TRANSPORTATION IMPROVEMENT BOARD

SMALL CITY PAVEMENT RATING MANUAL

These inspection procedures offer a method of determining pavement and severities of defects or distresses in the pavement surface.

The elements of pavement condition rating are as follows:

1. The type of defect.
2. The severity of the defect.
3. The extent to which the road surface is affected by the defect.

There are several types of defects and several possible severities and extents for each defect. These are described and illustrated for flexible pavements in the following pages of this manual.

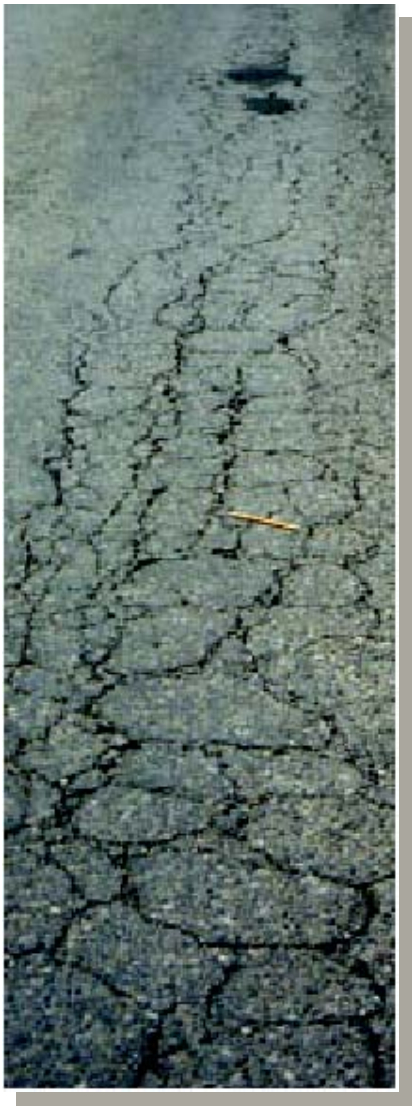
If you have any questions, please contact your TIB Project Engineer

The following pages are an excerpt from the
Pavement Surface Condition Field Rating Manual for Asphalt Pavement

Northwest Pavement Management Association
Sponsored by:
Washington State Technology Transfer Center
Highways & Local Programs
Washington State Department of Transportation

The manual in its entirety can be viewed at
http://www.wsdot.wa.gov/fasc/engineeringpublications/manuals/AsphaltPavements.pdf

ALLIGATOR CRACKING



Alligator fatigue cracking is associated with loads and is usually limited to areas of repeated traffic loading. The cracks surface initially as a series of parallel longitudinal cracks within the wheel path that progress with time and loads to a more branched pattern that begins to interconnect. The stage, at which several discontinuous longitudinal cracks begin to interconnect, is defined as alligator cracking. Eventually the cracks interconnect sufficiently to form many pieces, resembling the pattern of an alligator.

On narrow, two-lane roads, alligator cracking may form along the center line rather than in the customary wheel paths.

Almost always, the pattern of the cracking (the longer dimension of the connected cracks) is parallel to the roadway or direction of vehicle travel. However, alligator cracking occasionally occurs in a pattern transverse to the roadway direction because of poor trench compaction, settlement, or frost action.

Pot holes and other occurrences of destroyed or missing pavement are accumulated as high severity alligator cracking and may also be noted in the comments area of the field form.

SEVERITY:

Low — Branched, longitudinal, discontinuous thin cracks are beginning to interconnect and form the typical alligator pattern with no spalling.

Medium — Cracking is completely interconnected and has fully developed an alligator pattern. Some spalling may appear at the edges of cracks. The cracks may be greater than 1/4-inch wide, but the pavement pieces are still in place.

High — The pattern of cracking is well developed. Spalling is very apparent at the crack. Individual pieces may be loosened and may rock under traffic. Pieces may be missing. Pumping of fines up through the cracks may be evident.

Low

Medium

High

LONGITUDINAL CRACKING

Longitudinal cracks run roughly parallel to the roadway center line. Longitudinal cracks associated with the beginning of alligator cracking are generally discontinuous, broken, and occur in the wheel path. However, any longitudinal crack that is clearly within the wheel path should be rated.

Note: Do not include cracks which reside only within 6 inches of a lane edge. These cracks are assumed to be caused by, or related to, a paving construction joint and should be rated as non-wheel path longitudinal cracking. If your survey includes an item for joint or crack seal condition, you should include the seal condition of these lane edge construction joints in that survey item.

SEVERITY:

Low — The cracks have very little or no spalling along the edges and are less than 1/4-inch in width. If the cracks are sealed and the width of the crack prior to sealing is invisible, they should be classified as Low Severity.

Medium — The cracks have little or no spalling but they are greater than 1/4-inch in width. There may be a few randomly spaced low severity connecting cracks near the main crack or at the corners of intersecting cracks.

High — Cracks are spalled and there may be several randomly spaced cracks near the main crack or at the corners of intersecting cracks. Pieces are visibly missing along the crack. At some point, this longitudinal cracking becomes alligator cracking.

