

HARD SHOULDER RUNNING PILOT PROJECT (SMARTLANE)



PROJECT LOCATION: Columbus, OH

PROBLEM:

The I-670 corridor is the major artery connecting downtown Columbus, Ohio, to the John Glenn International Airport. It faced regular congestion, which slowed commutes and created safety risks.

SOLUTION:

Burgess & Niple (B&N) designed an active traffic management strategy called Hard Shoulder Running (HSR). HSR is the temporary use of the shoulder to create an additional driving lane during peak travel hours. Using 46 closed-circuit television cameras, traffic operators can remotely evaluate the traffic conditions and adjust lane closures or speeds to optimize the flow through the corridor, which they communicate via nine Dynamic Message Signs. Because of the use of intelligent technology, the Ohio Department of Transportation (ODOT) branded this project, “SmartLane.”



CHALLENGES:

SmartLane is the first use of HSR in Ohio and only the 14th instance in the country. With limited information from lessons learned, B&N executed the design within ODOT’s nine-month timeframe and limited budget. To avoid shifting congestion to another section, B&N also designed interchange modifications. Implementing these innovative solutions required consistent and targeted communications and meetings with ODOT and other government agencies.

BENEFITS:

This approach is significantly less expensive than other options because it uses the existing roadway infrastructure. The solution also provides ODOT a dynamic system that allows them to respond to traffic challenges as they arise. Combined with the interchange modifications, SmartLane created value for the entire corridor, allowing the public to travel more safely and efficiently.

The drivers’ perspective:
The Dynamic Message Signs use arrows, words and signs to communicate which lanes are open and the current speed limit. This image shows a sign test before SmartLane opened. In this instance, the HSR lane (far left shoulder) is closed, as indicated by the red “X”.



I-270 / I-670 interchange
Interchange modifications included a design that eliminates problematic weaving movements by braiding critical ramps in the interchange, which helps improve traffic flow and safety issues.

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