OR 43 - Downtown Lake Oswego

	<ul style="list-style-type: none"> • Transit Amenities – High quality service supported with substantial amenities at stops and station areas • Primary freight routes, provide access to markets with loading amenities within the right-of-way • Storm Water – Median Linear Detention Basin and Street Tree Wells and infiltration trenches 	<p>Sunnyside Road and Sunnybrook - in Regional Center</p>
<p>Regional Street</p> <ul style="list-style-type: none"> • <i>Industrial areas</i> • <i>Employment areas</i> • <i>Corridors</i> • <i>Intermodal facilities</i> 	<p>Major Arterial</p> <ul style="list-style-type: none"> • 4 through lanes with turn lanes • Bikeways, sidewalks and pedestrian buffers • Medians used as pedestrian refuge and turn lane. • Transit Amenities – High quality service supported with substantial amenities at stops and station areas • Primary freight routes, provide access to markets with loading amenities within the right-of-way • Storm Water – Median Linear Detention Basin and Street Tree Wells and infiltration trenches 	<p>OR 212 / 224 - Clackamas Industrial Area McLoughlin Blvd - Oak Grove Sunnyside Road 172nd Avenue OR 43 Molalla Road Beavercreek Road 82nd Drive</p>
<p>Community Boulevard</p> <ul style="list-style-type: none"> • <i>2040 centers</i> • <i>Station communities</i> • <i>Main streets</i> 	<p>Minor Arterial</p> <ul style="list-style-type: none"> • 2 through lanes with turn lanes • Bikeways, sidewalks and pedestrian buffers • Medians used as pedestrian refuge and turn lane. • Transit Amenities – High quality service supported with substantial amenities at major stops and station areas • Secondary freight routes, provide access to markets with loading amenities within the right-of-way • Storm Water – Median Linear Detention Basin and Street Tree Wells and infiltration trenches 	<p>SW Boones Ferry & Kruse Way Hwy 43 & SW A St. Willamette Falls Dr & 10th Hwy 99E & Lake Rd. Hwy 99E in Oregon City King Rd at Linwood SE 82nd (King Rd to Sunnyside) Sunnybrook (SE 82nd to I-205) Monterey (Fuller Road to I-205)</p>
<p>Community Street</p> <ul style="list-style-type: none"> • <i>Industrial areas</i> • <i>Employment areas</i> • <i>Corridors</i> • <i>Intermodal Facilities</i> 	<p>Minor Arterial</p> <ul style="list-style-type: none"> • 2 through lanes with turn lanes • Bikeways, sidewalks and pedestrian buffers • Medians used as pedestrian refuge and turn lane. • Transit Amenities – High quality service supported with substantial amenities at major stops and station areas • Secondary freight routes, provide access to markets with 	<p>Borland Rd Bryant Rd River Rd Oatfield Road Webster Road Linwood Street Wilsonville Road</p>

