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Road Terms & Definitions

Aggregate

A substance composed of mineral crystals or mineral rock fragments, used in pavement.

All-season Roads

Roads that have a sub-base, aggregate base and asphalt surface of adequate thickness and composition to withstand year-round use of heavy vehicles without damage.

Alligator Cracking

Cracks in an asphalt pavement surface forming a pattern that resembles an alligator's hide or chicken wire. Alligator cracking may begin with a single longitudinal crack in the wheel path. The cracks indicate failure of the surface layer generally caused by repeated traffic loadings.

Asphalt Emulsion

A liquid mixture of asphalt, water and an emulsifying agent. It is simply a suspension of small asphalt cement globules in water, which is assisted by an emulsifying agent (such as soap).

Asset Management

A systematic approach to selecting the best investment at the right time to maximize the life of the asset being measured.

Average Daily Traffic Counts (ADT)

The average number of vehicles using a roadway in one day.

Aggregate Base

A layer of granular material placed directly below the pavement layer.

Bitumen

Mixtures of hydrocarbons (for example tar) occurring naturally or man-made from coal or petroleum. Used for surfacing roads and for waterproofing.

Bituminous

Of or pertaining to bitumen.

Bituminous Asphalt

A pavement comprising layers of aggregate mixed with a bituminous binder, such as asphalt.

Chip Seal

A surface treatment in which the pavement is sprayed with asphalt emulsion and then immediately covered with aggregate and rolled. Chip seals are used primarily to seal the surface of a pavement with non-load associated cracks and to improve surface friction. This is typically used to extend the life of the pavement surface by sealing out moisture, which can cause major damage to pavement, until major repairs are made. *5-7 Year Service Life*

Cold Milling

Removal of pavement material from the surface of a pavement structure to correct grade and cross section variations and to provide a uniform textured surface in preparation for a HMA overlay.

Crack

A fracture of the pavement surface, not necessarily extending through the entire thickness of the pavement. Cracks generally develop after initial construction of the pavement and may be caused by temperature changes, excess loadings, or excess deflections, which are movements in or under the pavement. (See Working Crack)

Crack Fill

The placement of a hot liquid rubber material into cracks to keep water and other matter out of the crack and the underlying pavement layers. If it is a working crack, additional preparation is required prior to filling the crack. *1-3 Year Service Life*

FDR

FDR stands for Full Depth Reclamation. (See Stabilization)

Fog Seal

A light application of asphalt emulsion diluted with water and applied to the surface of an asphalt pavement or recent chip seal. When applied over a recent chip seal, the fog seal reduces dust and locks in aggregate. *1-3 Year Service Life*

Frost Heave

A process in which the ground freezes and thaws, creating potholes.

Gravel Road Resurfacing

A surface treatment to gravel roads that adds a uniform layer of processed gravel or crushed limestone to an existing road.

Hot Mix Asphalt (HMA)

A carefully controlled mixture of asphalt binder and well-graded, high-quality aggregate thoroughly compacted into a uniform density.

HMA Overlay

The application of HMA on top of an existing pavement. *10-15 Year Service Life*

HMA Paving

The application of HMA on top of an aggregate base. *15-20 Year Service Life*

HMA Wedge

A repair patch placed by a paving machine that varies in depth and length.

Hydroseeding

A planting process that uses a slurry of grass seed, fertilizer and mulch.

Local Roads

County roads that are not classified as primary roads in the county road system. HCRC maintains 849 miles of these roads.

Michigan Transportation Fund (MTF)

A fund that collects and distributes money for transportation in Michigan.

Michigan Transportation Fund Act

Also known as Public Act 51 of 1951, as amended governs the created Michigan Transportation Fund (MTF) into which specific transportation taxes are deposited, prescribes how those revenues are to be distributed and the purposes for which they can be spent. It also establishes jurisdictional road networks and sets priorities for the use of transportation revenues.

Mineral Brine Application

Used for soil stabilization and dust suppression on gravel roads.

PASER

PASER stands for Pavement Surface Evaluation and Rating. The PASER system is a tool to rate the current surface condition of asphalt roads.

Patch

Repair of a localized defect in the pavement surface.

Potholes

A hole in the pavement surface, commonly caused by moisture.

