Checking Mix Type

Step 1. Count tractor-trailers and single unit trucks for one "representative" hour. Calculate the "hourly ESALs" by the following:

$$Hourly\ ESALs = (tractor\text{-}trailer\ count)+((single\ unit\ count)\div3)$$

Step 2. Check the ***Hourly ESAL Table***.

Hourly ESALs	Mix Level
40 or less	S9.5B
More than 40	S9.5C

Notes:
- S4.75A is a pavement preservation treatment to keep good roads in good condition. It can be used to fill ruts and for leveling. Placing this mix on a road in less than good condition is not cost effective.
- S9.5D is normally used for Interstate-level traffic and requires an MTV for placement. For guidance on the use of this mix type contact M&T-Pavement Design Section.

Step 3. Determine the thickness of the existing pavement.
Then check the ***Pavement Thickness Table***.

Existing Pavement Thickness	Surface Mix Level
7" or less"	B
More than 7"	C

Notes:
- Each inch of ABC equals ½ inch of asphalt.
- Intermediate mixes can be placed on thinner pavements than surface mixes.
- If the condition of the pavement is poor, thicker pavement is required.

Step 4. Select the lower of the mixes indicated by the two charts.

<u>Remember:</u>
- These are very rough guidelines.
- Always consider the condition of the existing pavement and the quality of the subgrade.
- Consider increasing the Mix Level for roads with heavy truck traffic (industrial sites, landfills, quarries, distribution centers, etc.) or slow-moving truck traffic (ramps, sharp curves, intersection approaches)
- These guidelines should not be used to make changes to the plans immediately. Use these guidelines to raise questions on Mix Type Selection with the Resident Engineer, Pavement Construction Engineer, or M&T-Pavement Design.

Recommended Treatment of Distress

Pavement Distress Definitions

Alligator Cracking
- o **Light:** Longitudinal disconnected hairline cracks about 1/8 inch wide running parallel to each other; initially may be only a single crack in the wheel path or edge of pavement but could also look like an alligator pattern.
- o **Moderate:** Longitudinal cracks in wheel path(s) or edge of pavement forming an alligator pattern; cracks may be slightly spalled and are 1/4 inch wide.
- o **Severe:** Cracking has progressed so that pieces appear loose with severely spalled edges; cracks are about 3/8 to 1/2 inch wide or greater; potholes may be present.

Transverse Cracking
- o **Light:** Cracks are less than 1/4 inch wide and are not spalled; block pattern may not be visible yet; transverse cracks usually 10 to 20 feet apart. Cracks have little or no spalling and joints are usually not bumped up.
- o **Moderate:** Block pattern may be visible with blocks 10 square feet or greater present; cracks are 1/4 inch to less than 1/2 inch wide; cracks may or may not be spalled; transverse cracks usually 5 to 20 feet apart. Joints may be bumped up 1/2 to 1 inch high.
- o **Severe:** Cracks may be severely spalled with smaller blocks 2 - 10 square feet present; cracks usually about 1/2 inch wide or greater; transverse cracks may be 1 to 2 feet apart throughout portions of the surface. Joints may be bumped up greater than 1 inch high.

Rutting
- o **Light:** Rutting ¼ inch to less than ½ inch deep.
- o **Moderate:** Rutting ½ inch to less than 1 inch deep.
- o **Severe:** Rutting 1 inch or greater.

Recommended Pre-Overlay Treatment

Distress	Light	Moderate	Severe
Alligator Cracking	No Treatment for longitudinal hairline cracks.	Mill and Replace 2.5" to 4"	Full-Depth Patch
Transverse Cracking Isolated	No Treatment	No Treatment	Mill and Replace 2.5" to 4"
Transverse Cracking Block Pattern	No Treatment	Mill and Replace 2.5" to 4"	Mill and Replace 2.5" to 4", (consider Full-Depth Patch)
Rutting	No Treatment	Mill, or Mill and Replace, or Leveling Course	Mill, or Mill and Replace, or Leveling Course

General Guidance
- • Don't mill more than half the thickness of the existing asphalt.
- • If half or more of a segment of the project requires treatment, treat it all.
- • No treatment may lead to compaction difficulties, and/or poor long-term performance.