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| **UTC Project Information** |
| Project Title | MPC-587 – Use of Geogrid in Pavement Systems to Provide Longer Service Life and Reduced Maintenance |
| University | University of Utah |
| Principal Investigator | Evert LawtonPedro Romero |
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| Funding Source(s) and Amounts Provided (by each agency or organization) | USDOT, Research and Innovative Technology Administration$40,000Utah Department of Transportation$50,000 |
| Total Project Cost | $90,000 |
| Agency ID or Contract Number | 69A3551747108 |
| Start and End Dates | January 12, 2019 to July 31, 2024 |
| Brief Description of Research Project | In 2010, a section of roadway on Utah SR 10 near Emery, Utah was reconstructed using a geogrid-reinforced pavement system. This project was intended to demonstrate the effectiveness of geogrid in reducing cost, providing longer service life, and reducing long-term maintenance of the pavement system. This roadway carries between 200 to 300 coal trucks per day in each direction. A test section was constructed first to evaluate the effectiveness of four different biaxial geogrids. While this test section has performed well, much of the remaining roadway section has required significant multiple maintenance procedures to keep it functional. The primary objectives of this research project are to evaluate forensically the test section and the rest of the roadway to determine why the test section has performed well but the rest has not; evaluate the performance of each of the four geogrids; determine the benefit, if any, provided by the geogrid to the pavement system; and develop methods to evaluate the use of geogrid on other pavement systems. These objectives will be accomplished by obtaining and evaluating distress data and field construction records; analyzing historical FWD data; performing other field tests to evaluate the engineering properties of the pavement system and subgrade soils; obtaining samples of the asphaltic wearing surface, the supporting soils and the geogrid; conducting various laboratory tests on collected samples to determine their engineering properties; and performing large-scale tests in the University of Utah's 42-inch diameter pipe test setup to compare the performance of each geogrid under controlled testing conditions. |
| Describe Implementation of Research Outcomes (or why not implemented)Place Any Photos Here | None of the expected outcomes have been implemented to date. |
| Impacts/Benefits of Implementation(actual, not anticipated) | The improved understanding of the significant influence of the native subgrades materials and the fill materials on the performance of pavement systems constructed on soft subgrades should result in roadway systems that will perform better and require less long-term maintenance than current practices allow.Proving that the geogrid in this roadway system performed well and helped limit the damage that occurred to the roadway should result in the use of more geogrid-reinforced pavement systems in Utah and significant savings in the long-term cost of the pavement systems constructed using this technology. |
| Web Links* Reports
* Project Website
 | * MPC Research Report – [Forensic Evaluation of Geogrid-Reinforced Flexible Pavement Sections on SR-10 near Emery, Utah](https://www.ugpti.org/resources/reports/details.php?id=1137)
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