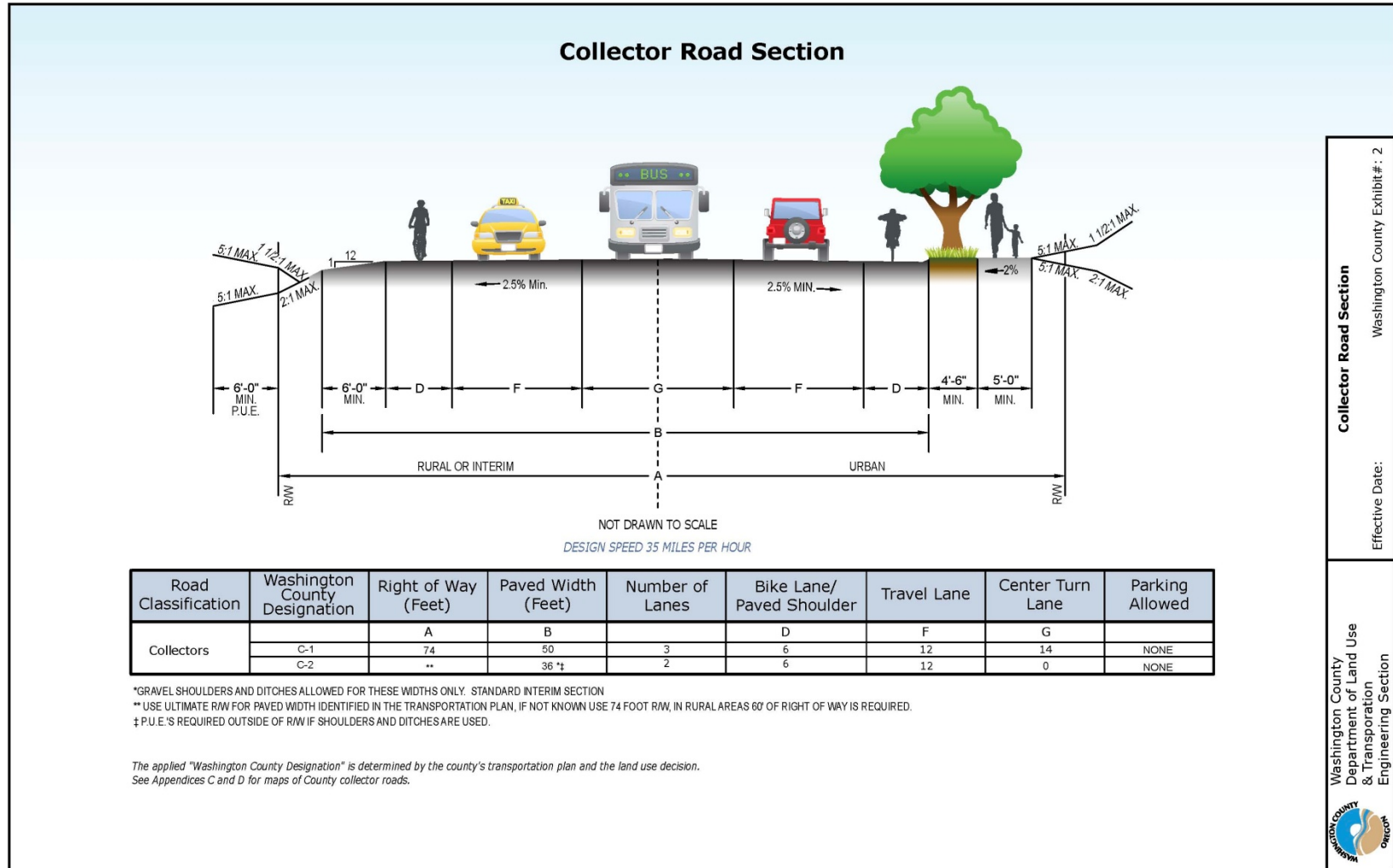
	<p>loading amenities within the right-of-way</p> <ul style="list-style-type: none"> • Storm Water – Median Linear Detention Basin and Street Tree Wells and infiltration trenches 	<p>Johnson Creek Boulevard King Road Railroad Avenue 122nd & 129th Streets</p>
Road (Urban and Rural)	<ul style="list-style-type: none"> • Urban Roads, usually 2-3 lanes • Rural Roads, usually 2–3 lanes • Transit Amenities – Through service supported with limited amenities at major stops and station areas • Primary freight routes • Storm Water – Median Linear Detention Basin or Street Tree Wells and infiltration trenches 	
For All	<p>The number and widths of lanes, bike lanes, and access points, and location of signals are determined by functional classification. – See Table 3</p> <p>Width of sidewalks is determined by functional class and adjacent land use. – See Table 3</p>	

Source: 2035 Regional Transportation Plan, Metro (June 2010). Figure 2.10, Regional Design Classifications (p 2-25); and, Table 2.6, Arterial and Throughway Design Concepts (p 2-26 – 2-27).

