

West Central Over-Height Vehicle Detection System

April 2020

Project Background

The West Central Avenue railway overpass has been subject of multiple strikes by vehicles too tall for the 12-foot 7-inch clearance. Plaques posted on both sides of the bridge are supplemented by 13 advance warning signs (six from the east and seven from the west) on Central Avenue. All of the signs include flashing beacons or LED lights. Even with all the signage, drivers continued to ignore the warnings and drive into the bridge. Many impacts resulted in significant vehicle damage, as well as thousands of dollars in costs for the city to manage debris cleanup and traffic control, plus hours of travel delay and inconvenience for neighbors and residents.

Staff considered lowering the pavement below the bridge to provide more clearance. Reconstructing several hundred feet of Central Avenue on either side of the bridge, as well as multiple residential and commercial driveways, upgrades to storm sewers, and obtaining permission from CSX Railway to excavate below their structure put the projected cost at about \$1 million.



A second alternative developed in 2015 involved the installation of a laser-activated advance warning system that would only activate for vehicles exceeding the posted height restriction. Studies show that motorists are more likely to obey a traffic control device that abruptly turns on versus one that continuously operates. A request for state safety funding prepared by City staff was approved in 2015.



Improvements

The improvements included installation of two large overhead flashing message boards that activate upon an over-height vehicle disrupting laser detectors located 1,000 feet ahead of the bridge. Communication between the laser controls and overhead message boards is by radio. The laser equipment is powered through 120 VAC connections while the overhead signs are solar powered. Notification is sent to the City Traffic Engineer by email with each activation. The planned addition of cameras will allow the notifications to be sent to the Police Department, and for the recording of video footage to provide information regarding the type of vehicles that activate the system and how the operator behavior changes when the sign comes on. Not all vehicles that activate



the system necessarily strike the bridge as the vertical clearance for each depends on the overall vehicle length.

Schedule & Status

Phase	Year	Status
Study & Design	2015-2016	Complete
Property Acquisition	N/A	N/A
Utility Relocation	N/A	N/A
Construction	2017-2018	Complete

Project Budget

Phase	Cost
Engineering Study Design (Completed by In-house Staff)	\$0
Construction ¹	\$165,000
Total	\$165,000

Notes:

¹ These budget costs are based on actual project costs.

Project Funding

The City was awarded funding through ODOT Safety Funds to cover 100% of the construction costs of the project.

Fund	Budget Year	Budget Appropriation
Engineering Operations – In House Staff	2015-2016	\$0
ODOT Safety Funds	2017-2018	\$165,000
Total		\$165,000

Project Updates

The signage was operational in October 2018 and there has been a 60% reduction of accidents from 2018 (9 total accidents) to 2019 (4 total accidents). The severity of accidents has significantly decreased though it does not prevent all operators from striking the structure. Some proceed very slowly to see if their vehicle can fit below the structure. Others stop and generally, with police assistance, turn their vehicles around. Operators questioned why they ignore the signage have provided the following responses:

1. My GPS was telling me to go this way
2. I thought I could still make it under the bridge
3. The posted clearances are set lower than they actually are
4. I didn't know an alternate route to take
5. I was lost

Drivers who ignore the warnings receive a traffic citation and fine of \$1,000 for hitting the bridge, or a fine of \$750 for ignoring the warnings and requiring help getting turned around.

For information regarding other local roadway improvement and transportation projects, visit www.delawareohio.net/access-delaware

