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| **UTC Project Information** | |
| Project Title | MPC-562 – Evaluation of Durability and Structural Performance of Concrete with Embedded Inductive Coils |
| University | Utah State University |
| Principal Investigator | Marvin W. Halling, PhD, PE, SE, F.ASCE |
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| Funding Source(s) and Amounts Provided (by each agency or organization) | USDOT, Research and Innovative Technology Administration  $59,733.74  Utah State University  $59,733.74 |
| Total Project Cost | $119,467.48 |
| Agency ID or Contract Number | 69A3551747108 |
| Start and End Dates | December 11, 2017 to July 31, 2024 |
| Brief Description of Research Project | A major impediment to public acceptance of electric vehicles is their very limited travel range. An exciting potential solution to this problem is In-Motion Electric Wireless Power Transfer. This proposal addresses initial investigations of the problem from the perspective of the actual civil infrastructure. In order for the future adoption of this technology, roadways will need to be modified to allow the transmission of power to vehicles as they travel. Successful adoption of In-Motion Wireless Power Transfer will require advances in the efficiency of the overall electrical system, improvements in tracking of the actual vehicles, and significant developments in the civil infrastructure. This proposal will address the durability and constructability of coils in Portland cement concrete. The stringent electrical specifications will be monitored while repeated cycles of simulated truck tire loadings are inflicted on constructed specimens. |
| Describe Implementation of Research Outcomes (or why not implemented)  Place Any Photos Here | The findings of this study are being utilized in the test bed projects at the ASPIRE test track at USU and possible future applications in pilot projects in several states. |
| Impacts/Benefits of Implementation  (actual, not anticipated) | This study is early work in the many electrical architectures that may find their way into actual charging applications. The findings regarding increased concrete durability are important for future work in this area. |
| Web Links   * Reports * Project Website | * MPC Final Report – [Evaluation of Durability and Structural Performance of Concrete with Embedded Inductive Coils](https://www.ugpti.org/resources/reports/details.php?id=1198) |