Chapter 1120  Preservation Projects

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 Sections 1120.02(10) for P1 projects, or 1120.03(1) for P2 and P3 Projects. Preservation projects may also provide opportunities for project partnering and retrofit options involving additional elements (for example see Section 1231.07).
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.
Existing roadside safety devices (see Section 1600.01) may remain in place unless a project scope specifically identifies it for replacement. Specific guidance for repair of certain existing devices is also provided (see Section 1120.02). When a roadside safety device replacement is required, and a policy specific to the device is not found in this chapter (or in scoping instructions for P2 and P3 projects), apply the most recent standard described in Division 16 when selecting a replacement.

1120.02 Roadway Preservation (P1)
This section applies to features and design elements to be addressed on Roadway Preservation (P1) projects. See Section 1120.02(10) for instructions on using the Basis of Design to document design elements that are changed by the project.

1120.02(1) Adjust existing features
Adjust existing features such as monuments, catch basins, drainage grates, and access covers that are affected by resurfacing.
Where drainage grates and gutter pans require adjustment or replacement, replace with designs that accommodate bicycle traffic (see Drainage Grates and Manhole Covers in Chapter 1520).
For guidance on existing curb see Chapter 1239.
1120.02(2) ADA requirements
Address ADA requirements according to WSDOT policy (see Chapter 1510 and any active project delivery memorandums or design memorandums).

1120.02(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.

1120.02(4) Cross slope shoulder
When rebuilding the lane cross slope, evaluate shoulder cross slope in accordance with Chapter 1250.

1120.02(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 0 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 0 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.

1120.02(6) Delineation
Install and replace delineation in accordance with Chapter 1030 (this includes pavement markings, guideposts, and barrier delineation).

1120.02(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 Section 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 Section 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 Chapter 1600 and Chapter 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.

### 1120.02(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.

Where the project does not affect the existing shoulder edge condition, such as during chip seal applications or “mill and fill” activities, and there is an existing vertical drop at the outside edge of the paved shoulder, apply crushed surfacing material to eliminate the edge and provide a smooth surface.

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

www.fhwa.dot.gov/innovation/everydaycounts/edc-1/safetyedge.cfm

**1120.02(9) Rumble Strips (New Section September 2021)**

Potential new rumble strip locations are identified using a benefit cost analysis performed by HQ Design. Refer to sections 1600.05(1), 1600.05(1)(b), and 1600.05(1)(c) when notified by HQ that rumble strip installation or rehabilitation needs to be considered during scoping or design. These sections will also provide guidance on whether a low-noise design is appropriate for the location.

When the project includes a bituminous surface treatment (BST) application in a location where a rumble strip is already installed, and a BST was already applied over the top of the rumble strip in the past, contact HQ Design for options.

**1120.02(10) Documentation (P1)**

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 Section 1120.02(1) through 1120.02(9).

**1120.03 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. If there are questions about project scope or policy requirements, consult your Assistant State Design Engineer (ASDE).

**1120.03(1) Documentation (P2 and P3)**

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.