

# Vermont Agency of Transportation Unmanned Aircraft Systems

VTrans UAS Team  
Rail and Aviation Bureau



## VTrans UAS – Transportation Applications

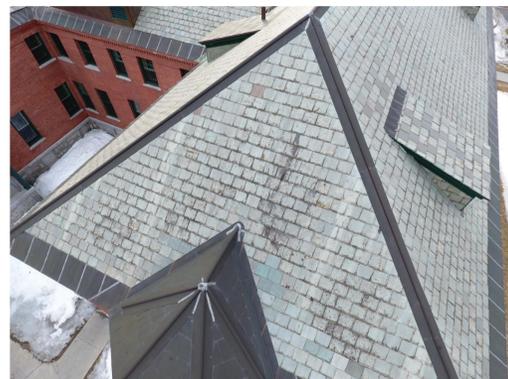
VTrans UAS is in the process of defining its capability to provide support for: emergency response, search and rescue, infrastructure inspection, construction site monitoring, environmental habitat inspection, and remote aerial imagery. VTrans, as well as other state agencies will benefit from the UAS program. VTrans also serves as a resource for public inquiry regarding UAS operations.



3D Point Cloud/Model - VTrans Rail Bridge #114 Chester, VT

## Inter-Agency Cooperation

Any state agency may request a UAS operation to be conducted by the VTrans UAS team. In a state with limited resources, developing the capability to share information and resources is essential. VTrans UAS has flown missions for the Agency of Natural Resources with geological surveys, and Buildings and General Services with a roof inspection of the Waterbury State office complex.



Cotton Brook Landslide, Waterbury, Vermont- for ANR- June, 2019.  
Waterbury State Office Complex Roof Inspection – for BGS- March, 2019.

## Technology Innovation

VTrans UAS can live-stream near real-time imagery into the VTrans Transportation Management Center, as well as the Vermont State Emergency Operations Center. This ability speeds up the transmission of critical information to the state's decision makers.

The pending acquisition of a high-speed imagery processing computer and software suite will enable VTrans to rapidly produce 3D models, point clouds, and geo-rectified ortho-mosaic maps to be used in project support and analysis.



UAS overlay of Colchester, I-89 Bridge 76/77 Rehabilitation project area.

## Future Developments

VTrans UAS will continue to define and improve its capability as a functioning UAS team. Pending acquisitions of four additional UAS platforms will increase the capability of the VTrans UAS team. Additions include; high resolution infrared sensor, 6k cinema grade mapping camera, and upward facing inspection camera. VTrans UAS is taking any opportunity to fly UAS missions for VTrans and other state agencies in efforts to implement an innovative, safe, and efficient technology into every-day industrial applications.

## Acknowledgments

FHWA has afforded VTrans the opportunity to join the UAS community via the STIC Incentive program.

VTrans UAS has graciously accepted expertise and information from many UAS programs, including; Alabama DOT, Delaware DOT, and the UVM Spatial Analysis Lab.