

Local Agency Pavement Preservation Guideline (LAPPG)

DRAFT 11/03/2010

Overview

This LAPPG has been developed to provide guidelines for local agency pavement preservation projects delivered using federal funding. Federal funding for local agency paving projects is limited to local streets classified as either Arterials or Major Collectors. Pavement preservation projects delivered using this guideline must conform to AASHTO standards. Full depth paving projects must conform to ODOT 3R or 4R Standards, as applicable.

The primary goal for pavement preservation projects is to preserve existing pavements that are in “fair or better” condition. This LAPPG applies to: local agency preservation projects that are limited to a single lift non-structural AC overlay or inlay; or other paving methods described herein that meet required design criteria.

Safety Considerations

A Roadside Inventory, using the ODOT Highway Design Manual Roadside Inventory form, must be completed on all local agency pavement preservation projects. ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/AdxD.pdf

Identified safety issues must be evaluated to determine if correction is warranted. If warranted, correct identified issues as part of the pavement preservation project or in a future project programmed by the local agency.

Specific safety criteria are:

1. Existing safety features that do not meet the NCHRP 230* testing standards shall be considered for upgrading to the latest adopted NCHRP testing standards.
2. Safety measures requiring upgrading include un-connected bridge transitions and guardrail terminals (Pre 230), adding shoulder rock to provide a transition from the new pavement depth, guard rail adjustment to restore standard height above pavement, and re-striping when paving is complete.
3. In no case shall pavement preservation projects degrade existing safety, pedestrian and/or bicycle conditions. For example, a resurfacing project shall not leave a seam, sunken drainage grates or other hazards in the shoulder or bike line.

Pavement Preservation Criteria

1. Each pavement preservation project must include a pavement design stamped by a Professional Engineer licensed in the State of Oregon. It shall include as much pavement history and design documentation as is available. The history must include a pavement condition rating and photographs. Also include any available

“as built” information and information on other treatments since the original construction. The design documentation should include at a minimum anticipated traffic, materials selected, analysis type and basis for the design selected.

2. If deemed necessary by the pavement designer or local agency, pavement testing consisting of coring and/or deflection testing, will be used to supplement pavement history documentation. Refer to the ODOT Pavement Design Guide for minimum testing frequencies and additional information. http://www.oregon.gov/ODOT/HWY/CONSTRUCTION/docs/pavement/odot_pavement_design_guide_2007.pdf
3. All pavement design procedures for projects located on state highways and on the NHS must conform to ODOT Pavement Design Guide requirements. For projects on local systems, methods of pavement design other than ODOT’s method are acceptable. Refer to Chapter 2 of the ODOT Pavement Design Guide for additional guidance.
4. The existing surface shall be rated “fair or better” with no evidence of significant structural deficiencies. The rating system used, shall be the Good - Fair – Poor (GFP) condition rating definitions from the ODOT GFP Pavement Condition Rating Manual (see Appendix A for manual excerpts) or equivalent GFP rating system. http://www.oregon.gov/ODOT/HWY/CONSTRUCTION/docs/pavement/GFP_pavement_condition_rating_manual.pdf
5. The Pavement Design must identify, either through testing or by visual evaluation, localized areas of apparent structural failure. Provision must be made in the pavement design for their repair using Asphalt Concrete Pavement Repair (Specification Section 748). For pavement preservation projects, AC pavement repairs consisting of dig outs, base treatment or subgrade repairs generally should not exceed 10% of pavement surfacing. Dig outs to repair utility work do not apply to the ~10% number. Projects with pavement repair areas exceeding 10% of the pavement surfacing must be supported by an engineering and economic analysis included in the Pavement Design report.
6. Pavement preservation surfacing options which may be used provided the pavement design indicates the required design life will be met include:
 - AC overlays
 - Emulsified asphalt treatment
 - Fog seals
 - Slurry seal
 - Single application chip seal
 - Multiple application chip seal
7. For AC surface treatments on pavement preservation projects, a pavement design life of eight years minimum is the goal. The pavement designer may look at a

shorter design life depending upon the situation. A design life of less than eight years will require analysis for justification and an approved design exception.

