CM2 Cooperative Mobility for Competitive Megaregions	**UTC Project Information – Cooperative Mobility for Competitive Megaregions (CM^2)**
Project Title	Examining the Impacts of Land Use on Air Quality in Chicago: Application of Street View Imagery and Hyperlocal Urban Climate
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Funding Source(s) and Amounts Provided (by each agency or organization)	U.S. Department of Transportation:
Total Project Cost	$34,335
Agency ID or Contract Number	US DOT Grant Number: 69A3551747135
Start and End Dates	9/1/2022 – 8/31/2023
Brief Description of Research Project	Cities worldwide have begun installing urban climate sensors to monitor air quality concurrently. Using the city of Chicago, as a case study, this study explored the recently deployed Project Eclipse sensors led by Microsoft. We examined land use impacts on urban air quality measured by sensors. We introduced the application of street view imagery with conventional land use feature extraction typologies. We elaborated a ResNet50 and the decomposition process. Landscape impacts on air quality were measured by looking at feature explanation powers through modeling ensemble regression models. powers from ensemble machine learning regression models. Our regression model showed that urban greenness-related factors from LandSat, land use inventory, and GSV positively impacted air quality even in temporal terms. **Highway and bus stations had negative temporal impacts on air pollution. The North region reported minor traffic congestion; however, GSVs identified them to locate near the roadside with fire escapes, streets, promenades, and bus stations.**
Describe Implementation of Research Outcomes (or why not implemented)	Project has not begun yet, so no outcomes have been realized.
Impacts/Benefits of Implementation (actual, not anticipated)	Project has not begun yet, so no impacts have been realized.
Web Links (to reports, project website, etc.)	N/A