

APPENDIX B

ODOT PAVEMENT STRATEGY URBAN PRESERVATION DESIGN STANDARDS

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The goal of the 3R preservation program is to preserve and extend the service life of existing highways and enhance safety, using cost effective solutions. While the primary focus of this program is pavement preservation, identification and inclusion of warranted and economically feasible safety improvements is a key component. The overlaying of the Safety Investment Program (SIP) and the 3R project development process has led to a more systematic and cost effective method for determining appropriate levels of effort for identifying safety issues and better guidance in mandatory improvements and cost effective mitigations to consider. The 3R Project Design process is described in **Sections 2.2 and 8.8 of the ODOT Highway Design Manual**.

The process is very applicable and relevant for rural preservation projects. However, due to the number of features that come into play in urban projects, further guidance is required to scope and develop projects appropriately and consistently statewide in an effort to ensure that the entire pavement system can be adequately maintained with available preservation funds.

The Urban Preservation Strategy focuses on preserving the life and safety of the pavement system “curb to curb”. The strategy utilizes all of the guidelines outlined in the **Sections 2.2 and 8.8 of the ODOT Highway Design Manual** (including the SIP tools and processes) and then provides additional guidance as shown in the Urban Preservation Design Features table shown on the following page. The “Have To” list is the recommended minimum treatment for the listed project elements. The “Like To” list includes treatments for elements which should be considered when economically feasible, i.e. minimal extra cost, or funds available from sources other than the preservation program.

Three elements have thresholds:

- pavement condition requiring reconstruction,
- curb exposure less than 6 inches and
- cross-slope greater than 8%,

which when crossed would move the project element from a “Have To” requirement to a “Like To” requirement to remedy.

Once the curb exposure is less than 6 inches and/or the cross-slope exceeds 8% in order to meet the “Like To” requirements for these elements -- pavement reconstruction will be required. Once extensive pavement reconstruction becomes necessary, the “Like To” requirements of the other project elements shown in the Urban Preservation Design Features table should be thoroughly evaluated, as they now may be doable with minimal extra cost.

Technical Resources have been identified for a number of the project elements. These resources should be utilized by the Project Team to aid in determining if a “Like To” measure is warranted, cost-effective and fundable or if a design exception or concurrence should be sought to do less than the “Have To” requirements.

Chapter 13 of the ODOT Highway Design Manual outlines the Design Exception and Concurrence process. Exceptions must be approved by ODOT for the following geometric design elements which do not meet the minimum 3R requirements as outlined in the Oregon Highway Design Manual:

- 1) Lane Width
- 2) Shoulder Width
- 3) Bridge Width
- 4) Horizontal Alignment
- 5) Vertical Alignment
- 6) Pavement Cross-slope
- 7) Superelevation
- 8) Vertical Clearance
- 9) ADA Standards
- 10) Pavement Design

The process will remain the same for seeking exceptions for any of the “Have To” features listed in the following table (pavement life, ADA/sidewalk ramps, vertical clearances and cross-slope), as well as for seeking concurrences for the other nonconforming roadside features listed below. Exceptions and concurrences are also required for the “Like To” features once the thresholds have been crossed for the three elements discussed earlier; pavement condition requiring reconstruction, curb exposure less than 6 inches and cross-slope greater than 8%.

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Urban Preservation Design Features

