Critical issues with critical infrastructure

Aging infrastructure and an onslaught of motorists have made it increasingly difficult for DOTs to maintain our roadways and keep them safe. This has led to an unwieldy backlog in capital needs, safety issues, and lost time and money for motorists.

The number of people who lost their lives in motor vehicle crashes in 2019 was estimated to be 38,800, a 2% decrease over 2018 figures.1

The average number of hours lost per car crash in 2019 was nearly $8 billion.2

The number of traffic congestion deaths in 2019, attributed to CO2 emissions, was $26.58 billion.3

The average number of hours lost due to traffic congestion in 2019 was 99 hours.4

The percentage by which smart traffic lights could reduce accidents was 70% to 90%.5

The percentage by which smart traffic lights could enable faster commutes was 90%.6

The percentage by which smart traffic lights could reduce emissions was 25%.7

The percentage by which smart traffic lights could reduce CO2 emissions was 90%.8

The percentage by which smart traffic lights could reduce traffic congestion was 21%.9

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How the Adaptive Network Can Help Save America’s Roadways

A safer, more efficient future

ITS devices include high-definition pan-tilt-zoom video cameras, vibration and wear sensors, speed monitors, and digital signage. The data from these devices needs to be transmitted to remote operations centers where it is analyzed and acted upon—often in real time. The goal of these ITS devices is to enable faster, more accurate action that can reduce our costs, decrease traffic congestion, and improve the motorist experience.

The Adaptive Network provides a resilient foundation

Traditional network architecture supporting ITS devices is complex and time-consuming to simplify, scale, and automate today’s ITS and make our roads smarter and safer. It is

A programmable packet and optical infrastructure supports existing bandwidth requirements and can scale to accommodate future capacity needs. It also eliminates the need for unused legacy protocols, thus simplifying the network. The infrastructure is accessed and configured via common protocols, thus simplifying the network. The infrastructure is accessed and configured via common

70% to 90% of DOTs have automated highway systems that could reduce accidents.5

90% of states that have ITS services support autonomous vehicle infrastructure in place.7

Software Control and Automation

DOTs can automate network management and control tasks and virtualize network functions through the implementation of Software-Defined Networking (SDN) and Network Functions Virtualization (NFV). SDN and NFV enable an open, vendor-agnostic control plane that can adapt to changing network conditions and traffic patterns. NFV leverages these insights to help DOTs develop smarter, data-driven network policies that enable them to securely adapt to network fluctuations and traffic abnormalities in real time.