8. For chip seals, slurry seals, and emulsified asphalt concrete paving on pavement preservation projects, a pavement design life of five years minimum is the goal. Note that the design life of a fog seal cannot be readily determined. Therefore, the use of a fog seal must be approved by the ODOT Pavements Group.
9. AC pavement preservation standards allow for the pavement overlay or inlay depth to be 2" to 3". The 3" lift will only be allowed if it is specified in the pavement design. Three-inch lifts allow the use of ¾" WMAC, HMAC or MHMAC, as appropriate and where deemed suitable by the pavement designer.
10. Shoulder or pavement widening is acceptable. Any widening must conform to current AASHTO standards.
11. Leveling to address rutting or localized repairs is allowed. Leveling will not be used as an added lift to provide structure.
12. The resulting paving work shall not result in a cross-slope in excess of 6% and shall not reduce curb exposure below 4 inches.
13. Work items required in addition to paving where applicable are:
 - Replacement of striping and delineation where warranted
 - Adjusting gravel shoulders so they match paved surface elevation
 - Replacement of signal loops if impacted
 - Replacement of rumble strips, speed humps, etc. if impacted
 - Adjusting existing features e.g. safety features such as guardrails or barrier, monuments, manholes, catch basins, etc. affected by resurfacing
14. Regain minimum curb exposure via grinding and inlay.
15. A combined grind, inlay and overlay that exceeds 3" moves the project into 3R standards unless an approved Design Exception is obtained.
16. When the pavement recommendation is an inlay, the width of the inlay will depend on the width of existing shoulders. If the existing pavement is a dense mix the inlay will typically be a minimum of 2' to 3' beyond the fog stripe. If the existing pavement is an open graded mix, the inlay will be full roadway width and full depth removal of the open graded mix is required.
17. Assess pedestrian facilities for potential ADA upgrades, additions or modifications. Sidewalk ramps, if not present or not functional, must be constructed during the project or programmed for a future project by the local agency. ADA upgrades of existing pedestrian facilities, that were built to standards at the time of their construction and that are functional, are not required but should be considered. Low cost upgrades should be completed as appropriate. Note that if one corner of an intersection is brought up to ADA standards, all intersection corners that have viable pedestrian facilities, must be made accessible.

18. Culvert installation, replacement, or repair is allowed if warranted by design evaluation.
19. Placing an additional layer of AC wearing surface adds to the bridge dead load and reduces vertical clearance to any overhead obstruction. The preferred process is to grind out least a portion of the old surface so that there is no net increase in the thickness of the AC wearing surface. In cases where grinding is not desired, any bridge that will have a final thickness of AC exceeding 4 inches requires an updated load rating to ensure that there is adequate load capacity when the project is completed.
20. Permanent signing, if replaced, must conform to the “2003 Manual on Uniform Traffic Control Devices (MUTCD), Revision 2” or latest officially ODOT adopted version. New sign posts must meet current safety standards.

Pavement Preservation Specifications

The following Oregon Standard Specifications For Construction, with latest updated and ODOT approved Special Provisions, are to be used for local agency pavement preservation projects:

- Section 705 - Emulsified Asphalt Prime Coat and Emulsified Asphalt Fog Coat
- Section 706 - Emulsified Asphalt Slurry Seal Surfacing
- Section 710 - Single Application Chip Seal projects
- Section 715 - Multiple Application Chip Seal projects
- Section 735 - Emulsified Asphalt Concrete Pavement
- Section 744 - Asphalt Concrete Pavement projects (as revised)
- Section 745 - Asphalt Concrete Pavement projects
- Section XXX – Warm Mix Asphalt Concrete (WMAC) – *(Note: this section is a placeholder, a specification for WMAC is under development)*

Use these specifications based on the following criteria:

- For all projects on the National Highway System (NHS) or on state highways, use the Section 745 paving specification, with Type “A” testing as defined in the Manual of Field Testing Procedures (MFTP).
- For projects on local roadways that are functionally classified as either Arterials or Major Collectors, that contain AC quantities of 10,000 tons or greater and with greater than 5,000 ADT, use the Section 745 paving specification and Type “A”, “B”, or “C” testing per the MFTP.
- For projects on local roadways that are functionally classified as Arterials or Major Collectors that either: contain AC quantities of less than 10,000 tons OR; with

ADT of less than 5,000, regardless of tonnage, use either the 745 specification with Type "D" testing, or the current 744 paving specification.