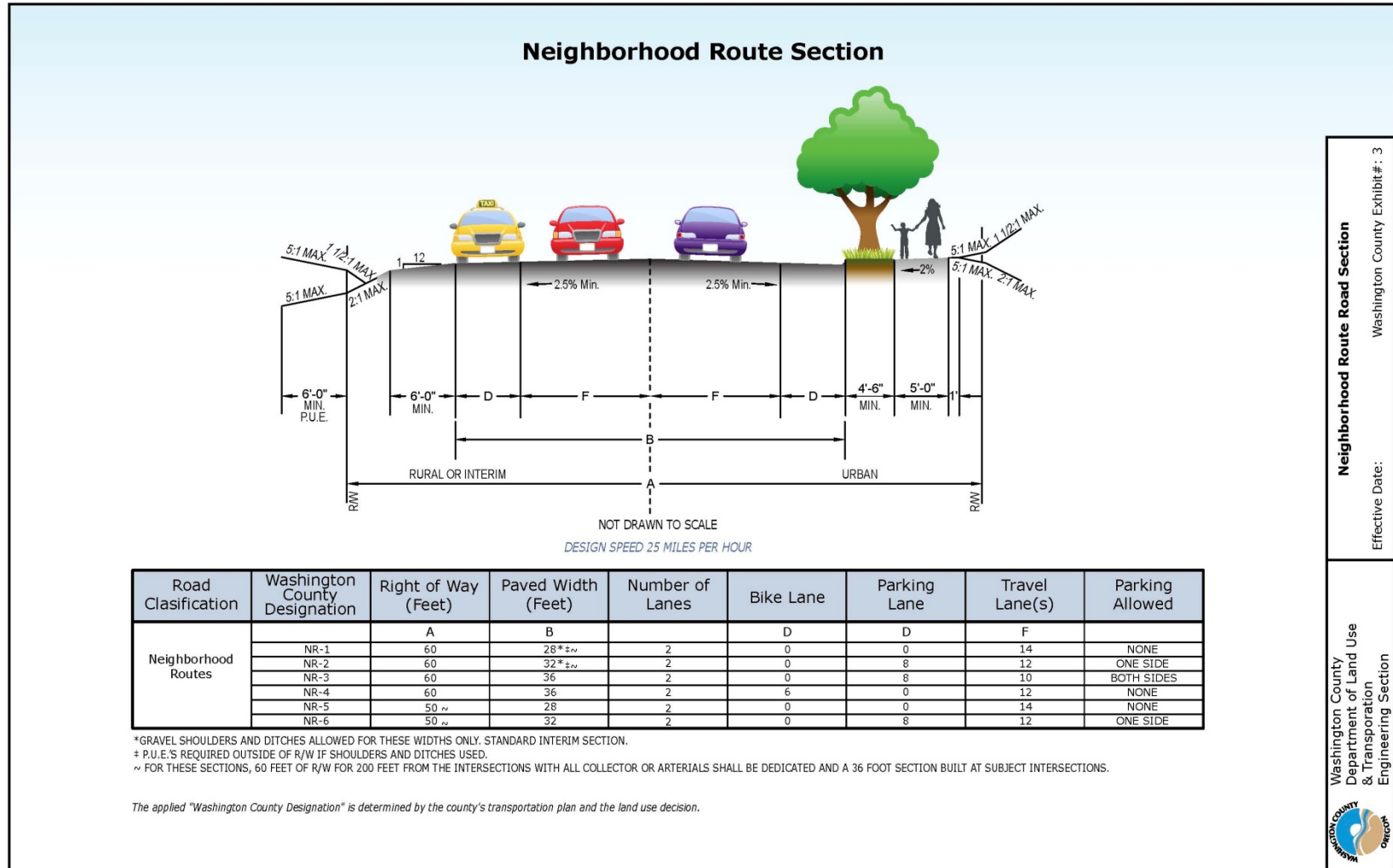
Example Cross Section from Washington County



