

Vermont Smart Growth, VMT and GHG Research

PROJECT TITLE

Vermont Smart Growth, VMT and GHG Research

STUDY TIMELINE

July 2022 – March 2023

INVESTIGATORS

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KEYWORDS

Smart Growth
Vehicle Miles Travelled
Greenhouse Gas Emissions
Land Use

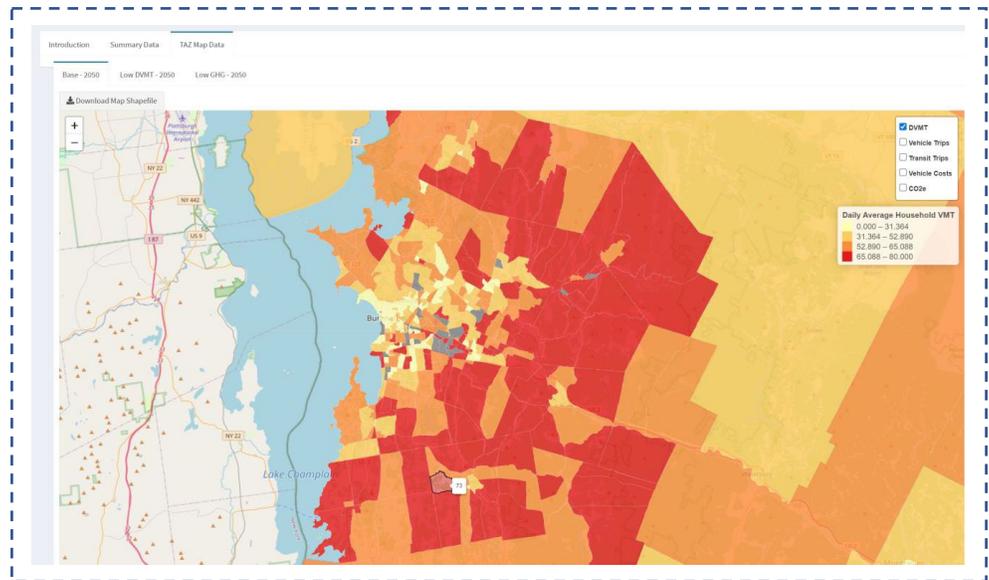
FUNDING

\$140,000

More information about the VTrans Research Program, including additional Fact Sheets, can be found at:
<http://vtrans.vermont.gov/planning/research>

Introduction or Problem Statement

This project will leverage big data to understand how compact, mixed-use development in Vermont affects vehicle miles travelled (VMT), mode share, and greenhouse gas (GHG) emissions compared to more dispersed development patterns. This project will also seek to quantify the co benefits (i.e. health, reduced maintenance costs, and economic activity) of smart growth strategies beyond VMT and GHG emission reductions.



Methodology or Action Taken

The research team will develop a model estimating VMT based on built environment factors across the State of Vermont, using passively collected location data and a database of built environment measures. This model will be linked to downstream models estimating concomitant changes in GHG emissions, health impacts, and other benefits associated with VMT reductions. Finally, the project team, in coordination with stakeholders, will develop and model the impacts of alternative development futures for the state.

Conclusions or Next Steps

The team is just getting underway, and immediate next steps include a scan of the literature linking built environment factors to VMT, developing a spatial database of built environment measures for Vermont, and processing big data to understand baseline VMT across the state.

Potential Impacts and VTrans Benefits

This project will help VTrans and other stakeholders understand how land use policy and future development patterns may help meet GHG emission reductions targets as promulgated in the Vermont Pathways Analysis Report. Further, this project will seek to understand how smart growth development patterns may reduce maintenance costs for VTrans and provide health and economic benefits.