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| **UTC Project Information** | |
| Project Title | MPC-396 – Extent, Severity, and Location of Chip Seal Loss on the South Dakota State Road Network |
| University | South Dakota State University |
| Principal Investigator | Allen Jones, PE, PhD |
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| Funding Agencies | USDOT, Research and Innovative Technology Administration |
| Agency ID or Contract Number | DTRT12-G-UTC08 |
| Project Cost | $48,779 |
| Start and End Dates | January 1, 2012 – December 31, 2013 |
| Project Duration | 2 Years |
| Brief Description of Research Project | The South Dakota Department of Transportation (SDDOT) typically applies chip seal surface treatments to non-Interstate asphalt pavements within two years of paving and successively when needed. Both experience and the literature have shown that chip seals provide a new wearing course, help extend pavement life by as much as five years or more, increase skid resistance, and increase performance (Raza, 1994). Low-cost chip sealing is an essential treatment to preserve the state road network.  Research Project 1999-09: "Interstate Asphalt Pavement Maintenance" (Wade et al, 2001) recommended standardized practices to improve the design and construction of chip seals by the SDDOT. However, in recent years, some chip seals have not performed adequately after one season of service. SDDOT does not record surface treatment loss as a distress in its pavement management database, therefore the location, extent, and severity of chip seal loss on the state road network is unknown.  It was originally assumed that snowplows were removing the chip seals during winter maintenance activities. Chips seals appeared to be scraped off to varying degrees, ranging from very little along centerline to all material being removed from the roadway. However, chip seal loss could be caused from multiple mechanisms or possibilities. These could range from construction methods, date of placement, environmental conditions during and after placement, materials, winter maintenance activities, or design of the chip seal. To date only anecdotal evidence exists to support any conclusion.  If the chip seals are damaged every year, pavements do not benefit from added years of life as well as the lost resources from material loss. Determining the location, extent, and severity of chip seal loss on the state road network will allow SDDOT to determine if additional measures need to be implemented to mitigate this problem and to save resources by continuing to preserve and maintain the existing state road network. |
| Describe Implementation of Research Outcomes (or why not implemented)  Place Any Photos Here |  |
| Impacts/Benefits of Implementation  (actual, not anticipated) |  |
| Web Links   * Reports * Project Website |  |