



Traffic Volume Collection & Analysis During COVID-19



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Introduction

In response to COVID-19, VTTrans began using several automated traffic collection methods to gather and report information about traffic volumes at high-priority border crossing locations. Starting April 2020, collection began at 34 locations, using a combination of traffic tubes, RWIS stations and sensor trailers. The goal of this project is to show how this data is collected, processed and made available to SOV decision-makers and the general public.

Next Steps

In order to continue to collection into the foreseeable future, the tube counters will gradually be replaced by more durable and remote access enabled sensor carts and semi-permanent sensors mounted on utility poles, which will improve the speed and efficiency of the data collection and processing cycle.

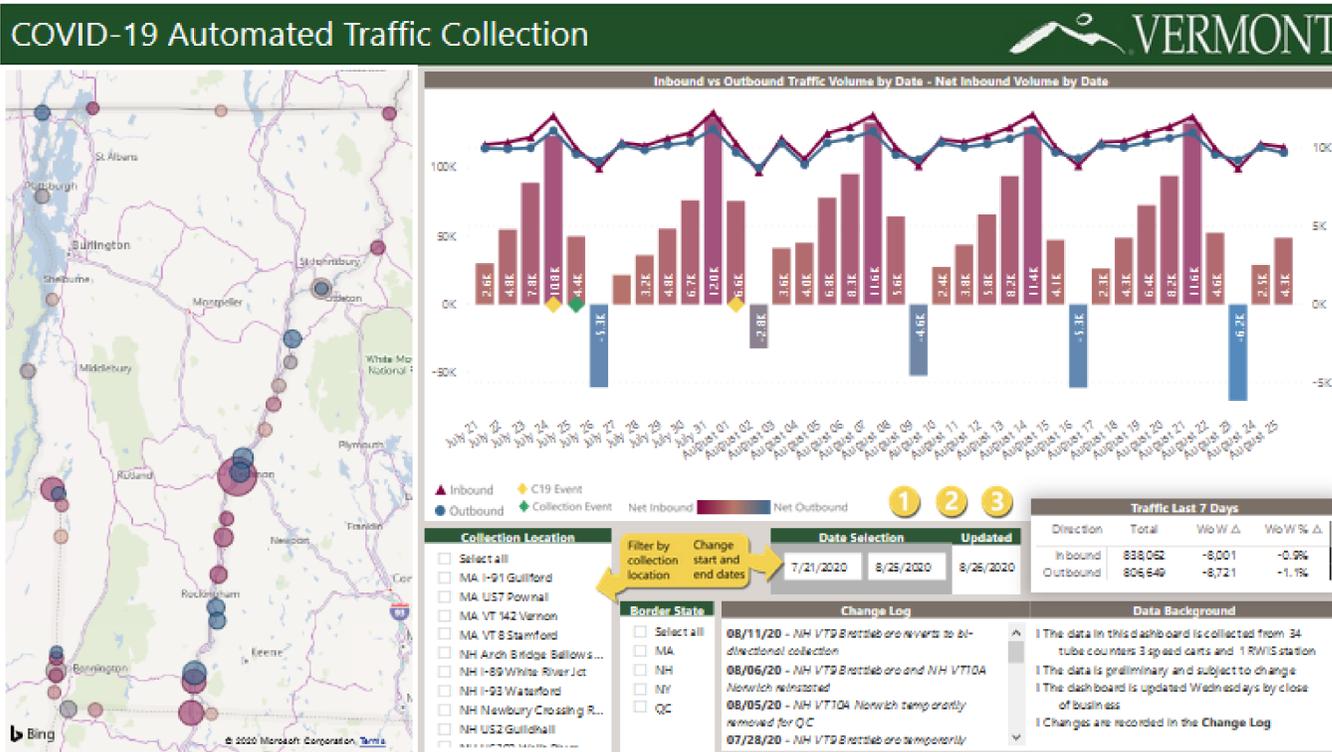


Figure 1. COVID-19 Automated Traffic Collection Dashboard

Methodology

Data captured by tube collectors is gathered by field technicians, uploaded to a centralized SharePoint repository, from which it is then validated and converted into a simple text format before being added to the Power BI data model. Gaps and undercounts in the data are corrected using a basic data imputation model. Data from RWIS stations and sensor trailers is accessed remotely using vendor-provided software, after which it is cleaned and combined using basic Python scripts before being added to the data model.

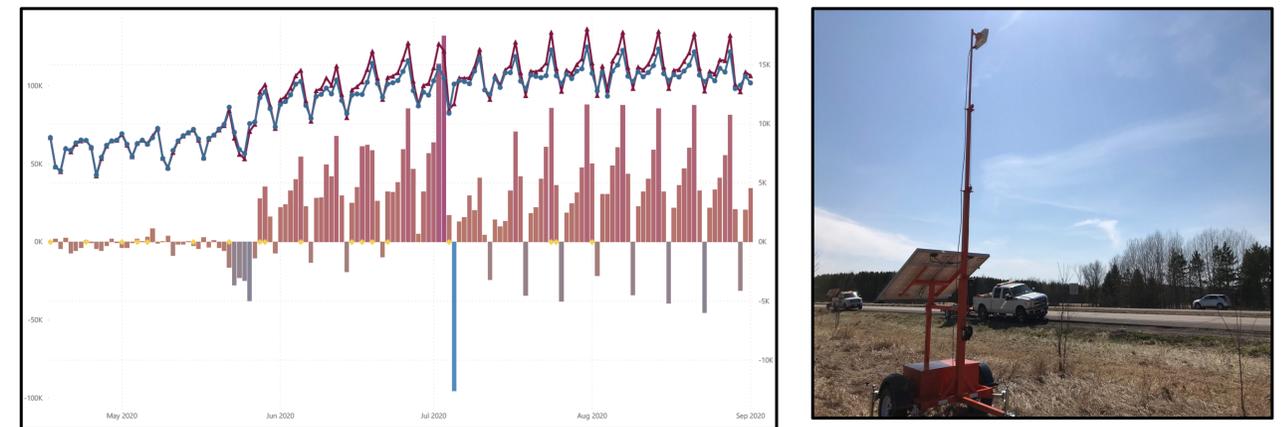


Figure 3. Year-to-Date Border Traffic and Wavetronix sensor trailer example.

Benefits to Vtrans

The data collected and reported through these processes has proven to be valuable to many stakeholders, including state and local officials, departments within VTTrans, as well as other state agencies, researchers, and the public. Outside of the context of COVID-19, the data could be used for analyzing trends in traffic volume, vehicle class distributions and speeds on a granular level.

Acknowledgments

This project has been a major engagement overseen by the Agency of Transportation Incident Command Center and would not have been possible without the help of many people from numerous departments throughout the agency, including the Performance Section, the Maintenance District Offices and the ITS and Traffic Research sections of the Operations & Safety Bureau.

Additional Information

To view more dashboards of traffic data, visit the VTtransparency website:

<https://vtrans.vermont.gov/vtransparency>