Research Project Statement

Fiscal Year: 2005

Project Statement Date: October 15, 2003

Project Number: 0-5091

Title: Analyze Existing Fog Seal Asphalts and Additives

RMC Number: 1

Developed By: Mary Owen, Tyler District (Revised by Tracy Cumby LBB)

<table>
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<tr>
<th>TxDOT Project Personnel</th>
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Duration (# of years): 2

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<th>First Year FY</th>
<th>Total Budget: $</th>
<th>Second Year FY</th>
<th>Additional FYs</th>
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With the Performance Grading of our asphalts, the asphalt industry has a better understanding of the additives and agents available and the performance characteristics when used in the department’s more traditional surfacing treatments, i.e., thin asphalt concrete overlays and one course surface treatments. Due to the increased use of fog seal as a tool to better maintain our roadways, it has become apparent that fog seal material can be improved. New rejuvenating materials and additives have become available since Research Report 1156-1F was published in 1991. Project 1156-1F was a two year study conducted by TTI (Sept. 1987-Sept. 1990) to determine the effectiveness of fog seals and rejuvenators. Additional limited field trials have been conducted on fog seal products that are designed as maltene rejuvenators. Because different materials affect the performance of a fog seal and the rejuvenating properties on the existing pavement, this project would determine which asphalts and additives are best suited to TX-DOT’s needs. To accomplish this, the project would include as a minimum the following tasks:

- Perform a literature review and a survey of state DOT’s and TxDOT districts to determine current practices, as well as assessment of the fog seal material types they currently utilize and their rated performance.
- Conduct laboratory evaluation of existing fog seal binders to develop an inventory of physical properties and durability behavior.
- Conduct field trials of fog seals on existing pavements using the various binders that are available, and document the test sections and immediate results. This would necessitate sampling of the pavement before and after the fog seal is applied to determine the extent of rejuvenation that occurs.
- Monitor the performance of the test sections for one additional season.
- Develop a set of suggested specifications that address the properties that appear to be most important for fog seal performance.

The completed synthesis will determine which asphalt/additive combinations would best aid in the maintenance of asphalt pavement surfaces and enable Highway Maintenance Managers to make sound decisions regarding fog seal treatments.

Deliverable Products And Reports:
1. Report of the literature review and survey showing the types of fog seal materials used by other states and TxDOT Districts and the stated advantages or disadvantages for each.
2. Report of the physical and durability properties of fog seal binders evaluated.
3. Reports of the details of the test sections, to be delivered in several phases:
   - A summary of the test section locations, relevant data about the pavements to be treated, and binders to be used.
   - A summary of the test section installation and initial observations.
   - A summary of observations of the test sections after a season of monitoring.
4. The following products should be included as minimum:
   - Specifications for the binder materials used in fog seals.
   - Guidelines for the application of fog seal (when and how to apply them)
5. Other reports normally required by RTI, including research performed, findings and recommendations.
6. Project Summary Report concisely outlining the research, findings and recommendations for implementation.

**Implementation:**
Recommendations from this project would be verified by Materials and Test Section, and distributed to all District Maintenance personnel. Recommendations from the Maintenance Division encouraging the use of rejuvenating fog seals as a cost effective means of maintaining asphalt pavements (based on findings).

**Pre-proposal Meeting:**  ☒ Yes  ☐ No  Thursday, February 19, 2004, 3:00 p.m. to 4:00 p.m. at 4000 Jackson Avenue, Bldg. 1, Austin, TX in the San Jacinto Conference Room, 3rd floor. Teleconferencing is available.

**Sole-Source Project:**  ☐ Yes  ☒ No

**Additional Information:**  None

**Proposal Submission:**
- Proposals are required to be submitted in both hard copy (4 copies) and PDF format (1 PDF file per proposal). Both formats are used within TxDOT for evaluating the proposals and **must** contain identical information.
- The “Background and Significance” portion of the proposal should be limited to 10 pages.
- All proposals from researchers should be sent directly to your university’s Research Liaison for submission to RTI. The Research Liaison is TxDOT’s official contact with the university.

**Deadlines**
(for RTI use only):
1. All individuals interested in proposing are encouraged to contact the PC/PD by February 12, 2004.
2. Proposals are due to RTI by 4:00 p.m. CST on Wednesday, March 24, 2004.