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RESEARCH UPDATE

Update: U96-25

**PERFORMANCE GRADE ASPHALT CEMENT**

**REFERENCE:** Work Plan 95-R-16, Report U96-4

**HISTORY:**

In 1995, three projects were completed using a high stability SHRP Performance Grade 70-28 asphalt cement in hopes of preventing or delaying extensive rutting. The depth of the top course on each of these projects was 40 mm. The projects included:

Essex Junction, NH 9542(1)S, beginning at MM 1.60 on VT 15 in Essex Junction and extending easterly 1.04 km to MM 2.249. The 1994 ADT was 13550.

South Burlington, NH 9552(1)S, beginning at MM 0.517 on US 2 in South Burlington and extending easterly 2.85 km to MM 2.289. The 1994 ADT was 25604.

Middlebury, NH 9545(1)S, beginning at MM 4.264 on US 7 in Middlebury and extending northerly 2.33 km to MM 5.712. The 1994 ADT was 11984.

More detailed information in regard to project location and design can be found in Report U96-4.

**SURVEY INFORMATION:**

All test sites were surveyed in October of 1996. The results of this survey are presented in the table below.

AVERAGE RUT DEPTH	PRECONSTRUCTION (1995)	ONE YEAR (1996)
ESSEX JUNCTION	16 mm	4.5 mm
SOUTH BURLINGTON	22 mm	4.8 mm
MIDDLEBURY	30 mm	2.5 mm

In Middlebury (single lane test sites) ruts were notably deeper in the right wheel path, (averaging 4 mm) than in the left wheel path (averaging 1 mm). Ruts in Essex Junction are following a similar trend with ruts averaging 7 mm in the right-hand, or turning lane, and 2 mm in the left-hand, or travel lane. Ruts on all four Williston Road test sites are forming in a random pattern, averaging 5 mm overall. These results indicate above average rut depths for a first year post-construction survey.

**FOLLOW-UP:** All three projects will be inspected annually to determine if the high stability binder and mix can better resist rutting.