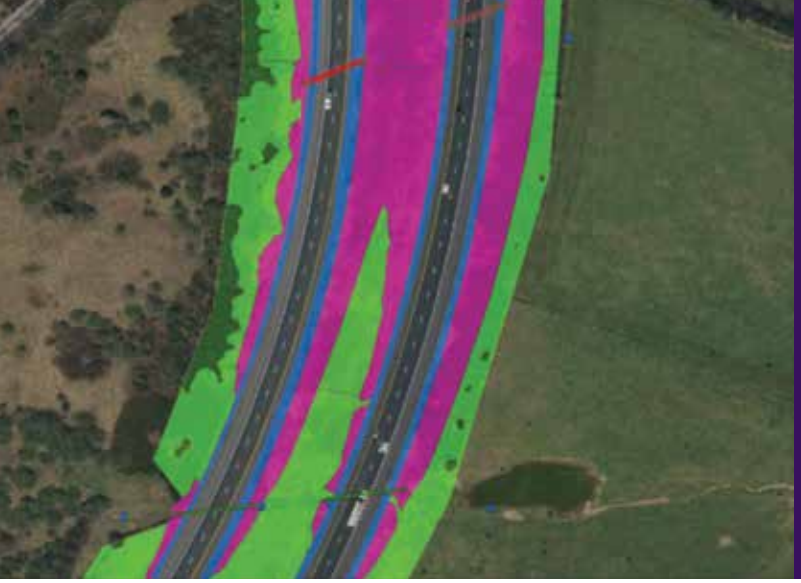

Effectively Scope Mowing Acreage

Leverage Data to Stop Mowing Scope Creep

PROBLEM

VDOT Staunton district lacked verifiable data, leaving them vulnerable to mowing scope creep. As a result, they had no recourse to correct a dramatic increase in mowing costs for approximately 236 centerline miles of the Interstate system in the Staunton District.

SOLUTION

PILLAR helped Staunton District qualify, quantify, and justify their mowing acreage per various mowing scenarios saving hundreds of thousands of dollars per mowing cycle and delivering clear and concise maps for contract monitors and contractors to utilize and follow.

APPROACH

Using mobile LiDAR and our automatic feature extraction tools, PILLAR's experts determined the Virginia Department of Transportation (VDOT) Staunton District's Interstate mowing acreage for all their mowing scenarios. From partial to full width and tractor to slope to hand mowing, we calculated the acreages from the post-processed and extracted LIDAR point cloud. We also produced shape files and corresponding GIS attributes identifying each mowing area for VDOT's database.

The project encompassed the development of mowing acres for approximately 236 centerline miles of the Interstate system in the Staunton District. This included the establishment of Right-of-Way boundaries, mobile LiDAR scans of the interstate for feature extraction and fusion with preexisting aerial LiDAR data, and the development of a multilayered GIS feature set that included mowing acres, guardrails, trees, steep slopes, signs, pavement markings and symbols, delineators, and bridge clearances.

To create an efficient way to extract usable data, PILLAR developed the logic for autonomous classification of the point cloud that differentiated mowing accessibility based on different slope grades and restrictions such as guardrails, signposts, delineators, bridge abutments, headwalls, etc.

We also developed a PDF map book of results detailing mowing acreage for every 1/10 mile of highway shoulder which we delivered to VDOT Staunton to assist with mowing management.

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