

Pavement Preservation Selection Tool for Interstate Maintenance Funding

Steps: 1. Determine Eligibility

Roadway must be on the Interstate System (business routes, future routes and alternate routes do not qualify). And is the Roadway candidate on another program (like the Transportation Improvement Program)? A roadway must NOT be on another major program with established funding to qualify.

If pavement is jointed concrete, does it have Alkali Silica Reactivity distress? Alkali-silica reactivity (ASR) is a material related distress that results from the formation of expansive gels around reactive aggregate in the presence of high alkali cement and moisture. The damage is progressive, usually beginning around the joints in jointed concrete and resulting in extensive cracking. Projects with ASR are not good candidates for pavement preservation and should be added to the Transportation Improvement Program. If a project has ASR, it is not recommended for this funding source. ASR is determined by a combination of distress identification, sampling, and materials testing carried out by the Pavement Management Unit and the Materials and Tests Laboratory.

2. Preservation and Impact Points.

Use Table 1 to calculate points for the project including its suitability for preservation, length of project, AADT, use of other funds and division priority. Up to 50 points are possible.

To obtain Pavement Condition Rating:

Pavement Management Unit historical condition lookup (**asphalt only**):
<https://apps.dot.state.nc.us/pmu/Default.aspx>

OR the NCDOT Pavement Management System (**all pavement types**):
<http://www.ncdot.gov/~ams>

To obtain project length:

Pavement Management Unit Geometrics Utility to get county mileposts for beginning and end of project:
<https://apps.dot.state.nc.us/pmu/GeometricsReport.aspx>

OR NCDOT GIS LRS Geometrics (**replacing PMU Geo in Fall 2010**):
<https://dot-jbt02:8443/Lars/Main.jsf>

To obtain AADT:

Traffic Services Unit map lookup:
http://www.ncdot.org/doh/preconstruct/tpb/traffic_survey/

Find the link to the 2002-2008 shapefile and spreadsheet to the right in the products links box.

3. **Select either Table 2 (jointed rigid pavement) or Table 3 (flexible pavement) and calculate technical points based on specific distresses.** Each item has associated with it a possible treatment, although other options can be effective. If the pavement is Continuously Reinforced Concrete Pavement, contact Pavement Management for technical guidance on required repairs. (A table was not developed because of the very limited number of miles of CRC on the system). To obtain IRI, use PMS profile data (call PMU if you need assistance with this):

<http://www.ncdot.gov/~ams>

4. **Total the Preservation and Impact Points with the Technical Points.** These calculations are done for each proposed project to assist in selecting projects that are most suitable for preservation.

Item	Description	Range of Values	Assigned points
1	Pavement Condition Rating in Fair+ to Good Range?	PCR<65	0
		PCR between 65 and 75	10
		PCR between 75 and 90	20
2	Length of Roadway to be treated	<1 mile	1
		1 to 3 miles	2
		>3 miles	5
3	AADT (vehicles per day)	<1000	1
		1000 to 10000	5
		>10000	10
4	Leveraging other funding Sources (% of total project cost from other sources)	>50%	10
		10 to 50%	5
		<10%	1
5	Division Priority (1 is top priority, 2 is second, etc)	>3	1
		2 or 3	5
		1	10

Table 1: Preservation and Impact Points, with maximum of 50 points possible.

Item	Distress	Range	Points	Possible Treatment
1	# Shattered Slabs per mile	>10	0	Replace slab with concrete with dowels
		5 to 9	5	
		<5	10	
2	# of Corner Breaks or other Distress requiring full depth repair per mile	>10	0	Full depth concrete repair.
		5 to 9	5	
		<5	10	
3	Faulting	>0.5"	0	Diamond Grind and UTBWC. Possible dowel bar retrofit.
		0.25 to 0.5"	5	UTBWC overlay
		<0.25"	10	Diamond Grind, Clean and Reseal Joints
4	Joint Condition	good	0	Clean and reseal joints. Minor spall repair
		fair	2	
		poor	5	
5	Spalling (% of slabs with spalls needing repair)	>20%	0	Clean spalled area. Patch with partial depth concrete repair or asphalt.
		10 to 20%	2	
		<10%	5	
6	Slab leveling (total # of slabs needing treatment)	>20	1	Grout of other leveling material
		10 to 20	2	
		<10	5	
7	Sub-slab stabilization (total # of slabs requiring treatment)	>20	1	Foam sub slab stabilization
		10 to 20	2	
		<10	5	

Table 2: Rigid Pavement Technical Items, with maximum of 50 points possible.

Item	Distress or Condition	Range	Points	Possible Treatment
1	Alligator cracking	>40% low or moderate or >10% severe	0	Mill patch alligator cracked areas. For moderate severity longitudinal cracking, crack sealing is effective. Severe alligator cracking may require full depth repair.
		30 to 40% low or moderate or 10% severe	5	
		<30% low or moderate	10	
		None	0	
2	Rutting	>0.75"	0	Mill out rutting layer. Replace asphalt with rut resistant mix. Or use Microsurfacing.
		0.5 to 0.75"	5	
		<0.5"	10	
		None	0	
3	Transverse or Reflection Cracking	>1" wide	1	Crack sealing. Less effective on very wide cracks.
		0.5" to 1.0"	5	
		0.25" to 0.5"	10	
		none	0	
4	Ride Quality (average IRI)	Very Rough >150	2	Spot mill and fill rough areas.
		Rough, 100 to 150	5	One lift overlay
		Good<100	10	Leveling course and surface layer overlay.
5	Surface issues (bleeding, debonding, delamination, raveling (% of surface area))	none	0	No treatment required.
		<5%	5	Treatment depends on specific issue. Usually mill and replace affected area.
		5 to 10%	2	
		>10%	1	
6	Oxidation	None or new	0	Seal or thin overlay.
		intermediate	3	
		severe	5	

Table 3: Flexible Pavement Technical Items, with maximum of 50 points possible.

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