

**KENTUCKY TRANSPORTATION CABINET
POLICY FOR FEDERALLY FUNDED PAVEMENT REHABILITATION AND
PREVENTATIVE MAINTENANCE PROJECTS**

I. GENERAL

The following policy shall apply when the intent of the project is to perform rehabilitation or preventative maintenance rather than reconstruction for all federal-aid highway funded projects on the National Highway System (NHS).

For purposes of this document:

Pavement reconstruction shall be defined as the replacement or reestablishment of the original pavement structural capacity by the placement of the equivalent or increased pavement structure. Reconstruction may utilize either new or recycled materials for the reconstruction of the complete pavement structure.

Pavement rehabilitation shall be defined as resurfacing, restoration, and rehabilitation (3R) work consisting of structural enhancements that extend the service life of an existing pavement and/or improve its structural capacity. Rehabilitation techniques include restoration treatments and/or structural overlays. This may include partial recycling of the existing pavement, placement of additional surface materials, and/or other work necessary to return an existing pavement to a condition of structural or functional adequacy.

Preventative maintenance shall be considered as cost effective treatments to an existing roadway system and its appurtenances that preserves the system, retards future deterioration, and maintains or improves the functional condition of the system without increasing structural capacity. Projects that address deficiencies in the pavement structure or increase the structural capacity of the facility are not considered preventative maintenance.

II. AMERICANS WITH DISABILITIES ACT OF 1990 (ADA)¹

Title II of the Americans with Disabilities Act (ADA) requires that state and local governments ensure that persons with disabilities have access to the pedestrian routes in the public right of way. This requirement impacts both pavement rehabilitation and preventative maintenance projects.

Whenever pavement treatments identified as "Alteration" are performed on preventative maintenance or rehabilitation projects, the transitions to adjacent sidewalks must be addressed (ramps added/upgraded) as part of the project. See section IV.b. for definitions and a list of treatments identified as "alteration" and "maintenance".

For pavement rehabilitation projects, the project must address all ADA requirements within the project limits and scope of work. Highway projects impacting urban areas should complement the ADA Transition Plan adopted by the local agency. ADA considerations are to be coordinated with KYTC Division of Highway Design, as well as with the local agency.

Where physical constraints make upgrades infeasible a finding of technical infeasibility must be documented in accordance with ADAAG Section 4.1.6 (j).

¹ <http://www.ada.gov/doj-fhwa-ta.htm>

III. PAVEMENT REHABILITATION

A. Applicable Standards

1. Interstates

In accordance with national design policy for the Interstates, the standards used for horizontal alignment, vertical alignment, and widths of median, traveled way, and shoulders for **pavement rehabilitation projects** may be the AASHTO interstate standards that were in effect at the time of original construction or inclusion into the interstate system. The original AASHTO interstate standards were adopted in 1958 and revised periodically. Some of the older standards may be difficult to find. For this reason, a copy of the original standards that includes the 1963, 1965 and 1967 revisions is attached. For more recent Interstate standards contact KYTC Office of Highway Design.

2. National Highway System (NHS) facilities other than Interstate

It is the intent of this policy that the current AASHTO "A Policy on Geometric Design of Highways and Streets" is the design standard for geometric considerations for pavement rehabilitation projects.

B. Geometrics

As part of each **pavement rehabilitation project**, existing characteristics and/or features (including, roadway geometries, clear zones, drainage structures, signing, and safety appurtenances) shall be evaluated to determine if any are having a significant adverse effect on the safety or operation of the facility. As part of this evaluation, a crash analysis shall be completed within the project limits. If it is determined that existing characteristics and/or features are not having a significant adverse effect on the safety or operation of the facility, reconstruction of these features will not be required. This finding must be documented; however, a formal design exception is not required.

Where it is determined that existing characteristics and/or features are having a significant adverse effect on the safety or operation of the facility, reconstruction of these shall be evaluated. If it is not feasible, or cost effective, to reconstruct the existing characteristics and/or features to new construction standards, then reconstruction to less than new construction standards and/or inclusion of appropriate safety and other mitigation measures should be considered.