Project Element	Corrective Measure		Technical Resource
	“Have To”	“Like To”	
Pavement Life	<ul style="list-style-type: none"> 15 year minimum (unless life cycle benefit/cost justifies an alternative) - for overlays, inlays or appropriate treatment. 	<ul style="list-style-type: none"> 15 year minimum life - for reconstruction (may be triggered by cross slope, curb exposure or pavement condition). 	Pavement Unit
Signal Loops	<ul style="list-style-type: none"> Adjust or replace as necessary. 		Traffic Section
Striping	<ul style="list-style-type: none"> Redo 	<ul style="list-style-type: none"> Redo with Durable products as supported by the Statewide & Regional Striping Plans. 	Region Traffic
Signing	<ul style="list-style-type: none"> Replace signs in poor condition (damaged or no longer visible or discernable). 	<ul style="list-style-type: none"> Replace signs not up to current standards 	Traffic Section
Utilities (manholes, valves, vaults)	<ul style="list-style-type: none"> Adjust 		
Drainage	<ul style="list-style-type: none"> Adjust as necessary to maintain basic system Address high priority fish culverts identified in Salmon program. 	<ul style="list-style-type: none"> Reroute bridge drains which drain directly into waterway Address lower priority fish culverts as required 	Fish Prog. Mgr. & Hydraulics Unit
Obstacles behind curbs (which are no longer barrier curbs due to reduced exposure)	<ul style="list-style-type: none"> Reconstruct curb to re-establish barrier function if grades & existing R/W permit. Relocate to meet standards where practical. 	<ul style="list-style-type: none"> Meet required standard for barrier curb. Meet required standards for obstacles behind barrier curb. Relocate if necessary. 	Roadway Section
Roadside obstacles with demonstrated safety issues	<ul style="list-style-type: none"> Remove or mitigate. 		
ADA/Sidewalk Ramps	<ul style="list-style-type: none"> Ramps shall be added where absent. Maintain functional ramps at corners. Retrofit ramps 	<ul style="list-style-type: none"> Meet ADA standards on sidewalks and driveways. 	Bicycle and Pedestrian Unit
Vertical Clearances	<ul style="list-style-type: none"> Maintain existing or minimum vertical clearances. 	<ul style="list-style-type: none"> Meet required vertical clearance. 	Bridge Section
Barrier Height	<ul style="list-style-type: none"> Maintain minimum barrier height. 	<ul style="list-style-type: none"> Meet required standard. 	Roadway Section
Existing Guardrail and terminals	<ul style="list-style-type: none"> Upgrade all guardrail less than 2A. Remove unwarranted guardrail. All blunt ends, including non-flared terminals shall be upgraded to current standards. Runs less than 18.5 inches from top of pavement to guardrail post bolt shall be adjusted or replaced to current standards. Guardrail bridge connections shall be upgraded if appropriate (type 3 okay) or added if absent. 		Roadway Section

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Urban Preservation Design Features, Continued

Project Element	Corrective Measure		Technical Resource
	“Have To”	“Like To”	
Narrow Bridges/Deficient Rails	<ul style="list-style-type: none"> Bridge rail retrofit or new bridge rails, approach guardrail, bridge connections and transitions to current standards unless bridge is scheduled for replacement. Install Type 3 object markers and post delineators. 		Bridge Section
Curb Exposure	<ul style="list-style-type: none"> 6 inch minimum curb exposure required. 	<ul style="list-style-type: none"> Meet required standard. 	Roadway Section
Cross Slope	<ul style="list-style-type: none"> Maintain existing standards where applicable. Minimize cross slope to meet standards where practical. Maximum cross slope not to exceed 8%. 	<ul style="list-style-type: none"> Meet required standard for super elevation rates and cross slopes. 	Roadway Section

The following optional items should be considered, **IF** cost effective **AND** additional funding (other than preservation funding *) is available.

Project Element	Corrective Measure	Technical Resource
Drainage	<ul style="list-style-type: none"> Upgrade systems 	Roadway Section
Access Issues	<ul style="list-style-type: none"> Driveway relocations/closures 	Region Access Mgr.
Operational Issues	<ul style="list-style-type: none"> Modify curb radii to facilitate truck movement. Islands (replacing, adding or removing) Install traffic control devices 	Roadway Section
Safety Issues	<ul style="list-style-type: none"> SPIS site addressed Rumble strips, pavement markings, slope flattening, illumination, etc. 	
Sidewalk Infill	<ul style="list-style-type: none"> If less than 10% missing in length of project. 	Bicycle and Pedestrian Unit

The urban preservation strategy is built on the premise that the pavement system can be maintained at a designated condition rating, for a certain cost, based on projects that address certain features in a consistent manner. Projects with scopes exceeding the parameters shown in the Urban Preservation Design Features table or in the Optional Items above, must have identified funding sources outside of the preservation program * (such as Bridge program, Safety program, Local Agencies, etc) to fund these enhancements.

* The Urban Preservation Program will continue to allow 6% of the total program cost for funding “Like To” and Optional items. Project Teams will propose enhancements and funding required and Regions will manage the 6% program limitation.