

Optimization of VDOT Safety Service Patrols to Improve VDOT Response
to Incidents
(Technical Report)

Drivers in a Driverless Future: The Impact
of Autonomous Vehicles on Paid Drivers
(STS Research Paper)

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by

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Preface

What is the future of driving? Automated driving systems may displace human drivers, with complex implications for employment, safety, sustainability, and social equity.

How may traffic congestion be eased? Crashes exacerbate traffic delays, causing productivity losses. The Virginia Department of Transportation (VDOT) operates a fleet of Safety Service Patrols (SSPs) that assist emergency responders in scene clearance. Managers of the SSP program seek to optimize scheduling of patrollers for safety and congestion relief. The research team developed a genetic-algorithm-based route scheduling algorithm that assigns SSP routes to minimize the total time vehicles are stranded on I-95 in Virginia before an SSP vehicle arrives. The results indicate that a new route schedule may reduce total response time approximately 20 percent.

Developers of autonomous vehicles (AVs) and employers of drivers are reacting differently to autonomous vehicles (AVs) than professional drivers. Truckers, ride sharing drivers, and public transport workers generally fear AVs will displace employment; AV developers and employers, however, generally insist their jobs are safe. Employers stand to benefit from the deployment of AVs at the expense of the drivers.

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