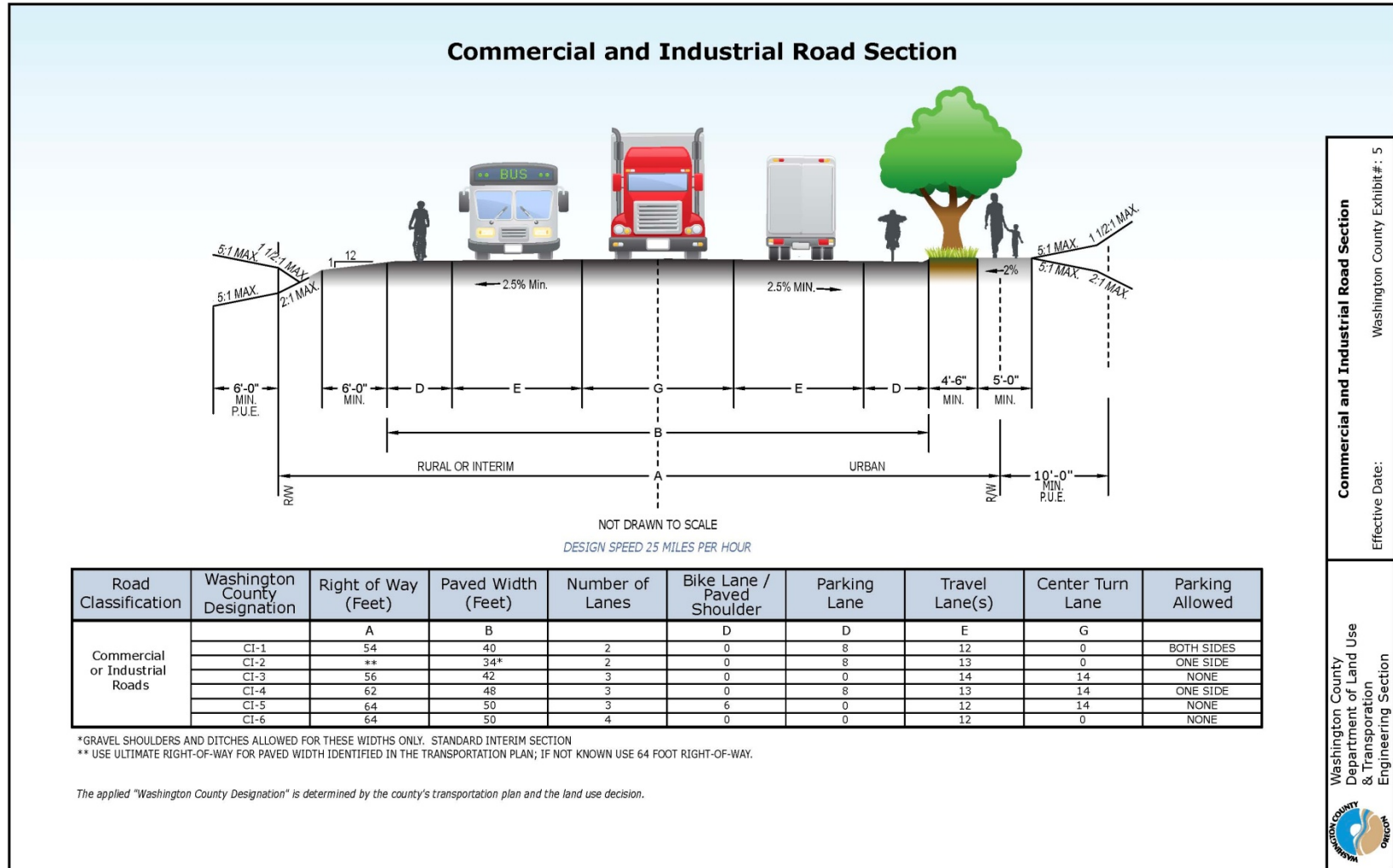
Example Cross Section from Washington County



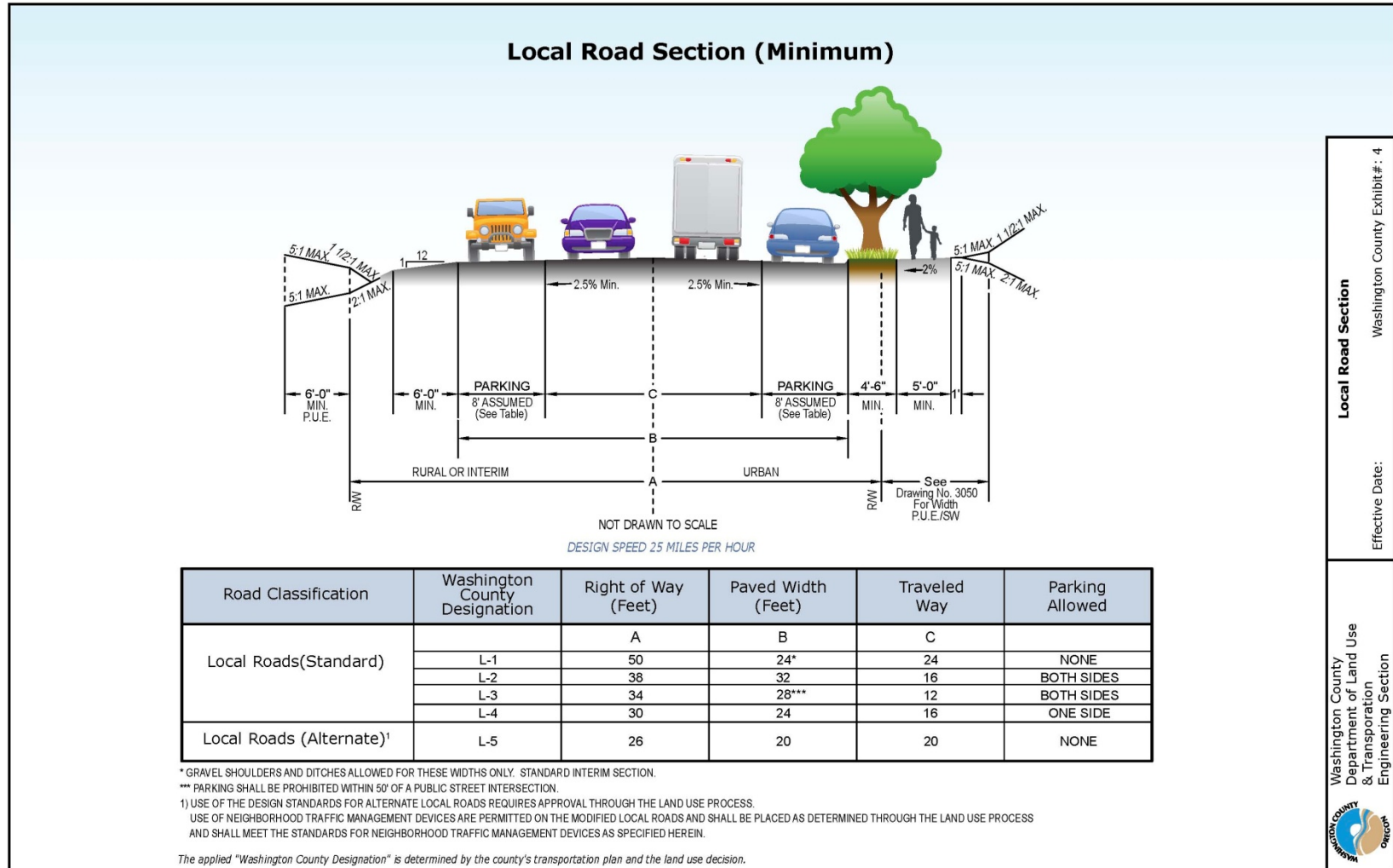
Example Cross Section from Washington County



