

## **Progress Report – Public Act 20-1 – Wrong Way Detection Pilot Project**

### **January 2022**

In response to the passage of Public Act 20-1, Section 40.a.13, the Connecticut Department of Transportation (Department) must use the proceeds of the sale of bonds for the “purchase of signs that flash a warning when such signs detect a vehicle wrongly entering a road and installation of such signs on exit ramps from interstate highways that are prone to accidents, not exceeding \$1,000,000.” A network screening analysis was conducted by the Department’s Division of Traffic Engineering to create a list of priority highway ramp locations that could benefit from the installation of a wrong way detection system. The wrong-way detection system consists of a 360-degree camera deployed at the ramp intersection to detect vehicles traveling in the wrong direction and wrong-way signs with red circular LED lights, which are activated to flash when a wrong-way vehicle is detected. The Department has proceeded with public notice for a construction project to be advertised for construction in July 2022 to install wrong way detection systems at 16 ramp locations across the state.

### **Network Screening/Risk Factor Assessment**

The network screening analysis focused on 236 ramp locations in Connecticut where on and off-ramps are located on the same side of the road. According to national research, ramp locations with on and off-ramps on the same of the road have a higher risk of experiencing a wrong way event, as a driver may mistake the off-ramp for the on-ramp when trying to enter the highway.

Each ramp location received a risk factor assessment to prioritize locations to receive treatment. A “risk factor” is research-proven condition that, if present at a ramp location, will increase the potential of a wrong way event occurring. If multiple risk factors are present at a ramp location, then it becomes a higher priority location to consider wrong way detection. The following risk factors were evaluated as part of the assessment:

1. Multiple off-ramps that meet at the same location
2. Wrong Way Event History – Each wrong way event at a ramp location over a three-year period increased the ramp’s rank on the priority list.
3. Presence of Alcohol Establishments (bars, lounges, restaurants) within ½ mile of the ramp
4. Presence of Raised Median or Guiderail separating the on and off-ramps
5. Lack of Highway Illumination

### **Preliminary Cost Estimate**

A preliminary cost estimate was determined for each ramp location to determine how much it would cost to install a wrong way detection system. The cost of installing a wrong way detection system varies depending on the following factors:

1. Intersection Control
  - a. Signalized (Base Cost: \$50,000)
  - b. Unsignalized (Base Cost: \$60,000)
2. Traffic Signal Ownership
  - a. State-Owned (Base Cost: \$50,000)
  - b. Municipal-Owned (Base Cost: \$60,000)
3. Complexity and Number of Off-Ramps Present -- The cost increases by \$25,000 for each additional off-ramp present beyond the first off-ramp.

The costs include the procurement of flashing wrong way sign assemblies, detection cameras, equipment cabinets (if required), support structures, excavation, conduit, and electrical wiring. One pilot location will include telecommunications equipment to alert state police that the wrong way detection system was triggered, and will have additional costs not accounted for in the above estimates.

## **Wrong Way Detection Project Sites**

The top ranked ramp locations identified under the risk factor assessment are listed in priority order below:

1. Route 15 Exit 87 at Brainard Road – Hartford (notification system pilot)
2. I-84 Exit 46 at Sisson Avenue - Hartford
3. I-84 West Exit 58B at Roberts Street – East Hartford
4. I-91 Exit 2 at Hamilton Street – New Haven
5. I-91 North Exit 23 at Route 411 (West St.) – Rocky Hill
6. Route 8 North Exit 15 at Route 34 (Main St.) - Derby
7. Route 15 South Exit 60 at Route 10 (Dixwell Ave.) – North Haven
8. I-84 East Exit 63 at Route 30 (Deming St.) - Manchester
9. I-384 East Exit 3 at Route 83 (South Main St.) - Manchester
10. I-91 South Exit 8 at Route 17 (Middletown Ave.) – New Haven
11. I-91 North Exit 12 at U.S. Route 5 (Washington Ave.) – North Haven
12. Route 40 East Exit 1 at Dixwell Avenue – North Haven
13. Route 72 West Exit 2 at Route 372 (New Britain Ave.) – Plainville
14. I-91 North Exit 24 at Route 99 (Silas Deane Hwy) – Rocky Hill
15. I-84 East Exit 16 at Route 188 (Strongtown Rd.) – Southbury
16. I-95 South at Route 27 (Greenmanville Rd.) – Stonington

Each ramp location listed above had an alcohol establishment within ½ mile from the ramp and at least one wrong way event.

## **Project Cost**

The total cost to install wrong way detection at the sixteen locations is approximately \$1,020,000, which is slightly above the authorized amount of \$1,000,000. This includes \$150,000 for designing the wrong way detection at each ramp location and \$870,000 for construction.

## **Timeline**

The Department sent a letter in October 2021 to the Chief Elected Officials for all sixteen locations identified for wrong way detection systems. In addition, the Department published a press release on November 15, 2021, alerting the public to the project's advancement for fifteen of the sixteen locations. One location, Route 15 Exit 87 at Brainard Road in Hartford, will advance under a separate project but along a similar timeline. The Department estimates that designs for the projects will be finished in the spring of 2022, with construction estimated to begin in late fall of 2022.