Route 71 Pedestrian Tunnel at Monmouth University

Pedestrian and Bicycle Information Center

Problem

Monmouth University has a student population of over 5,000 and many of the campus facilities are divided by Route 71. For the past 30 years, a midblock crosswalk was used by pedestrians and small motorized campus utility vehicles to cross Route 71 and reach different parts of campus. The crosswalk was equipped with a flashing beacon and manned by crossing guards.

Background

The frequent and sudden stopping of vehicles at the crosswalk created several problems, including numerous rear-end vehicle crashes, pedestrian collision (including one fatality), and crashes involving crossing guards. A survey showed that during a one-hour period, traffic counts recorded up to 600 pedestrians crossing Route 71 and 1200 vehicles traveling on Route 71. Such large numbers increased the possibility of conflicts. The University and local community both wanted safety and traffic conditions improved. Four different designs were considered: 1) an at-grade crossing with curb cuts, 2) a pedestrian refuge island, 3) a pedestrian bridge, and 4) a pedestrian underpass.

Solution

The southern approach to the crosswalk on Route 71 is part of a National Register historic property, which restricts certain structures from being built. The proposed pedestrian bridge would degrade the historic character of the site and was not approved by the New Jersey State Historic Preservation Office. The at-grade alternative would be completed quickly, but would not eliminate traffic stops or fully address the need for separation of pedestrian and vehicular traffic. The pedestrian underpass was the most agreed upon plan that would decrease pedestrian and vehicle conflicts and eliminate traffic stops.

Students walking through the tunnel.

Student safety, drainage, impact to the existing historic area, and construction were all concerns dealing with the pedestrian underpass. The safety issues were addressed with a security system that is linked to campus police; drainage problems were solved with a pump and underground storage system; architectural treatments were enhanced to blend with the historic context; and constructability issues were solved by a structural design approach aimed at minimizing impacts. The ramps that approached the tunnel were designed to meet Americans with Disabilities Act (ADA) standards with specific grade, landing area, and cross slope requirements. The tunnel width was 14 feet, the height was 10 feet (to accommodate university maintenance vehicles), and the length was 71.5 feet.

Results

The project took 11 months to design and 1 year to construct, allowing it to open for pedestrian traffic in August 2002. The construction of the pedestrian tunnel eliminated vehicular and pedestrian conflicts without impacting the site's historic character or compromising student safety. Since the construction of the tunnel there have not been any pedestrian and vehicular conflicts.

Cost

The costs for this project were $695,000 for final design and construction support, $830,000 for bridge construction costs, and $3,200,000 for road construction costs.

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