

GUIDELINES FOR PAVEMENT REHABILITATION PROJECTS

4.1 Rehabilitation Program Funding and Goals

Pavement rehabilitation projects are part of a prescriptive and cost effective resurfacing, restoration and rehabilitation strategy that prolongs the service life and enhances the safety of existing roadways. The goal of the pavement rehabilitation program is to repair damage in order to extend overall pavement life. Projects are limited to pavement surface treatments only, and do not typically include drainage, roadway realignment, curb, gutter and sidewalk or signal work, with the exception of replacing signal detection removed as a result of resurfacing.

UDOT's Central Asset Management division analyzes UDOT's roadway network condition each year and determines the percentage of funding allocated to the pavement rehabilitation program. Once the statewide allocation amount is available, the regional allocation is then determined. The Regions identify pavement rehabilitation projects during their yearly STIP workshop meetings and the Utah Transportation Commission is presented with the program amount and project list for approval at the March or April commission meeting. These projects will also follow the budget recovery process outlined by UDOT.

4.2 Limitations of Pavement Rehabilitation Projects (eligibility):

- a. The project must be on the interstate or Level 1 roads. (Projects on Level 2 roads need to be approved by the Asset Management Steering Committee.)
- b. The pavement rehabilitation projects consist of the following treatments:
 1. Maximum 5 inch rotomilling; for example, removal of up to two open graded seals plus removal of 3 inch dense graded mix
 2. Maximum 4 inch total resurfacing; for example, 3 inch dense graded mix plus 1 inch open graded seal
 3. Concrete joint resealing and spall repair
 4. Concrete grinding
 5. Slab jacking and/or under sealing
 6. Dowel bar retrofit
 7. Cold-in-place recycling
 8. Minimal full depth/partial concrete panel replacement
 9. Other treatments may be used with approval from the Asset Management Steering Committee
- c. Allowable incidental work:
 1. Adjustment of existing features affected by the resurfacing, such as monuments, catch basins, and manhole covers
 2. Repair or replacement of signal detection and traffic counting loops
 3. Minimum required safety features as recommended by the [Region Purple Book Project Checklist](#)
 4. Pavement transitions for bridges, side streets, etc.
 5. Bridge preservation and minor rehabilitation items; Bridge Preservation Requirements section 4.3 below for details

- d. The scope of work must meet the following conditions:
 - 1. No horizontal or vertical realignment
 - 2. No roadway widening
 - 3. No major bridge rehabilitation; any work that increases the condition of a bridge element; for example a deck replacement
 - 4. No signal work except detection loop replacement
 - 5. No utility involvement except raising manholes

4.3 Bridge preservation requirements within a rehabilitation project.

Bridge Preservation is defined as actions or strategies that prevent, delay or reduce deterioration of bridges or bridge elements, restore the function of existing bridges, keep bridges in good condition and extend their life.

During the project scoping process (prior to establishing the project budget), obtain a Scope and Estimate Report from the Structures Division when the roadway being rehabilitated travels over a bridge.

Bridge work items allowed include:

- a. Bridge asphalt overlay (only applies to bridges with an existing asphalt overlay) allowable work based on the pavement evaluation are as follows:
 - 1. Remove asphalt to deck and approach slab
 - 2. Pothole patch concrete deck and approach slab
 - 3. Install waterproofing membrane
 - 4. Replace asphalt; 2 inch minimum and 3 inch maximum thickness
 - 5. Provide taper on roadway as necessary; profile and cross-slope adjustments may be required
 - 6. Do not place any additional material weight on bridge. Material placed may not exceed material removed
- b. Bridge overlays (non-asphalt):
 - 1. Sound concrete deck and approach slab
 - 2. Pothole patch concrete deck and approach slab
 - 3. Apply overlay system; for example thin-bonded polymer overlay or polyester concrete overlay
 - 4. Provide taper on roadway as necessary; profile and cross-slope adjustments may be required
- c. Bridge deck hydro demolition and overlay
- d. Bridge joint closure, repair or replacement
- e. Bridge approach slab jacking
- f. Concrete repair and sealing
 - 1. Superstructure
 - i. Parapet concrete repair and sealing

- ii. Beam end repair
- iii. End diaphragm placement
- 2. Substructure
 - i. Abutment concrete repair and sealing
 - ii. Bent concrete repair and sealing
- g. Miscellaneous items
 - i. Spot painting structural steel
 - ii. Bearing replacement

The Structures Division will supplement funding for work items beyond deck and approach slab treatments (items a through e).

4.4 Safety identification

Once the project is identified and funded, the project team will complete an inventory of the safety elements on the rehabilitation project. The [Region Purple Book Project Checklist](#) is used to document safety related issue on the project and to identify scope elements that will be addressed with the project. Pavement rehabilitation projects should, at a minimum, maintain the existing level of safety and should consider appropriate ways to enhance safety. Rehabilitation projects should not be avoided, deferred, or shortened based on the need to repair or improve roadside safety hardware.

The required safety improvements listed in section 4.5 must be included in all projects.

If the estimated total cost of safety elements, not included in section 4.4, related to a Pavement Rehabilitation project exceeds 10 percent of the project value, submit a detailed request to UDOT Division of Traffic and Safety for supplemental funding to cover the cost of safety improvements beyond 10 percent. If additional funding is not available from the Traffic and safety division, the Project Team will analyze each safety element for inclusion into the project based on engineering analysis and practical design decisions and coordinate with the division of Traffic and Safety. These decisions will be documented within the project file (or a future database if created) for consideration and prioritization related to other traffic and safety funding opportunities.

The inclusion of pavement marking tape instead of pavement marking paint should be a project by project decision. As tape is advantageous for certain roadway projects it also competes with the statewide goal of preserving UDOT's entire roadway network.

4.5 Required safety elements

Items to be included in all applicable Pavement Rehabilitation projects:

- a. Eliminate pavement drop-offs
- b. ADA pedestrian ramps that are not to current UDOT standards

- c. Rumble strips installed or re-ground in accordance with UDOT Rumble Strip Policy 06C-17
- d. Adjust barrier and guardrail height as necessary due to resurfacing
- e. Upgrade guardrail terminals, barrier terminals, and bridge ends

These items are included in the [Region Purple Book Project Checklist](#).

The Region Project Manager (PM) and the Region Traffic and Safety Engineer will decide which additional safety recommendations to include in the project based on benefit/cost ratios, accident history, available budget, and the goal to preserve pavements.

4.6 Two percent budget rule for items outside Rehabilitation Categories

For efficiency purposes a pavement rehabilitation project can include project specific items that are not included in section 4.2 up to two percent of the total project value. These items may include but are not limited to deteriorated signs, non-functioning fence, lack of localized curb and gutter sections, minor relocation of accesses, lack of drainage systems that affects the functionality and life of the pavement, culvert rehabilitation or replacement, and other items identified by the project teams during the scoping phase of the project. These items will be documented in the Project Definition Document (PDD) during the scoping phase. The quality control check on these items will be performed by the Preconstruction Engineer's prior to advertisement of the project. If needs exceed two percent, additional funding sources are required to include the items in the project bid package. The goal of the two percent funding is to allow for a cost effective approach to preserving other roadside elements outside of the pavement while a Contractor is mobilized to the project location.

Pavement rehabilitation projects should consider integrated transportation solutions where applicable including considerations related to UDOT's Active Transportation Policy 07-117.

4.7 Performance measures and reporting

UDOT reports pavement condition annual in the [Strategic Direction](#) document and on the [Asset Management website](#).