

Milwaukee Suburb Safeguards Pedestrians and Drivers with LED-Enhanced Solutions



CUSTOMER NAME

Village of Whitefish Bay,
Wisconsin

PRODUCTS

Four Rectangular Rapid-Flashing Beacon (RRFB) Pedestrian Crosswalk Systems, four Traffic Logix radar feedback signs

SUMMARY

An S-curve on a busy road jeopardized the safety of both drivers and pedestrians, so the Village of Whitefish Bay used Highway Safety Improvement Program (HSIP) funding to overhaul safety with a combination of low-tech and high-tech solutions.

ORGANIZATION

Home to around 14,000 people, the Village of Whitefish Bay lies beside Lake Michigan just north of Milwaukee, Wisconsin.

SITUATION

The aptly named Lake Drive, which partially overlaps with State Highway 32, winds through the northern Milwaukee metropolitan area along the western shores of Lake Michigan. In the suburb of Whitefish Bay, the road is considered the scenic route to reach the city, resulting in heavy vehicle traffic throughout the day.

The multiple parks and beaches stretching along the road also draw many pedestrians and bicyclists — and the areas where they interact with drivers are less than ideal.

One such area featured an S-curve in the roadway that limited visibility. Even though there was a crosswalk nearby, due to its location on the curve, pedestrians and vehicles often could not see each other until the last second. There was also no pedestrian refuge island or other safety measure to safeguard pedestrians besides the standard crosswalk.

On top of that, drivers often did not yield to pedestrians, and speeding over the posted 30 MPH was common. Each year, multiple vehicles left the road, driving into backyards or striking fixed objects like trees and streetlights. A pedestrian-vehicle crash seemed imminent.



TAPCO RRFBs are proven to increase driver yield rates by as much as 90 percent, according to a St. Petersburg, Florida study

John Edlebeck, the Director of Public Works for Whitefish Bay, had recently worked on a couple other pedestrian safety improvements in town and zeroed in on Lake Drive as the next location in need. He had two essential goals: provide advance warning of pedestrians in crosswalks and increase speed limit compliance.

SOLUTION

Providing Advanced Warning of Pedestrians in Crosswalks

It was the increased rates of driver yielding – up to 90 percent, according to a St. Petersburg, Florida study – that drew John Edlebeck to the TAPCO Rectangular Rapid-Flashing Beacon (RRFB) Pedestrian Crosswalk System. In addition, the system had already proven successful in front of the local library.

Wasting no time, John Edlebeck had the TAPCO RRFB system installed at the crosswalk located on the S-curve to prevent a collision. The system enables pedestrians entering the crosswalk to simply push a button to set off extra-large RRFBs utilizing the Interim Approval 21 (IA-21)-approved wig-wag plus simultaneous (WW+S) flash pattern. This provides real-time warning to drivers that there is a pedestrian to look out for.

He selected solar power for the system because it is cost effective and self-sustaining, as well as push button activation for its simplicity.

The next phase of the plan was to integrate other solutions with the RRFB system and expand to more locations, which John was interested in paying for with Wisconsin Department of Transportation Highway Safety Improvement Program (HSIP) funding. Ninety percent of the program's funding comes from federal and state money, and the program requires a carefully considered cost-benefit ratio.



"I've used the HSIP program for a number of years," John Edlebeck says. "After we calculated the vehicle crashes and pedestrian crashes on Lake Drive, we worked to show the benefits that improvements would have in order to get funding."

He partnered with Traffic Analysis & Design, Inc. (TADI), a Wisconsin-based traffic engineering firm, to define the project and develop the HSIP application. John Campbell, TADI's Director of Traffic Engineering Safety Services, supported using RRFB systems at additional locations due to their effectiveness.

"They're very good at encouraging people to yield to pedestrians," he explains. "My experience is that they've been very successful, especially on low-speed roadways."

