

UTC Project Information	
Project Title	MPC-568 – Mitigation of Flooding-Related Traffic Disruptions with Green Infrastructure Stormwater Management
University	Colorado State University
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Funding Source(s) and Amounts Provided (by each agency or organization)	<p>USDOT, Research and Innovative Technology Administration \$60,000</p> <p>Colorado State University \$60,000</p>
Total Project Cost	\$120,000
Agency ID or Contract Number	69A3551747108
Start and End Dates	June 27, 2018 to July 31, 2022
Brief Description of Research Project	<p>This project focuses on the mitigation of flooding-related traffic disruptions by implementation of green infrastructure stormwater management. Traffic disruptions can be caused during flooding events in urban areas when the existing stormwater management is not effective at stormwater drainage from roadways. Green infrastructure stormwater management uses infiltration and harvest of stormwater to reduce stormwater volumes. Urban roadway flooding will be modeled under the current conditions, as well as under scenarios of green infrastructure implementation. Then, this project will undertake a probabilistic simulation of the effect of green infrastructure implementation on traffic disruptions in a semi-arid urban area in the Front Range of Colorado. This project will quantify the effectiveness of green infrastructure stormwater management for reducing traffic disruptions.</p>

<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	<p>Municipalities who are already adopting green stormwater infrastructure for other purposes may also consider the benefits in reducing roadway flooding. Furthermore, the present project presents a case study and associated methodology that may be used by municipalities who are considering implemented green stormwater infrastructure on how to quantify the roadway flooding reduction benefits.</p>
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	<p>This work can be used to better manage stormwater on roadways and the resulting traffic effects. Current practices mostly implement gray stormwater infrastructure for reducing roadway flooding. This work shows that the emerging and increasingly implemented green stormwater infrastructure (bioretention was used as an example type of green stormwater infrastructure in this project) can also have a benefit in reducing roadway flooding. Roadway flooding for frequent, smaller storm events can lead to common traffic delays with large cumulative effects annually. Green stormwater infrastructure implemented for other purposes also should be considered for the benefits on roadway flooding and traffic impacts.</p>
<p>Web Links</p> <ul style="list-style-type: none"> • Reports • Project Website 	<ul style="list-style-type: none"> • MPC Research Report – Assessing the Use of Dual-drainage Modeling to Determine the Effects of Green Stormwater Infrastructure on Roadway Flooding and Traffic Performance • Project Data Available Through HydroShare • Journal Article – Assessing the Use of Dual-Drainage Modeling to Determine the Effects of Green Stormwater Infrastructure on Roadway Flooding and Traffic Performance • CSU Master Thesis – Assessing the Use of Dual-Drainage Modeling to Determine the Effects of Green Stormwater Infrastructure Networks on Events of Roadway Flooding