Grant Deliverables and Reporting Requirements for UTC Grants

UTC Project Information	
Project Title	Mobility-Aware Integrated Urban Design
University	Cornell University
Principal Investigator	Timur Dogan Samitha Samaranayake
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Funding Source(s) and Amounts Provided (by each agency or organization)	USDOT: $25,000 Non-Federal: $12,500
Total Project Cost	$37,500
Agency ID or Contract Number	Sponsor Source: Federal Government CFDA #: 20.701 Agreement ID: 69A3551747119
Start and End Dates	Start date: 11/22/17 End date: 9/30/18
Brief Description of Research Project	Rapid urbanization, with new construction estimated to be 250 times NYC by 2050, is increasing traffic congestion, pollution and related health threats. This is a worrisome development but also a unique opportunity to improve urban mobility and quality of life. Understanding consequences of urban design choices on mobility, sustainability, and health is a necessity and requires development of a framework that enables such co-design processes. We propose a new design-toolkit to incorporate mobility, sustainability, health, and thermal comfort metrics into urban design projects. Process accuracy and impact is validated in collaboration with leading design practitioners and the NYC Planning Department.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	The project completed all of the proposed milestones as laid out below: • Tool development / data collection 1. *GIS and Big Data to parse urban form, amenities, and population density:* The prototype tool can parse SHP, OSM and GooglePlaces Data. The most commonly used file formats and data sources.

	2. Active transport modeling tool based on (1): *Simple Shortest Path routing and a persona based Walkscore metric has been implemented to allow designers to test the walkability of a design option.* • *Impact - Prototype tool evaluation in industry and education:* The prototype tool has been shared with KPF and was used in several urban design studies by the KPF Urban Interface Group. Further, we implemented the tool in Cornell AAP and CEE classes. • *Conference publication:* A paper was published at SIMAUD 2018, a popular venue for data driven urban design.
Impacts/Benefits of Implementation (actual, not anticipated)	The developed prototypical software allows modelers to co-design mobility and urban design and therefore can lead to informed and therefore better urban design solutions that will, in consequence, positively influence social, economic as well as environmental aspects of our future urban habitats. The tool development and research was done in close collaboration with Kohn Pedersen Fox (KPF), one of the largest urban design firms in the US. Throughout the course of the project several calls and meetings between KPF and Cornell were used to coordinate research and to train KPF employees in using the tools. Even though the software is in an early Beta stage, we managed to make to tool part of KPF's regular urban design tool kit. We are quoting Luc Wilson, senior associate principal at KPF and director of KPF Urban Interface (KPFui): "The proposed tool for Mobility-aware Integrated Urban Design will add a new and readily accessible dimension to the world of integrated urban performance simulation. It will become a common language amongst architecture and urban design professionals, consultants, academics and students around the world, uniting communities that until recently operated in silos."
Web Links • Reports • Project website	Project Website: https://urbano.io Lab Website: https://es.aap.cornell.edu/ http://ctech.cee.cornell.edu/final-project-reports/