Identifying Number MPC-359

Project Title:

Regional Roadway Surface Management Guidance Documents

University:

North Dakota State University

Principal Investigator:

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Description of the Problem:

The MPC, with sponsorship from the FHWA and aided by all of the Local Technical Assistance Program (LTAP) centers in each of the regional states (CO, MT, ND, SD, WY and UT) as well as two Tribal Technical Assistance Program (TTAP) at Colorado State University and the Northern Plains TTAP center in Bismarck, ND conducted a very successful workshop on Roadway Surface Management (RSM) for rural, local, and small urban jurisdictions in the region. This workshop was conducted on November 2 and 3, 2009 and using the facilities of the Transportation Learning Network (TLN) the MPC brought together approximately 19 sites in six states. In total, nearly 120 attendees received the presentations, including 10 formal presentations made from seven different sites.

During the development of this workshop, two activities were undertaken in the furtherance of assessing and understanding the needs of small urban, local and rural communities and assuring the information to be given in the workshop was the most appropriate for them. The first was development of a survey by the ND LTAP and distribution of the survey by the LTAPs of MT, ND, SD and WY. This survey resulted in around 120 jurisdictions responding from counties, and small urban areas with populations of less than 5,000, between 5,000 and 50,000, and greater than 50,000. The findings with respect to RSM were:

There exists greater experience with RSM than anticipated;

- Overall, more than half of the responding jurisdictions have some experience with RSM, but the proportion of respondents with experience decreases with jurisdiction population;

- Respondents showed a positive desire for RSM, but again that desire lessens with a decrease in jurisdictions' population;

- With respect to barriers that jurisdictions encounter to practicing RSM, an array of potential barriers was presented (see table below). For the potential barriers of Tech Support, Knowledge, Hardware, Software, and Data Collection, all of which relate to the availability of guidance aimed at their needs and a recognition of the lack of technology available to them 68 % and 73% of the respondents stated that these barriers are strong or moderate barriers, respectively, to them adopting RSM while only 53% thought these presented little or no barrier to adoption. This relationship holds fairly constant irrespective of jurisdiction size.

Barriers-All Jurisdictions	Little/None	Moderate	Strong	Don't Know
Lack of Staff	24	40	52	2
Tech Support	39	47	28	3
Knowledge	32	57	26	1
Hardware	54	33	26	4
Software	28	45	42	7
Data Collection	14	33	64	4
Liability	58	34	10	15
No Benefit	66	26	5	16
Other	0	1	0	3

The other activity undertaken involved the Northern Plains Tribal Technical Assistance Program, with the assistance of the other six Tribal Technical Assistance Programs conducting a phone and email survey of Bureau of Indian Affairs offices and Tribal Transportation offices to determine the extent that RSM was being used.

The result of this survey was, according to the principal conducting the survey and Director of the Northern Plains TTAP center, Dennis Trusty: ". . . none of the responders to the survey had a formal Roadway Surface Management System in use. Several of the Tribal responders were working to get a formal

system in place and had begun collecting data. One of these Tribes owned Roadway Surface Management software but need to convert their Excel data files into a format the management software can use." Moreover, Mr. Trusty found: "The BIA Regional Engineers stated that they did not have a formal Roadway Surface Management System in use."

Technology Transfer Objectives:

Three technical reports were prepared for the South Dakota Department of Transportation (SD DOT) and published in 1995 on phases of RSM. Combined, these reports put forth a solidly based, fundamental, and low-tech approach to RSM that has been successfully utilized in several South Dakota counties. The goal of this project is to subject these reports to contemporary peer review, and repackage them for ready use by county, small urban, rural, and tribal managers and engineers who are charged with the responsibility for fiscal distribution of public funds to the preservation of the roadway surface management.

Approach / Methods:

The nomination of suitably experienced practitioners from each of the regional states and at least one Tribe will be solicited from the regional LTAP and TTAP centers. The Principal Investigators will then contract with each of these to review the existing SD DOT reports with the purpose of supplying new information and updating wording or concepts more suited to contemporary users. Their comments and suggestions will then be combined to produce a new report(s) that meet the needs and strike down the barriers facing the target audience. The report(s) will be further subjected to review by selected MPC advisors and made ready for reproduction and distribution.

MPC Critical Issues Addressed:

USDOT Strategic Objective: Infrastructure Management and Environmental Stewardship

Critical MPC Research Issues:

- Traffic Operations and Management (11)
- Infrastructure Financing (12)
- Improved Pricing Strategies (13)
- Improved Infrastructure Design (14)
- Infrastructure Longevity (15)
- Economic Analysis of Investments and Impacts (18)
- Integrated Asset Management Systems (19)

Contributions/Potential Applications of Research:

As show in the surveys conducted in preparation of the RSM workshop, there exist significant barriers to the acceptance and practice of RSM in the region. This work would result in a product that has direct application to reducing those barriers. And, if coupled with follow-on workshops, has the potential to encourage a great many jurisdictions that would otherwise be left behind to commence a RSM program.

Potential Technology Transfer Benefits:

Availability of these reports and the processes and procedures they contain will provide every small urban, rural, local and Tribal road agency in the region with a clear methodology to begin RSM that is tailored to their needs.

Time Duration:

July 1, 2010 – June 30, 2011

Total Project Cost:

$14,350

MPC Funds Requested:

$10,000

Source of Matching Funds:
$ 4,350University Contribution NDSU

TRB Keywords: Pavement, pavement management, asset management, highway system, capital investment, highway infrastructure, preserving highways, preservation, pavement infrastructure