## UTC Project Information

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| Project Title | MPC-689 – Effectiveness of Sustainable Asphalt Recycling Agents |
| University | South Dakota State University |
| Principal Investigator | Rouzbeh Ghabchi, Ph.D., P.E., A.M.ASCE |
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| Funding Source(s) and Amounts Provided (by each agency or organization) | USDOT, Office of the Assistant Secretary for Research and Technology<br>$67,092<br><br>South Dakota State University<br>$67,100 |
| Total Project Cost | $134,192 |
| Agency ID or Contract Number | 69A3551747108 |
| Start and End Dates | May 24, 2022 to July 31, 2023 |
| Brief Description of Research Project | Studies have shown improved resistance to rutting as a result of incorporating Reclaimed Asphalt Pavement (RAP) in Hot-Mix Asphalt (HMA), they have indicated concerns over premature fatigue failure and thermal cracking. Hence, many Departments of Transportation (DOTs) do not allow or limit the use of any RAP in the surface course HMA. The use of Asphalt Recycling Agents (ARAs) has been introduced for reducing the brittleness of HMA containing RAP. As a result, the use of a higher amount of RAP in asphalt mixes without compromising their resistance to rutting, fatigue cracking, and thermal cracking, is made theoretically possible. However, the effectiveness of different ARAs in increasing the flexibility of asphalt binder and their effects on the long-term performance of HMA remain unknown. Mainly due to the lack of laboratory and field performance data, a widely accepted specification that can be used to select, approve, or evaluate ARAs is not available. To this end, the proposed study will determine how ARAs affect the rutting and cracking resistance of the asphalt mixes and binders containing RAP. This objective will be achieved by conducting a comprehensive laboratory testing program on asphalt binders and mixes. |
| Describe Implementation of Research Outcomes (or why not implemented)<br><br>Place Any Photos Here | |
| Impacts/Benefits of Implementation (actual, not anticipated) | |

| Web Links<br>    • Reports<br>    • Project Website | |
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