

Interstate 540

North Carolina, USA



Agency utilizes acclaimed ramp meter solution to enhance freeway operations and driver safety

Q-Free deployed the first four ramp meters in North Carolina to improve traffic flow along the heavily-traveled northern arc of the I-540 in the Raleigh area.

SOLUTION

- ▷ INTELIGHT MAXTIME RM (RAMP METER)
- ▷ INTELIGHT MAXVIEW ATMS

TYPE: RAMP METER

METERED ON-RAMPS: 4

ACTIVATION: SEPTEMBER 2017

About Interstate 540

Located in Raleigh, North Carolina, the Interstate 540 (I-540) is a commuter freeway serving the metropolitan area, which helps to ease congestion on area roadways and accommodate growing urban populations. Once complete, the I-540 will encircle the Raleigh area and connect several towns and cities.

Freeway Congestion Challenge

Reduce mainline congestion and overall delay.

Improve traffic flow along the heavily-traveled freeway.

Positively impact the safety of drivers and the environment.

The Solution

Q-Free deployed its award-winning Intelight MAXTIME rm software on four freeway on-ramp locations along the northern arc of the I-540 in the Raleigh area. Ramp meters are traffic signals installed on freeway on-ramps to control the frequency at which vehicles enter the flow of traffic on the freeway.

The solution increased mobility through the freeway network and traffic throughput by breaking up platoons of vehicles entering the freeway and competing for the same limited gaps in traffic. This also helps reduce collisions and congestion while reducing emissions and improving air quality.

Results

After the implementation of the initial ramp meter installation, the agency realized significant results:

Decreased Delay Benefits

- \$9.6 million in driver delay savings over 10 years
- 13 hours of delay savings over 10 years for the average daily commuter vehicle
- 8.5% annual decrease in vehicle hours of delay
- \$38 a year in delay savings for the average daily commuter vehicle

Travel Time Reductions

- 84% of commuters experienced shorter drive times
- Up to 2-minute (7.3%) decrease in drive time per day for a commuter Congestion and Volume Improvements
- 9% decrease in reoccurring congestion
- 12-minute decrease in congested period per day