Developing Tools for Local Agencies in Minnesota: Guidelines for Superpave for Low Volume Roads

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Abstract

In 2003, the Minnesota Department of Transportation initiated a project to develop guidelines for the use of Superpave/Gyratory mix designs on low volume roadways. Their goal was to provide local agencies in the state with the tools they would need to make increased use of Superpave mix designs, with the ultimate goal of eventually doing away with Marshall mixes entirely. This paper describes the guidelines and the key elements they include. Critical features to include in such guidelines are discussed. The paper also summarizes how the guidelines were disseminated in an interactive CD format and how they were, in effect, marketed. The success of the program to date is reviewed.

INTRODUCTION

In 2003, the Minnesota Department of Transportation (Mn/DOT) revised its specifications as part of an effort to encourage movement away from the Marshall mix design system towards Superpave mix designs statewide. While most work at the state level used Superpave designs, most local agencies still used Marshall mixes exclusively. The state merged the previously separate Marshall and Superpave mix specifications into one, the 2360 Combined specification. (1) The ultimate goal is to eventually eliminate Marshall designs entirely and support only one mix design system.

Mn/DOT recognized the need to provide resources to local agencies to aid them in making this transition. To this end, they initiated a project in 2003 to develop guidelines for using gyratory (Superpave) mixtures on low volume roads at the local government level. The North Central Superpave Center (NCSC) was selected to develop the guidelines and training materials for the local agencies.

BACKGROUND

As the use of Superpave mixtures becomes more routine at the state level, local agencies are under increasing pressure to adopt the same mix design system. Contractors and material suppliers do not want to have to maintain two different mix design systems, with differing testing requirements, material specifications and equipment needs. The asphalt binder industry has largely shifted to Performance Graded (PG) binders, so the old asphalt designations that many local agencies are familiar with are no longer available. State specifications, which are widely used by local agencies, are incorporating Superpave mix design and material specifications as well. For many local agencies, however, there is concern about the prospect of switching to Superpave.

In April 2001, nine state departments of transportation in the Northeast met with representatives of industry, the Northeast Asphalt User Producer Group, and the Northeast and North Central Superpave Centers to discuss issues related to implementing Superpave for low volume roads. (2) The discussion focused on local agencies’ perceptions of Superpave and why they were apprehensive about its implementation. The discussions then turned to how to address these concerns. A number of perceptions common to many local agencies were identified, including the following:

- Superpave is for high volume roadways.
- It is a “Super” mix that can cure all ills.
- Superpave is expensive.