

<b>UTC Project Information</b>	
Project Title	MPC-636 – Strategic Deployment of Drone Centers and Fleet Size Planning for Drone Delivery in Utah
University	University of Utah
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Funding Source(s) and Amounts Provided (by each agency or organization)	USDOT, Office of the Assistant Secretary for Research and Technology \$30,000  Utah Department of Transportation \$50,000
Total Project Cost	\$80,000
Agency ID or Contract Number	69A3551747108
Start and End Dates	October 30, 2020 to July 31, 2024
Brief Description of Research Project	In a 2017 report by the RAND corporation, analytical methods for calculating the total energy consumed by a mix of delivery trucks and drones were developed and shown to be highly dependent on the layout of distribution centers as well as distance traveled by delivery vehicles. This suggests that the city layout, i.e., street connectivity and other network parameters, are important considerations for energy-conscious policies. While industry stakeholders must determine the market viability of drone delivery, they are not required to calculate the external and indirect costs that may be associated with this burgeoning industry. Furthermore, the unstructured airspace proposed by some stakeholders can have an undesirable monopolistic effect caused by the computational aspects of this approach. The research proposed here will produce a state-wide drone network, and hence a structured airspace, that can potentially increase the accessibility of the airspace while ensuring a higher degree of safety.
Describe Implementation of Research Outcomes (or why not implemented)  Place Any Photos Here	Overall, the implementation and deployment of the UAAMS was successful. This type of tool is critical for research in this area, as it incorporates the latest software and infrastructure development techniques available. Also shown was the viability of considering the large-scale impacts (e.g., environmental) of advanced air mobility on specific communities by using micro-simulation technology.
Impacts/Benefits of Implementation (actual, not anticipated)	The primary objective is to produce a web-based platform that produces a state-wide airspace network, delivery schedule, and truck/drone fleet mix. A secondary objective is to understand the impact of such

	truck/drone fleet mix model to determine whether such hybrid approach is more cost and energy efficient comparing with the current truck-only delivery model. Overall, this program will provide the state with more clarity about the energy impacts of large-scale drone delivery, as well as a viable airspace network.
Web Links <ul style="list-style-type: none"> <li>• Reports</li> <li>• Project Website</li> </ul>	<ul style="list-style-type: none"> <li>• MPC Final Report – <a href="#">Strategic Deployment of Drone Centers and Fleet Size Planning for Drone Delivery in Utah</a></li> </ul>