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| **UTC Project Information** | |
| Project Title | MPC-510 – Business and Commute Optimization System: Development and Denver-Based Case Study |
| University | University of Colorado Denver, Colorado State University |
| Principal Investigator | Caroline M. Clevenger  Moatassem Abdallah  Mehmet E. Ozbek |
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| Funding Agencies | Funding Agencies USDOT, Research and Innovative Technology Administration |
| Agency ID or Contract Number | DTRT13-G-UTC38 |
| Project Cost | $50,000 CU Denver  $9,015 CSU |
| Start and End Dates | September 30, 2016 to September 30, 2018 |
| Project Duration | September 30, 2016 to September 30, 2018 |
| Brief Description of Research Project | Mitigating traffic congestion and reducing transportation emissions are among the leading goals of most local, regional, national and international agencies. Several guidelines rely primarily on strategies that support: (1) mixed land-use and transit-oriented developments, (2) multimodal transportation systems, and (3) design of active-transportation friendly environments. While these approaches have successfully contributed to the reduction of transportation GHG and air pollutions emissions, this research proposes to implement an innovative system that can add further improvements and provide more effective and individualized action plans. Specifically, this proposal focuses on implementing an innovative system called, Business+ Commute Optimization System (B+COS) to identify the optimal selection of business commute alternatives to minimize negative environmental impacts, commute time, and cost for commuters in Denver and eventually USA. Pilot implementation among student commuters demonstrated potential GHG and air pollution emissions reduction of 24% with only 15 minute commute time flexibility. |
| Describe Implementation of Research Outcomes (or why not implemented)  Place Any Photos Here | A primary outcome of the research will include expansion of the existing capabilities of the developed system, Business+ Commute Optimization System (BCOS), to enable businesses reduce their commute footprints. This system will a) identify the optimum employee commute plan and associated set of employee-specific personalized incentives, and b) quantify the resulting benefits, while taking into account individual employees’ travel limitations (e.g. desired departure times), as well as business budget constraints. Findings are planned to lead to a series of publications that measure and quantify business commute factors and identify individual-specific commute incentives. Such results will prove critical for decision-makers seeking to minimize transportation-related emissions, and improve local and regional air quality. |
| Impacts/Benefits of Implementation  (actual, not anticipated) | To perform such research, we identified a dynamic interdisciplinary, multi-university team including MPC faculty and student researchers from the disciplines of construction management, and construction, transportation and computer science engineering. As such, our team is highly collaborative, uniting faculty from University of Colorado Denver and Colorado State University. Such a collaboration is unique and exemplifies MPC’s vision to “be a leader… in research, interdisciplinary education, workforce development, and technology transfer while serving the unique and critical needs of the Mountain-Plains Region.” |
| Web Links   * Reports * Project Website |  |