

UTC Project Information	
Project Title	MPC-520 – Financial Benefits of Proposed Access Management Treatments
University	South Dakota State University
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Project Duration	September 30, 2013 to September 30, 2018
Brief Description of Research Project	Transportation access management is defined as systematic control of the design, spacing, operation, and locations of street connections, interchanges, driveways, and median openings on the roadway with

the purpose of providing vehicle access while preserving the efficiency and safety of the entire transportation system. Access management is a proven method for maintaining and improving roadway capacity; traffic flow; and the safety of traffic, pedestrians, and bicyclists on rural and urban highways and streets (1). Improvements to operational efficiency and safety reduces transportation costs. Reductions in delay and improvements to traffic flow also reduces vehicle emissions, reducing the environmental impacts of transportation. Research has shown that access management related improvements to traffic operations and safety have a positive impact on the local economy (2).

Access management methods include, but are not limited to, increasing the spacing between signals and intersections, managing access to/egress from driveways, median treatments (including the use of medians, indirect left-turns, etc.), use of frontage roads, providing turn lanes for heavy traffic movements, and land use policies. Each of these methods has safety and operational impacts (leading to financial and other benefits) as well as associated financial costs for implementing the changes and compensation to landowners for lost property or access. The decision of whether to implement a change often depends on the overall cost as well as the comparison of the cost relative to the expected benefits of the change. These benefits include the current and future benefits to both the public and the agency making the changes. Also, the project must fit within the overall budget of the agency making the changes.

Currently, no locally calibrated tool for South Dakota exists that captures the complexity of the current and future public benefits of proposed access management for estimating the financial and other benefits and comparing them with the associated financial costs. The benefits may be related to many local conditions including land use and zoning, roadway type and functional classification, traffic volumes, pedestrian and bicyclist volumes and characteristics, and the locations and other characteristics of access points. Given that many outcomes (i.e., safety and traffic operations) are related to human factors that are often unaccounted for in research, estimates of safety effects and operational changes associated with general access management methods provided in the *Highway Safety Manual* (3) and the *Access Management Manual* (4) may not be applicable in South Dakota. Also, more specific, complete estimates of the effects of access management methods on public benefits that are locally calibrated are desired when making decisions related to the value of the investment.

<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	<p>This study seeks to accomplish the following research objectives:</p> <ol style="list-style-type: none"> 1) Develop and validate a methodology for estimating the benefits to safety, operational efficiency, environment, and economic vitality resulting from proposed access management treatments. 2) Compile and derive data needed to support the benefit estimation methodology. 3) Build, demonstrate, and document a software tool to estimate the benefit of proposed access management improvements.
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	<p>This project will provide funding for two graduate students to work on a research project. It will also provide them with the mentoring of faculty members from both South Dakota State University and Penn State University.</p>
<p>Web Links</p> <ul style="list-style-type: none"> • Reports • Project Website 	