If it is determined to leave in place an existing substandard condition that was determined to have a significant adverse effect on the safety or operation of the facility, a design exception must be documented in accordance with Section 704 of the KYTC Design Manual.

In cases where an existing design feature is reconstructed to less than current standards, a design exception must be documented in accordance with section 704 of the KYTC Design Manual.

C. Guardrail, End Treatments, and Bridge Rail Connectors

Existing guardrail, end treatments, and bridge rail connectors shall be upgraded to KYTC Standards² for all **pavement rehabilitation projects**. Length of need shall be evaluated and remedies incorporated in the project development process. Guardrail end treatments which have

² KYTC Standards must be approved by FHWA for use on the National Highway System

been determined to provide unsatisfactory performance are not to be used on any NHS route³. Site preparation is important to the performance of end treatments. End treatments, which are more dependent on site preparation, should be avoided when alternative end treatments provide a more desirable solution.

Steel guardrail block outs must be removed and replaced with approved block outs, per KYTC Standard Drawings⁴. Where a one (1') foot space between the back of the guardrail post and the slope hinge break cannot be reasonably obtained, seven (7') foot guardrail post will be utilized. Widening shoulders to provide room for offsetting the face of guardrail from the edge of usable shoulder may be deferred to a future reconstruction project.

All roadway and roadside features within the limits/termini of each project should be evaluated and appropriate actions included to provide for a safer roadway. Drainage structures and sign supports are examples of features which should receive particular attention. This will include examining locations for the potential use of crash cushions or other attenuator devices.

D. Bridges

Functionally or structurally obsolete bridge rail must be replaced on all existing bridges that are within the limits of, or immediately adjacent to, a pavement rehabilitation project. If a cluster of over-represented crashes has been identified at the bridge and bridge shoulder widths do not meet AASHTO standards, widening the bridge will be evaluated. If widening the bridge is considered unreasonable or infeasible, then a design exception must be documented in accordance with section 704 of the KYTC Design Manual.

Bridges over the interstate must provide a 16' minimum vertical clearance over all lanes and shoulders. Exceptions may be considered on vertical clearance on the shoulders if the interstate is not on the National Defense System Route (STRAHNET)⁵ and there is a significant additional cost to rectifying the shoulder clearance.

E. Acceleration and Deceleration Ramps/Lanes

On freeways, the adequacy of mainline acceleration and deceleration ramps/lanes shall be reviewed in accordance with current criteria, as detailed in KYTC Design Manual⁶. If it is determined that current conditions require that the ramp/lanes be reconstructed in conjunction with the proposed rehabilitation project, the ramp/lanes shall be reconstructed to current AASHTO standards. If it is determined that there is minimal effect on the safety and operation of the facility, an exception may be granted to defer reconstruction to a future project.

F. Americans with Disabilities Act of 1990 (ADA)

All **pavement rehabilitation projects** shall address ADA requirements within the project limits and scope of work. Highway projects impacting urban areas should complement the ADA Transition Plan adopted by the local agency. ADA considerations are to be coordinated with KYTC Division of Highway Design, as well as with the local agency.

³ <http://www.fhwa.dot.gov/planning/nhs/maps/ky/index.htm>

⁴ <http://transportation.ky.gov/Highway-Design/Pages/Standard-Drawings.aspx>

⁵ <http://www.fhwa.dot.gov/planning/nhs/>

⁶ <http://transportation.ky.gov/Highway-Design/Pages/Highway-Design-Manual.aspx>

G. Medians

Medians should be evaluated to determine if reconstruction to provide a safely traversable section is warranted. (see AASHTO Roadside Design Guide).

H. Pavement Performance Period

The design of **pavement rehabilitation projects** (e.g., 3R) shall provide for a minimum performance period of eight (8) years. Exceptions to this requirement must be obtained from the State Highway Engineer and must be documented on a case-by-case basis.