- For projects that have small amounts of AC paving (such as curbs, walks, multi-use paths) use the 745 specification with Type "E" testing or the 744 specification.
- Type "D" and "E" testing requires Section 165.10 modification language and approval by both ODOT Quality Assurance (QA) and Office of Project Letting (OPL) staff.

Asphalt Escalation

When Asphalt Escalation is required by the local agency, over 150 tons of liquid asphalt is in the project, and the 00744 or the 00745 Specification is being used include a bid item for Liquid Asphalt in the project estimate.

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APPENDIX A

**GFP CONDITION RATING DEFINITIONS
 Asphalt Concrete Pavement (AC)**

<u>Condition</u>	<u>Definition</u>
Very Good	Stable, no cracking, no patching, and no deformation. Excellent riding qualities. Nothing would improve the roadway at this time.
Good	Stable, minor cracking, generally hairline and hard to detect. Minor patching and possibly some minor deformation evident. May have dry or light colored appearance. Very good riding qualities. Rutting may be present but is less than 1/2".
Fair	Generally stable, minor areas of structural weakness evident. Cracking is easier to detect, patched but not excessively. Deformation more pronounced and easily noticed. Ride qualities are good to acceptable. Rutting may be present but is less than 3/4".
Poor	Areas of instability, marked evidence of structural deficiency, large crack patterns (alligating), heavy and numerous patches, deformation very noticeable. Riding qualities range from acceptable to poor. When rutting is present, rut depth is greater than 3/4".
Very Poor	Pavement in extremely deteriorated condition. Numerous areas of instability. Majority of section showing structural deficiency. Ride quality is unacceptable (probably should slow down).

Refer to the ODOT GFP Pavement Condition Rating Manual http://www.oregon.gov/ODOT/HWY/CONSTRUCTION/docs/pavement/GFP_pavement_condition_rating_manual.pdf for GFP rating process, examples, photographs and PCC pavement rating information.

APPENDIX B

Local Agency and Consultants Quality Assurance Testing Program Choices

A	B	C	D	E
Full ODOT QC/QA Program with ODOT doing the QA Testing	ODOT QC/QA Program with ODOT or others doing the QA Testing	Other documented QC/QA Program subject to ODOT approval	Local Agency Consultant or Contractor QC Testing only	Commercial Grade Certs only
All projects on NHS and State Highways				
Non NHS Bridges and Structures	Non NHS Bridges and Structures			
Arterials and Major Collectors	Arterials and Major Collectors	Arterials and Major Collectors	Arterials and Major Collectors	
Local Streets and Roads and Minor Rural Collectors	Local Streets and Roads and Minor Rural Collectors	Local Streets and Roads and Minor Rural Collectors	Local Streets and Roads and Minor Rural Collectors	
Curbs, Sidewalks and Multi-Use Paths	Curbs, Sidewalks and Multi-Use Paths	Curbs, Sidewalks and Multi-Use Paths	Curbs, Sidewalks and Multi-Use Paths	Curbs, Sidewalks and Multi-Use Paths

Note:

1. Type A is required for all projects on the National Highway System (NHS) or on a State Highway. This also requires that ODOT perform all QA testing.
2. The use of Type C testing requires that the Local Agency or Consultant submit a fully documented alternative to ODOT's QA Program to the ODOT Quality Assurance Engineer for approval.
3. Choices B, C, D and E may be used on Federal Aid projects, except as specified under Note 1.
4. All technicians and testing labs shall be ODOT certified for the tests they are performing.
5. Choices B, C, D and E require the use of Special Provision 00165. This provision may be obtained from the ODOT Specifications Engineer or Quality Assurance Engineer.