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## 1120.01 General

This chapter provides information specific to preservation project types.

This chapter identifies those elements and features to be evaluated and potentially addressed during the course of a preservation project. The elements listed here may be in addition to the project need identified in the Project Summary or Basis of Design (see 1120.03(8)). Preservation projects may also provide opportunities for project partnering and retrofit options involving additional elements (for example see Section 1231.06).

Preservation projects are funded in three sub-program areas:

- **Roadway Preservation (P1) projects** preserve pavement structure, extend pavement service life, and restore the roadway for reasonably safe operations of the travel modes accommodated by the facility.
- **Structures Preservation (P2) projects** preserve the state's bridge network through cost-effective actions. There are numerous types of bridge preservation actions including: deck rehabilitation, seismic retrofit, painting steel bridges, scour repair, and others.
- **Other Facilities (P3) projects** preserve the function of guardrail and signing, major drainage, major electrical, unstable slopes and other assets.

For required design elements in these programs see Exhibit 1105-1.

For more information on these programs see the Planning & Programming – Scoping website:

<http://wwwi.wsdot.wa.gov/Planning/CPDMO/PlanProgScoping.htm>

## 1120.02 Structures Preservation (P2) and Other Facilities (P3)

For Structures Preservation (P2) and Other Facilities (P3) projects see the scoping instructions specific to the sub-program and type of work to determine the likely design elements to be addressed by the project.

See Chapter 300 for documentation requirements. If the project changes a geometric design element, replaces an existing bridge or installs a new bridge additional documentation may be required; contact your ASDE to discuss appropriate documentation.

## 1120.03 Roadway Preservation (P1)

This section applies to features and design elements to be addressed on Roadway Preservation (P1) projects. See Section 1120.04 for instructions on using the Basis of Design to document design elements that are changed by the project.

### 1120.03(1) *Adjust existing features*

Adjust existing features such as monuments, catch basins, and access covers that are affected by resurfacing.

Evaluate drainage grates and gutter pans, and adjust or replace as needed to address the potential for bicycle crashes (see Drainage Grates and Manhole Covers in Chapter 1520).

For guidance on existing curb see Chapter 1239.

Replace rumble strips if they are removed through project actions, or if their average depth is less than 3/8", unless there is a documented justification for their removal (see Chapter 1600).

### 1120.03(2) *ADA requirements*

Address ADA requirements according to WSDOT policy (see Chapter 1510 and any active project delivery memorandums or design memorandums).

### 1120.03(3) *Cross slope lane*

Rebuild the cross slope to a minimum 1.5% when the existing cross slope is flatter than 1.5% and the steeper slope is needed to provide adequate highway runoff. See Chapter 1250 for more information about cross slope.

### 1120.03(4) *Cross slope shoulder*

When rebuilding the lane cross slope, evaluate shoulder cross slope in accordance with Chapter 1250.

### 1120.03(5) *Vertical clearance*

Paving projects, seismic retrofit, and other project work can change the vertical clearances of structures. For preservation projects other than bridge replacement that have no widening on or under the bridge, the minimum structure clearance is 14.5 feet. Existing structures with a vertical clearance less than 14.5 feet require a Design Analysis.

If the vertical clearance of a structure will be changed by the project, use Sections 720.03(5)(c) and 1020.03(2) for vertical clearance requirements.

Include vertical clearance and any other changed geometrics in the Basis of Design, the Design Parameters sheets, and the Design Documentation Package.

See DM Section 720.03(5)(c) for details about bridge clearances for existing structures and Section 1020.03(2) for vertical clearance of overhead sign assemblies.

Contact the Commercial Vehicle Services Office when changes to vertical clearance are planned.

### **1120.03(6) Delineation**

Install and replace delineation in accordance with Chapter 1030 (this includes pavement markings, guideposts, and barrier delineation).