Low

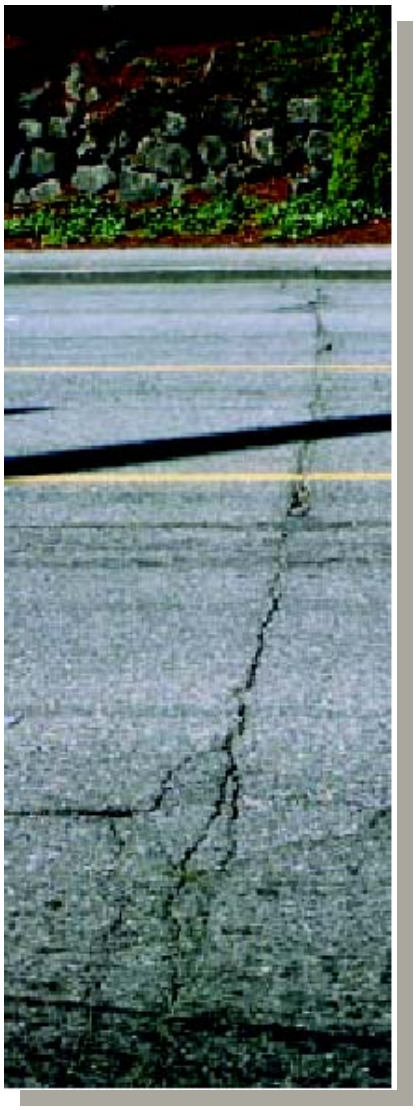
Medium

High

TRANSVERSE CRACKING

Transverse cracks run roughly perpendicular to the roadway center line. They may be caused by surface shrinkage due to low temperatures, hardening of the asphalt, or cracks in underlying pavement layers such as PCCP slabs. They may extend partially or fully across the roadway.

Consider only those transverse cracks that are a minimum of two feet in length.



SEVERITY:

Low — The cracks have very little or no spalling along the edges and are less than 1/4-inch in width. If the cracks are sealed and the width of the crack prior to sealing is invisible, they should be classified as Low Severity.

Medium — The cracks have little or no spalling but they are greater than 1/4-inch in width. There may be a few randomly spaced low severity connecting cracks near the main crack or at the corners of intersecting cracks.

High — Cracks are spalled and there may be several randomly spaced cracks near the main crack or at the corners of intersecting cracks. Pieces are visibly missing along the crack.

Low

Medium

High

PATCHING

A patch is an area of pavement which has been replaced with new material to repair the existing pavement or access the utility.

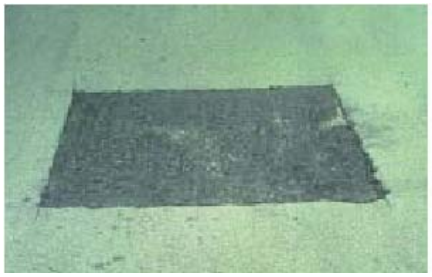
A patch is considered a defect no matter how well it is performing (a patched area or adjacent area usually does not perform as well as an original pavement section). Generally, some roughness is associated with this distress. In general, a patch is less than a typical rehabilitation in size and scope. They are less than full roadway width and/or are less than project length. Some agencies may have patches as long as the work defined by another agency as a rehabilitation.

Temporary patches, as well as localized permanent repairs (dig-out repair), are included in this distress category. Utility cut patches are also included as part of the patching values.

SEVERITY:

Low — Patch has at most low severity distress of any type.
Medium — Patch has medium severity distress of any type.
High — Patch has high severity distress of any type.

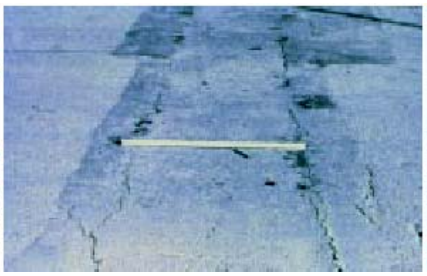
Low



Medium

Low

Medium



High

RAVELING AND AGING

Raveling and aging are pavement surface deterioration that occurs when aggregate particles are dislodged (raveling) or oxidation causes loss of the asphalt binder (aging). An ACP loses its smooth surface and begins to appear very open and rough.

The severity is rated by the degree of aggregate and binder loss. Rate the overall severity within the segment as the most predominate observed level.

This distress is measured or observed differently depending on whether the road surface is BST or ACP. Care should be exercised when rating chip sealed pavements, as they tend to look raveled because of the inherent nature of the chip seal surface. However, raveling in chip sealed pavements (loss of aggregate) actually results in a condition of excess asphalt, and should be rated as flushing (see next distress, Flushing/Bleeding).

SEVERITY:

Low — The aggregate and/or binder has started to wear away but has not progressed significantly. The pavement only appears slightly aged and slightly rough.

Medium — The aggregate and/or binder has worn away and the surface texture is moderately rough and pitted. Loose particles may be present, and fine aggregate is partially missing from the surface.

High — The aggregate and/or binder have worn away significantly, and the surface texture is deeply pitted and very rough. Fine aggregate is essentially missing from the surface, and pitting extends to a depth approaching one half the coarse aggregate size.

Low

Medium

High