

## 5.4.2

### Vermont Route Logs: Python-driven Map Automation with Straight Line Diagrams

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Straight Line Diagrams, also known as Route Logs, are a key engineering tool used within the Vermont Agency of Transportation (VTrans) to provide a comprehensive one dimensional straight line view of a highway segment and its associated data.

VTrans maintains a significant amount of information on each section of federal aid highway, including intersections, road width, projects, bridges, curves, grades, average daily traffic, crashes, pavement conditions, speed zones, and more. This information is rendered along the straight line view of each route at the appropriate mileage markers using a process known as dynamic segmentation.

The Route Logs have gone through an evolution, starting out as hand-drawn logs, to being generated with CADD, followed by a VBA-based application within ArcGIS 9.3. The VTrans Mapping Unit has recently taken Route Log production to a new level by completely re-engineering the system "in-house," leveraging the Python capabilities integrated with ArcGIS software. The current Route Log System consists of a map template and a suite of Python scripts that automate data pre-processing and Route Log production.

This presentation will provide an overview of the VTrans Route Logs, the creation of the new Route Log System, and technical aspects of this tool. This presentation will also provide a glimpse of where VTrans wishes to take this system in the next phase.