### **1120.03(7) Barriers and terminals**

When the preservation project design, other than a chip seal or BST, will affect the elevation of the pavement adjacent to a guardrail, terminal, and/or transition, measure the height of those systems within the project limit and adjacent to pavement edges, curbs, or sidewalks prior to construction. Measure the height to the top of the rail element from the outside paved shoulder edge when no curb is present, from the gutter line when guardrail is set above a curb, or from the sidewalk elevation if set behind a sidewalk. Guidance for this situation:

- When the height of existing Type 1 guardrail, crashworthy terminals, and/or transitions will fall outside the height range from 26.5" to 31" (26.5" to 30" for terminals) in the project's completed condition; the existing guardrail, terminals, and/or transitions must be adjusted to a minimum height of 28" up to a maximum height of 30". This includes buried terminals that slope down such that the guardrail height is reduced to less than 26.5-inches (measured in relation to a 10H:1V line extended from the breakpoint at edge of shoulder). See Section 1610.04(3) for acceptable options to raise standard runs of guardrail, and Section 1610.04(5) for raising guardrail terminals. Replace the Type 1 guardrail system with a Type 31 guardrail system if its height cannot be adjusted to fall within the specified range.
- When the height of existing Type 31 guardrail, crashworthy terminals, and/or transitions will fall outside the height range from 28" to 32" in the project's completed condition; the existing guardrail, terminals, and/or transitions must be adjusted to a height of 31". This includes buried terminals that slope down such that the guardrail height is reduced to less than 28-inches (measured in relation to a 10H:1V line extended from the breakpoint at edge of shoulder). See Section 1610.04(3) for acceptable options to raise standard runs of guardrail, and 1610.04(5) for raising guardrail terminals. Replace the existing Type 31 guardrail system with a new Type 31 guardrail system if its height cannot be adjusted to fall within the specified range.
- When non-crashworthy terminals need to be raised, replace them with crashworthy terminals. Provide replacement terminals in accordance with 1610.04(5)(a or b). Non-crashworthy terminals and anchors that are effectively shielded by another barrier **do not warrant** replacement.
- When guardrail needs to be raised, evaluate the guardrail length of need in accordance with Chapter 1610. Notify Region Program Management if the length of need extension will be longer than 250 feet. Extending length of need further than 250 feet is beyond the scope of the pavement preservation.

- Note that removal is an option if guardrail is no longer needed based on the guidance in Chapters 1600 and 1610. Document the location of removal and the reasoning for removal in the Design Documentation Package.
- When adjusting terminals that are equipped with CRT posts, the top-drilled holes in the posts need to be at the surface of the ground.
- Pre-cast concrete barrier sections (either New Jersey or “F” shape) are normally installed at a 32” height, which includes provision for up to a 3” overlay. A 29” minimum height for this type of barrier must be maintained following an overlay.
- Single slope concrete barrier may be pre-cast or cast in place, and is installed new at a height of 42”, 48”, or 54”. A 30” minimum height must be maintained for this type of barrier following an overlay.

### **1120.03(8) Pavement Edge Treatment**

Adding a pavement edge treatment is a low-cost feature to improve safety performance for errant vehicles that depart and try to reenter the roadway. A pavement edge treatment can also help maintain the structural integrity of the roadway and pavement performance at the edge of the roadway by resisting the start of pavement cracking and/or pavement raveling.

Where practicable, install a pavement edge treatment at locations where asphalt concrete pavement is applied to the outside edge of the existing pavement. Examples where pavement edge treatment may not be practicable include, locations with roadside barrier and/or curb. After installing the pavement edge treatment, trim shoulders with material that is graded back over the edge treatment and flush with the paved roadway surface.

For more information about pavement edge treatment, contact the HQ Design Office, and visit the FHWA website at:

<https://www.fhwa.dot.gov/innovation/everydaycounts/edc-1/safetyedge.cfm>

### **1120.04 Documentation**

For Roadway Preservation (P1) projects, use the Basis of Design and Design Parameter Sheets to document decisions when the project changes design elements that are not listed in 1120.03(1) through 1120.03(8).