

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA



INTERDEPARTMENTAL CORRESPONDENCE

FILE Pavement Design OFFICE Forest Park, Georgia
DATE September 18, 2013
FROM  Charles A. (Chuck) Hasty, P.E., State Materials Engineer
TO Brent A. Story, P.E., State Design Policy Engineer
SUBJECT **Guidelines for Pavement Sections for Minor Projects - Addendum**

Attached for your information and routing for approval are revised guidelines for pavement sections for minor projects. The guidelines are applicable for all non-interstate roads with an average daily traffic volume equal or less than 10,000 vehicles per day **and** a truck percentage equal to or less than 10 percent. In addition, the guidelines should be used for pavement work constructed by permit within Georgia Department of Transportation-owned rights of way.

The guidelines, once approved, are for immediate implementation. Pavement designs meeting the minor project guideline criteria shall not require review and approval by the State Pavement Engineer or the Pavement Design Committee. Pavement Evaluation Summary Reports are still required for projects as recommended in the Plan Development Process (PDP).

If additional information is needed, please contact Mr. A.J. Jubran, P.E. at (404) 608-4771 or Mr. Steve Pahnó at (404) 608-4772.

CAH:GEF:AJJ:svp
Attachments

Guidelines for Pavement Sections for Minor Projects
Georgia Map for Regional Factors, Typical Soil Support Values, and 'k' Values

GUIDELINES FOR PAVEMENT SECTIONS FOR MINOR PROJECTS

Criteria for use of the Minor Project Guidelines (MPG):

- Non-interstate roadways that require up to a 20-year design life
- Average Two-Way ADT \leq 10,000 vehicles/day
- 24-hour Truck percentage \leq 10%

The use of these Guidelines requires the following information:

- Traffic data that has been approved by GDOT.
- The Soil Support Value (SSV) and Regional Factor (RF) for the project.
- The calculated Total Daily Loadings (TDL) for each pavement thickness to be designed. The TDL can be calculated manually or by use of the current pavement design software that can be downloaded from the GDOT web site. In the calculation of the TDL, the following conservative values are to be used:
 - 18-kip Representative ESAL Factor = 1.17
 - Lane Distribution Factor (LDF) = 1.0

Example of the Manual Calculation of the Total Daily Loadings (or Daily ESALs)

Given:

Initial Two-Way ADT = 8,000 vpd	} Average Two-Way ADT = 10,000 vpd
Final Two-Way ADT = 12,000 vpd	} Average One-Way ADT = 5,000 vpd
24-Hr Trucks = 10%	
LDF = 1.0	} Default
ESAL Factor = 1.17	} Default

TDL = (Average One-Way ADT) * (LDF) * (24-Hr Trucks) * (18-Kip ESAL Factor)

TDL = (5000 vpd) * (1.0) * (0.10) * (1.17)

TDL = 585 vpd (*Note: this is also the maximum TDL possible under these Guidelines.*)

Explanation of the MPG Document

- The Map for RF and Typical SSV provides historical values that have been successfully used in the design of pavement sections by the Department. This map can be used when no Soil Survey Summary has been prepared.
- From Table A, the recommended MPG Section is obtained given the SSV, RF, and calculated TDL. For example, the recommended section for a road with a SSV = 4.0, RF = 1.7, and calculated TDL = 400 vpd is MPG Section B-10.
- Table B indicates that MPG Section B-10 is equivalent to an asphaltic concrete pavement thickness of 7.25 inches. The hyphenated number indicates the recommended graded aggregate base (GAB) thickness, which is 10 inches in this example.
- Note that there is no MPG Section for an 8.25-inch asphaltic concrete pavement because of construction issues, which make construction of a 5-inch thick layer of 25mm Superpave problematic. Instead, an additional two inches of GAB is substituted for the 5th inch of asphaltic concrete.

**GUIDELINES FOR PAVEMENT SECTIONS
FOR MINOR PROJECTS**

Soil Support Value	Regional Factor	Design Average Total Daily Loadings	MPG Section
4.5	1.6	< 265	A-8
		266 to 430	B-8
		431 to 585	B-10
4.0	1.4 to 1.7	< 160	A-8
		161 to 260	B-8
		261 to 415	B-10
		416 to 585	C-8
3.5	1.4 to 1.6	< 190	A-10
		191 to 295	B-10
		296 to 460	B-12
		461 to 585	C-10
3.0	1.5 to 1.8	< 110	A-10
		111 to 170	B-10
		171 to 265	B-12
		266 to 410	C-10
		411 to 585	D-10
	2.0 to 2.4	< 80	A-10
		81 to 130	B-10
		131 to 200	B-12
		201 to 305	C-10
		306 to 462	D-10
2.5	1.5 to 1.8	< 115	A-12
		116 to 180	B-12
		181 to 275	B-14
		276 to 415	C-12
		416 to 585	D-12
	2.0 to 2.4	< 85	A-12
		86 to 135	B-12
		136 to 205	B-14
		206 to 310	C-12
		311 to 462	D-12
2.0	1.6 to 2.0	< 70	A-12
		71 to 105	B-12
		106 to 160	B-14
		161 to 240	C-12
		241 to 361	D-12

Table A: Minor Project Guideline Sections. Under the MPG Section column, the hyphenated number represents the graded aggregate base (GAB) thickness recommended for construction. For example, MPG Section D-12 indicates that 12 inches of GAB are recommended.

**GUIDELINES FOR PAVEMENT SECTIONS
FOR MINOR PROJECTS**

MPG Section Code	Total Asphaltic Concrete Thickness (inches)	9.5mm SP *	19mm SP	25mm SP
A	6.25	1.25	2	3
B	7.25	1.25	2	4
C	9.25	1.25	2	6
D	10.25	1.25	2	7

Table B: MPG Section Codes for Asphaltic Concrete Pavement Thicknesses

- * Place 9.5mm SP, Type I when $ADT < 2,000$ vpd
- Place 9.5mm SP, Type II when $2,000 \text{ vpd} \leq ADT < 10,000$ vpd

Georgia Map Showing Regional Factors (RF), Typical Soil Support Values (SSV) and 'k'-Values

