New roundabout with flashing beacons brings pedestrian safety to Maui

Kahului, Maui

Photo: Maui Lani Roundabout Facebook Page

Location
Kahului, Maui

Project size
6 x R920 RRFB crosswalk systems

Client
County of Maui

Distributor
Goldwings Supply Service, Inc.

Background

Located on the outskirts of Kahului, Maui, the intersection of Kamehameha Avenue and Maui Lani Parkway had been grappling with heavy traffic congestion due to booming local residential and commercial growth. The expanding urban developments systematically increased the number of daily roadway users, those of which included school children, joggers, walkers, and cyclists. Until recently, it was not unusual to see 10 or more cars lined up at each leg of the four-way stop sign controlled intersection during the morning rush.

As the usage of the intersection intensified, pedestrian safety had become growing and serious community concern. Although pavement markings had been added at two of the four intersection legs, pedestrians—many of them children walking to and from a nearby elementary school—were forced to cross up to three lanes of traffic at a time without any visibility or safety enhancements.

Four-way stop intersection before roundabout installation

The busy intersection presented an opportunity for further enhancement to a growing and vibrant community. In 2018, **parents, teachers, and county officials rallied** in support of a new type of intersection design that had been installed in neighboring Kihei a few years earlier: a roundabout, equipped with high-visibility signs and pavement markings, splitter islands, and rectangular rapid-flashing beacons (RRFBs) designed to improve pedestrian safety and accessibility.

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Photo: The Maui News

Project Requirements

There are a few reasons the community was in favor of replacing the four-way stop at Maui Lani with a roundabout versus a traditional traffic signal. First, roundabouts improve congestion and traffic flow. But just as important, with proper enhancements, they can also provide much-needed safety to pedestrians and cyclists.

"It all comes down to speed," said **Laks Abraham**, a community program manager who helped organize the rally. "A pedestrian hit at 20 miles per hour has a 90% chance of surviving, in comparison to when you go up to 40 miles per hour, it drops to 10%."

Beyond safety, the County of Maui was also interested in cost. With the help of a consulting firm, they determined that although the upfront material and labour costs would be approximately the same as installing a traffic signal, **the maintenance costs would not be**: a traffic signal would cost around $13,000 annually to maintain while a roundabout would cost $2,600.

Our Solution

Maui County Council approved the new roundabout in late 2019. The designs included high-visibility signage and pavement markings, small concrete medians (also known as splitter islands), and shorter crosswalks set away from the center island.

The roundabout design also included rectangular rapid flashing beacons (**RRFBs**)— high-intensity LED light bars that flash alerting motorists that a pedestrian is present and waiting to enter the roadway. In previous years, Carmanah's Hawaiian Distributor **Goldwings Supply Service Inc.** had provided dozens of RRFBs to crosswalk and school zone safety projects throughout the state, including **one just down the road by the Kahului Airport**. As such, the County's Public Works department looked to Carmanah and Goldwings for technical expertise on pedestrian safety and RRFBs in the new roundabout.

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Based on the results of a site-specific **Energy Balance Report (EBR)**, Carmanah and Goldwings recommended six **R920-E solar-powered RRFBs**—three for each of the two pedestrian crossings, including one positioned at either side of the road and one on the splitter island. Each of the poles included a compact solar panel and energy management system (EMS), reflective sign, ultra-bright LED light bar, and pedestrian-actuated pushbutton.

Outcome

Since the Maui Lani roundabout was opened to the public with a **traditional blessing ceremony** in July 2020, Carmanah's RRFBs have already helped thousands of pedestrians safely and visibly navigate the busy intersection.

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>
> *– Keoni Wasano, Goldwings Supply Service Inc.*

"[The new roundabout] is intended to strengthen walking and bicycling conditions, by providing shorter and safer crossings that link the neighborhoods to Pomaikai Elementary School and the Central Maui Regional Park," said **Public Works Director Rowena Dagdag-Andaya**. "This will be great for the kids and the families who are crossing the street at the intersection."

As of December 2020, the majority of reports are positive and the roundabout is performing as planned. "We chose the Carmanah R920-E RRFBs for their durability, performance, and familiarity for our maintenance crews. We currently have over twenty RRRBs installed within the County [of Maui] (not including those installed by the Hawaii State DOT) and at least two-thirds of our RRFBs are the Carmanah R920 model," explains Kurt Watanabe, Civil Engineer for the Department of Public Works.

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We're glad to hear that our reliable traffic control systems are helping keep people safe. Mahalo!