Preservation

Structural improvement roadwork, including placing a hard surface on a gravel road, reconstructing an existing road or bridge, resurfacing a road with a HMA overlay, or installing new culverts or catch basins.

Preventive Maintenance

Treatments to an existing road system that preserves or improves the condition of the system without significantly increasing structural capacity. Roadwork includes chip seal, crack fill, and HMA wedging.

Pre-Treating Asphalt Roads

Liquid calcium chloride is applied to the paved roads in the winter prior to a snow or ice event. This is a proactive approach to clearing off roads. As ice or snow falls, the moisture activates the application and creates a brine that allows us to blade off the snow or ice easier.

Primary Roads

Major roads within the county road system in Hillsdale County. Primary roads include 379 miles of roadway.

Pulverizing/Pulverization

A recycling process that grinds existing asphalt in place and blends it with the underlying materials to form a quality aggregate base in preparation for HMA paving.

Reconstruction

Removing the existing road surface and subbase and replacing it with materials of a thickness that conform to current standards for pavement design. Vertical and horizontal alignment, drainage improvements, and tree removal are also factors of reconstruction. *15-25 Year Service Life*

Reflective Cracking

A type of asphalt pavement damage that occurs when a crack in the underlying pavement extends into an asphalt overlay.

Rehabilitation

Structural enhancements that extend the service life of an existing pavement and/or improve its load carrying capability. Rehabilitation techniques include restoration treatments and structural overlays. *10-15 Year Service Life*

Resurfacing

Placing new bituminous pavement material HMA over existing pavement. Shoulder material is added to match the elevation of the new pavement. 10-15 Year Service Life

Right-of-Way (ROW)

Land and/or property devoted to transportation and public utility purposes.

RoadSoft

Road data geographic information systems software used to compile and report condition assessments. RoadSoft was developed by Michigan Technological University for all road agencies in Michigan.

Routine Maintenance

Roadwork, including winter maintenance, pothole filling, roadside mowing, pavement marking, traffic signal maintenance, dust control, gravel road grading, guardrail repair, minor drainage corrections, etc.

RUC

RUC stands for Road Usage Charge. It is an alternative funding mechanism to support road maintenance and construction. The motorists pay for the use of the roadway network based upon miles traveled. Also referred to as Vehicle Miles Traveled (VMT) or Mileage Based User Fees (MBUF).

Sealant

A material that has adhesive and cohesive properties to seal joints, cracks or other various openings against the entrance or passage of water or other debris in pavements.

Seasonal Weight Restrictions

Limits on the weight and speed of vehicles during the spring thaw.

Shoulder Removal

The process of removing excess material from the shoulder of a road. This is done to fix high shoulders, which can cause drainage issues and safety hazards.

Shoulder Replacement

Placing a layer of aggregate along the edge of the asphalt pavement.

Speed Study

The speed study determines the 85th percentile speed at that location. This means 85% of the motorists are driving at or below this speed.

Stabilizing/Stabilization

A recycling process that grinds existing asphalt in place and blends it with the underlying materials with the addition of an additive to produce a homogeneous base layer with enhanced characteristics for strength, stability and durability.

State Trunklines

Any road owned by the Michigan Department of Transportation MDOT (i.e. M-99, M-49, M-34, and portions of US-12 and US-127). The HCRC performs routine maintenance on 192 lane miles of roads for MDOT within Hillsdale County.

Subgrade

The native soil underneath the road.

Subbase

The layer of aggregate materials on top of the subgrade.

Surface Course

The upper layer of the road.

Traffic Volumes

The actual number of vehicles passing a given point.

Underseal & HMA Overlay

An application of a chip seal prior to an HMA overlay. The underseal treatment provides a membrane to stop intrusion of moisture and significantly reduce reflective cracking.

Urban Area

An urban area is a designation defined by the U.S. Bureau of the Census as an area located outside of an urbanized area with a population over 5,000.

Winter Maintenance

The process of applying salt and sand, as well as plowing snow and ice on roadways. The HCRC does not have a bare pavement policy.

Working Crack

A crack in a pavement that changes, becoming narrower or wider under different temperature conditions. A working crack develops through movement in or under the pavement.