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CHALLENGE

The New Hampshire Department of Transportation (NHDOT), upon completion of an advanced traffic management system (ATMS) along the I-93 corridor, sought to expand its multi-faceted approach to managing state roadways by installing another ATMS along the I-95 corridor. NHDOT once again partnered with Green Mountain to design and deploy an ATMS that would improve traffic monitoring and emergency communication along I-95 and, essentially, throughout all major transportation corridors in New Hampshire. One of the crucial challenges the NHDOT sought to overcome was the public safety requirement for fault tolerance and resiliency of ITS networks throughout New Hampshire.

SITUATION

Due to this requirement, the NHDOT was faced with expensive, short-term solutions and the repeated duplication of network devices in order to comply. Green Mountain set out to design a right-fit traffic management solution that would address New Hampshire's challenges now and in the future. As the first project of its kind for the Seacoast, Green Mountain sought to replicate the success of the ATMS installed along I-93. The expanded I-95 ATMS, including field locations along Route 101 and US Route 4, required the installation of strategically located ITS devices that would be controlled by the central Traffic Management Center (TMC) in Concord.

SOLUTION

To support the entire ATMS in southern New Hampshire, Green Mountain integrated the installation of Dynamic Message Signs (DMS), Closed Circuit Television (CCTV) Cameras, and a communications network that enhanced connectivity and response time. Additionally, Green Mountain's strategic network design included Internet Protocol (IP) cameras, DMS, poles and structure erection, security, tie-in to the NHDOT TMC in Concord, and system maintenance and warranty for up to five years. Green Mountain leveraged technologies that achieved both security and resiliency across the ITS network including a VLAN-based, Rapid Spanning Tree Protocol (RSTP) ring at the core of the network. This offers advanced

firewalling and VLAN-based network access control that provides the NHDOT with the security and flexibility to distribute access to critical network data with ease.

RESULT

The result of this project enables the NHDOT to communicate with local municipalities, adjacent states, and media about the traffic operating conditions on I-95, as well as I-93. Through a customized advanced Enterprise Network Management Platform, the NHDOT is able to monitor both wired and wireless network devices incorporated into the I-95 ATMS for optimum performance and results. The new I-95 ATMS will allow the NHDOT to strategically improve the overall quality and safety of travel for all New Hampshire residents, workers, and visitors.

LONG-TERM BENEFITS

The I-95 ATMS has allowed the NHDOT to improve congestion mitigation, incident response, construction management, and work zone safety long-term. Additionally, the statewide networking methodology designed and built by Green Mountain enables the NHDOT to connect parallel network projects to the core network and provides the ability to build a single, fault-tolerant, "meshed" network architecture over time. This robust network infrastructure will reinforce the NHDOT's ability to integrate both wired and wireless technologies throughout New Hampshire.