IV. PREVENTATIVE MAINTENANCE

According to AASHTO, preventative maintenance is, "the planned strategy of cost effective treatments to an existing roadway system and its appurtenances that preserves the system, retards future deterioration, and maintains or improves the functional condition of the system without increasing structural capacity." Projects that address deficiencies in the pavement structure or increase its structural capacity are not considered preventative maintenance. Functionally, Federal-aid eligible preventative maintenance activities are those that address aging, oxidation, surface deterioration, and normal wear and tear from day-to-day performance and environmental conditions. Preventative maintenance activities extend the service life of the roadway asset or facility in a cost-effective manner.

All preventative maintenance projects should consider appropriate ways to maintain or enhance the current level of safety and accessibility. However, the intent of preventive maintenance is to ensure the continued utility of the existing facility and does not necessarily require the upgrading of elements which can reasonably be deferred to a future reconstruction or rehabilitation project.

Preventative maintenance activities include but are not limited to roadway activities such as pavement joint repair, chip seals, crack sealing, scrub seals, slurry seals, spot high-friction treatments, surface sealing, pavement patching, thin asphalt overlays, shoulder repair, restoration of drainage, dowel bar retrofit, and diamond grinding. Preventative maintenance activities also include bridge activities such as crack sealing, deck patching, latex and thin asphalt overlays, joint repair, bridge washing, bridge joint lubrication, seismic retrofit, scour countermeasures, and painting.

Within the context of the above description, thin asphalt overlays are defined as a uniform layer of up to two (2) inches and may include leveling to correct cross-slope and up to five (5) percent surface area extra depth pavement repairs.

A. Guardrail Upgrades:

On thin overlays and diamond grinding projects, guardrail end treatments and bridge rail connectors shall be upgraded to current standards. Steel guardrail block outs can remain in place if all other features are satisfactory. Formal documentation on the disposition of deficient design features will be needed where overlays are in excess of two inches.

B. Americans with Disabilities Act of 1990 (ADA):

For preventative maintenance projects, the transitions to adjacent sidewalks must be addressed (ramps

added/upgraded) as part of the project whenever pavement treatments identified as “Alteration” in the below table are performed. The pavement treatments identified as “Maintenance” in the below table may be performed without addressing transitions to adjacent sidewalks. Maintenance activities on streets, roads, or highways are not considered alterations and may be performed without addressing transitions to adjacent sidewalks. In some cases, the combination of several maintenance treatments occurring at or near the same time may qualify as an alteration and would trigger the obligation to provide transitions.

Alterations include, but are not limited to the following treatments or their equivalents: addition of a new layer of asphalt with or without milling, reconstruction, concrete pavement rehabilitation and reconstruction, open-graded surface course, micro-surfacing and thin lift overlays, cape seals, and in-place asphalt recycling.

Maintenance activities that serve solely to seal and protect the road surface, improve friction and control splash and spray are considered to be maintenance because they do not significantly affect the public’s access to or usability of the road. Some examples of the types of treatments that would normally be considered maintenance are: painting or striping lanes, crack filling and sealing, surface sealing, chip seals, slurry seals, fog seals, scrub sealing, joint crack seals, joint repairs, dowel bar retrofit, spot high-friction treatments, diamond grinding, and pavement patching.

ADA IMPLEMENTATION (Maintenance versus Alteration)

Pavement Treatment Types (Maintenance vs. Alteration)	
MAINTENANCE	
Chip Seals	Fog Seals
Crack Filling and Sealing	Joint Crack Seals
Diamond Grinding	Joint repairs
Dowel Bar Retrofit	Pavement Patching
Scrub Sealing	Slurry Seals
Spot High-Friction Treatments	Surface Sealing
ALTERATION	
Addition of New Layer of Asphalt	Mill & Fill / Mill & Overlay
Cape Seals	New Construction
Hot In-Place Recycling	Open-graded Surface Course
Microsurfacing / Thin-Lift Overlay	Rehabilitation and Reconstruction

V. APPROVAL SIGNATURES

Approved: 
KYTC Secretary

Date: 12-19-14

Approved: 
FHWA Division Administrator

Date: 12-4-14