The application included solar-powered RRFB systems that would be placed both in advance of the S-curve and farther down the road by a school.

Increasing Speed Limit Compliance

The impact of slowing down drivers even slightly cannot be overstated. According to the National Highway Traffic Safety Administration (NHTSA), a pedestrian who collides with a car traveling 40 miles per hour has a 20 percent chance of survival. If the car is traveling 30 miles per hour, that number jumps to 60 percent. If the car is traveling 20 miles per hour, the number tops 90 percent.

Knowing this, John Edlebeck decided to include four solar-powered Traffic Logix radar feedback signs from TAPCO in the HSIP application because they are proven to reduce speeds where static speed limit signs have been ineffective.

With an adjustable speed detection threshold, these MUTCD-compliant signs can be configured to fit virtually every application. They were just what John Edlebeck had been searching for to reduce the prevalence of speeders on Lake Drive.

The chances of a pedestrian surviving a collision with a vehicle traveling 40 mph is just 20 percent, but if the vehicle slows to 20 mph the chances jump to 90 percent, according to the NHTSA

“I receive data from our police department and DOT, and according to that our crashes are down 20 to 30 percent. It’s substantial.”

John Edlebeck, Director of Public Works for Whitefish Bay, WI

Adding Extra Layers of Safety

To further improve safety, TADI suggested the Lake Drive S-curve be reconfigured to feature a staggered crosswalk, also called a z-shaped crosswalk. It would have a pedestrian refuge island in the center, with the two halves of the crosswalk offset slightly from each other.

“There was no spot in the existing median for pedestrians to safely wait,” John Campbell says, “and they were in a really poor position for vehicles to see them coming around the curve. A staggered crosswalk physically directs the pedestrian to walk facing traffic, and the advantage of that is it helps promote eye contact with the approaching drivers.”

Why TAPCO

Whitefish Bay’s previous success with TAPCO solutions was a key reason John Edlebeck chose TAPCO for this project.

“We’ve worked with TAPCO a lot in the past,” he says, “and we have a maintenance contract with TAPCO right now for traffic signals. To us, going with TAPCO on this project was a logical extension of that, and I think these are great products.”

Fortunately, the HSIP application was accepted, and the funding covered the entire Lake Drive project. The installation work was competitively bid according to DOT specifications, and in a matter of weeks all the installations – and the crosswalk reconfiguration – were complete. Lake Drive was transformed.



RESULTS

Now, when a pedestrian is in the crosswalk, RRFBs alert drivers in advance and again at the crosswalk. Pedestrians are also more protected in the new staggered crosswalk on the S-curve. In addition, speeding drivers activate the LED-enhanced driver feedback signs to flash, making them more likely to slow down.

“Our crashes are way down with the new systems,” John Edlebeck says. “I receive data from our police department and DOT, and according to that our crashes are down 20 to 30 percent. It’s substantial.”

He recommends the TAPCO RRFB Pedestrian Crosswalk System, radar feedback signs and staggered crosswalks to other communities and encourages the use of HSIP funding if possible. After all, leveraging advanced, integrated safety solutions can truly mean the difference between life and death.

“Once you put in one of these RRFB or [radar feedback signs], everyone wants them at every intersection in the village,” John Edlebeck adds. “They work very well, and that wasn’t news to us.”

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Learn more about the RRFB Pedestrian Crosswalk System here and the radar feedback signs here

ABOUT TAPCO

As an industry-leading innovator, TAPCO manufactures, services and distributes a wide portfolio of traffic and parking safety solutions designed to increase safe travels for all. Since 1956, we have set the standard for delivering reliable, cutting-edge traffic safety enhancements. From our world-renowned line of LED-enhanced BlinkerSign® solutions to our pedestrian crossing products and early detection warning systems, safety is at the heart of all TAPCO innovations.

Working alongside traffic professionals for more than 60 years gives our team an exclusive perspective on the past, present and future needs of the traffic and parking safety industry.