Example Cross Section from Washington County



Example Cross Section from Washington County



Local Road Section

Washington County Exhibit #: 4

Effective Date:

Washington County
Department of Land Use
& Transportation
Engineering Section

Table V- XX Road Operations Performance Standards

PM 2 Hour Peak - Performance Standards for Arterial and Collector Roads	Planning Standards: TSP, Comprehensive Plan Amendment, Zone Change		Engineering and Roadway Design		All other Development Review	
	1 st Hour	2 nd Hour	1 st Hour	2 nd Hour	1 st Hour	2 nd Hour
Urban Area – Inside Metro by Land Use Type – as identified on Comp Plan Map IV – 8						
<i>Central City Regional Centers Town Centers Main Streets Station Communities</i>	1.1	.99	1.1	.99	1.1	.99
<i>Corridors Industrial Areas Intermodal Facilities Employment Areas Inner Neighborhoods Outer Neighborhoods</i>	.99	.99	.99	.99	.99	.99
Other Principal Arterials	1st Hour	2nd Hour	1st Hour	2nd Hour	1st Hour	2nd Hour
<i>OR 99E (from Lincoln Street to OR 224 interchange)</i>	1.1	.99	1.1	.99	1.1	.99
<i>Other Principal Arterial Routes; I-205^B I-5 (Marquam Bridge to Wilsonville)^B OR 212 OR 224 OR 213</i>	.99	.99	.99	.99	.99	.99
Urban Areas Outside of Metro	1st Hour	2nd Hour	1st Hour	2nd Hour	1st Hour	2nd Hour
County Roads – Inside Cities If analysis is required	LOS D		LOS D		LOS D	
Rural Area - Outside Metro PM Peak Hour Performance Standards	1st Hour	2nd Hour	1st Hour	2nd Hour	1st Hour	2nd Hour
Intersection of ODOT Facilities and County Roads depending upon posted speed and highway classification						
<i>Inside Urban Growth Boundary</i>	0.80 to 0.95	0.80 to 0.95	0.80 to 0.95	0.80 to 0.95	0.80 to 0.95	0.80 to 0.95
<i>Unincorporated Communities</i>	0.70 to 0.80	0.70 to 0.80	0.70 to 0.80	0.70 to 0.80	0.70 to 0.80	0.70 to 0.80
<i>Rural Lands</i>	0.70 to 0.75	0.70 to 0.75	0.70 to 0.75	0.70 to 0.75	0.70 to 0.75	0.70 to 0.75
Rural County Roads	1st Hour	2nd Hour	1st Hour	2nd Hour	1st Hour	2nd Hour
Intersections	LOS D		LOS D		LOS D	