



CHALLENGE

INCREASE SAFETY AT THE HIGHEST CRASH-RATE LOCATION IN DELAWARE COUNTY VIA AN EFFICIENT AND COST-SAVINGS TRANSPORTATION SOLUTION FOR U.S. 23/ PENNSYLVANIA AVENUE.

SERVICES

- Environmental Analysis
- Geotechnical Services
- Green Infrastructure
- Landscape Design
- Maintenance of Traffic
- Right-of-Way Easements
- Survey
- Traffic Engineering

AWARDS



2018 EXCELLENCE IN HIGHWAY DESIGN

American Council of Engineering Companies (ACEC), Ohio
Department of Transportation (ODOT)

2018 HONOR AWARD

American Council of Engineering Companies (ACEC) of Ohio

2017 OUTSTANDING ENGINEERING ACHIEVEMENT

Franklin County Chapter of Ohio Society of Professional Engineers (FCC-OSPE)

2017 PEER'S CHOICE, OUTSTANDING HIGHWAY PROJECT

Central Ohio Section of the American Society of Highway Engineers (ASHE)

2016 PROJECT OF THE YEAR AWARD, UNDER \$5 MILLION

Central Ohio Section of the American Society of Highway Engineers (ASHE)

U.S. 23/PENNSYLVANIA AVENUE

Built in the 1960s, the U.S. 23/Pennsylvania Avenue interchange in Delaware, Ohio, was constructed as a partial interchange to save cost and ease traffic through downtown. The interchange provided access

to U.S. 23 from/to Pennsylvania Avenue. However, it didn't provide on-ramps/off-ramps for northbound or southbound traffic from/to the avenue.

HIGHEST CRASH RATE

In northern Delaware, motorists were unable to access Pennsylvania Avenue from northbound U.S. 23. Instead, motorists going north would pass Pennsylvania Avenue and then make a dangerous U-turn at Hills-Miller Road. During peak hours, more

than 60 vehicles daily made these unsafe U-turns. This resulted in ODOT identifying Hills-Miller Road as having the highest crash rate in Delaware County in their 2002 ODOT U.S. 23 Access Management Plan.

A GROWING PROBLEM

Delaware's northern and western areas are growing fast. Residents and businesses need reliable and efficient access to U.S. 23, as it is a main thoroughfare.

Prior to the U.S. 23/Pennsylvania Avenue improvement project, many motorists used residential streets to

access southbound U.S. 23 from Pennsylvania Avenue. According to the Delaware Thoroughfare Plan, more than 1,000 vehicles per day used a residential street to cut-through to U.S. 23. These roads are designed for light traffic. Without improvements, cut-through traffic would have continued increasing as Delaware grew, aggravating safety concerns for residents.

FACING CHALLENGES

As with many communities, Delaware's infrastructure needs exceeded the available dollars. In addition to funding, the project also faced challenges due to its location along the Olentangy River and proximity to the Historic Northwest District.

Traditionally, providing better access would include constructing new ramps and creating a full interchange. However, the team designed a creative solution modifying the southbound exit ramp to create a

two-way street with an intersection at U.S. 23. This resolved the three challenges:

- **Preservation.** Reduced impact to the Historic Northwest District.
- **Environmental.** Reduced impact to the Olentangy River floodplain.
- **Financial.** Reduced building costs by \$8 million.

PROJECT DETAILS

The project eliminates traffic that trickled through local streets, improving traffic patterns. It included the following construction:

- The Sandusky Street extension, projected to serve 10,600 vehicles per day.
- Sidewalks along the Sandusky street extension.
- The widening of 1,170 feet of U.S. 23 for new turn lanes.
- A new traffic signal and new turn lane at the Sandusky Street/U.S. 23 intersection.

HISTORIC DISTRICT IMPROVEMENTS

One of the challenges the team faced was minimizing impacts to the Historic Northwest District homes located near the Sandusky extension. With their improvements, the team not only minimized impacts, but also improved the neighborhood by constructing a

true, two-way street in front of the homes. With a new sidewalk, tree lawn, period post-top street lighting, street trees and landscaping, the character of this part of the district is much improved.

SAFETY FOR PEDESTRIANS AND CYCLISTS

To accommodate pedestrians, the team designed a sidewalk along the west side of the Sandusky Street extension. “Share the road” signage alerts drivers to the potential presence of cyclists. These features

highlight Delaware’s commitment to alternate modes of transportation in the community and encourage a healthier lifestyle.

WATER-QUALITY IMPROVEMENTS

The vegetated biofilter constructed between the Sandusky Street extension and U.S. 23 improves water quality for runoff flowing into the adjacent

Olentangy River. The biofilter complies with the Ohio EPA Olentangy River Watershed Alternative General Construction Stormwater Permit.

SAVING MONEY

By designing and building a less costly, innovative solution, the team reduced the total project construction costs to less than \$2.5 million—an \$8 million savings. The project is also flexible in that a full interchange could be developed, should there be a need.

The partial interchange was completed in October 2016 and provides safe and efficient access to northern Delaware

AN AWARD-WINNING SOLUTION

Since its completion, the U.S. 23/Pennsylvania Avenue improvement project has received numerous awards.

[Click here to view the YouTube video from the ACEC/ODOT Partnering award, a story behind the award-winning design.](#)

Honoring organizations include American Council of Engineering Companies (ACEC) of Ohio, the Ohio Department of Transportation (ODOT), and American Society of Highway Engineers (ASHE) Central Ohio.