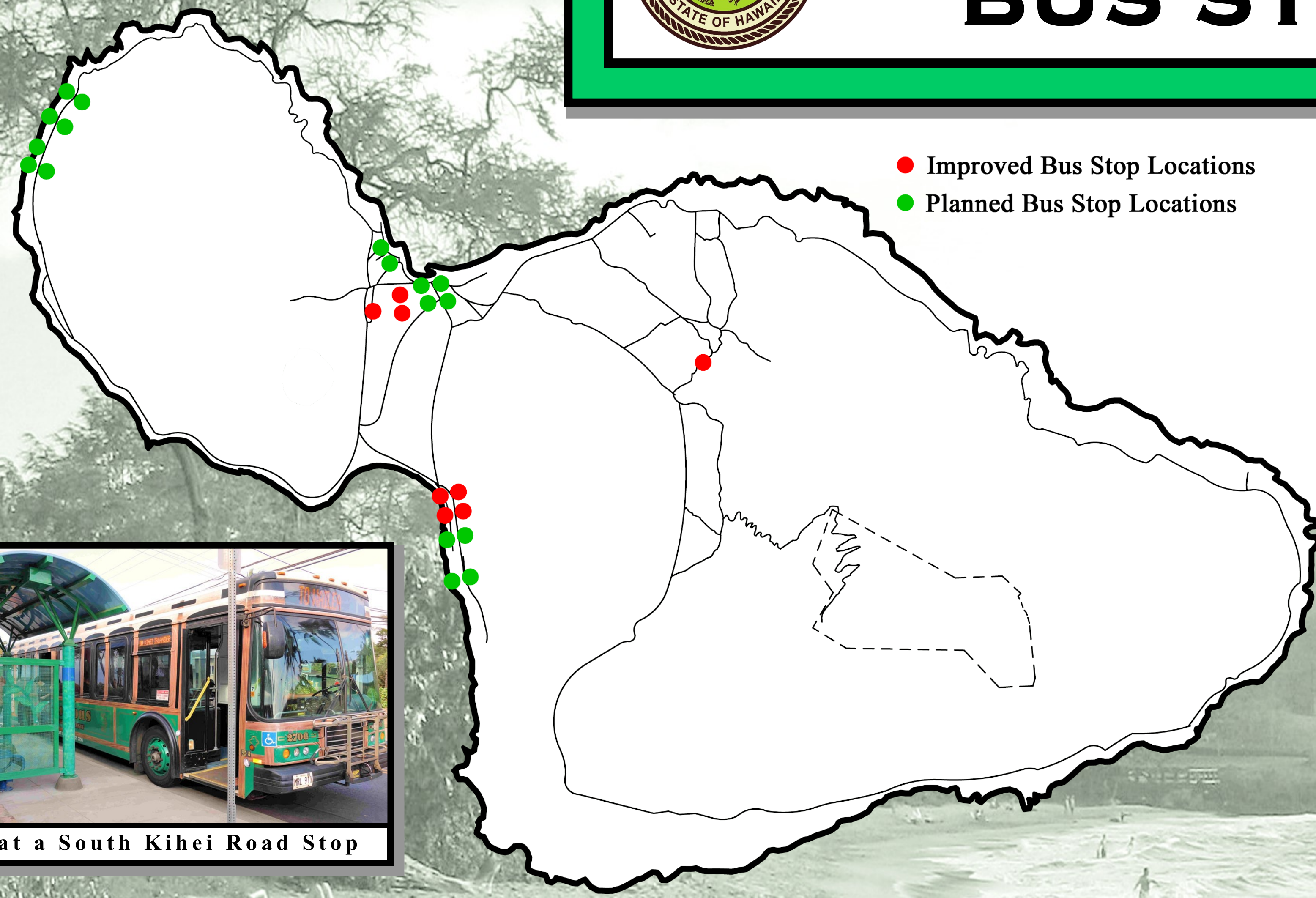
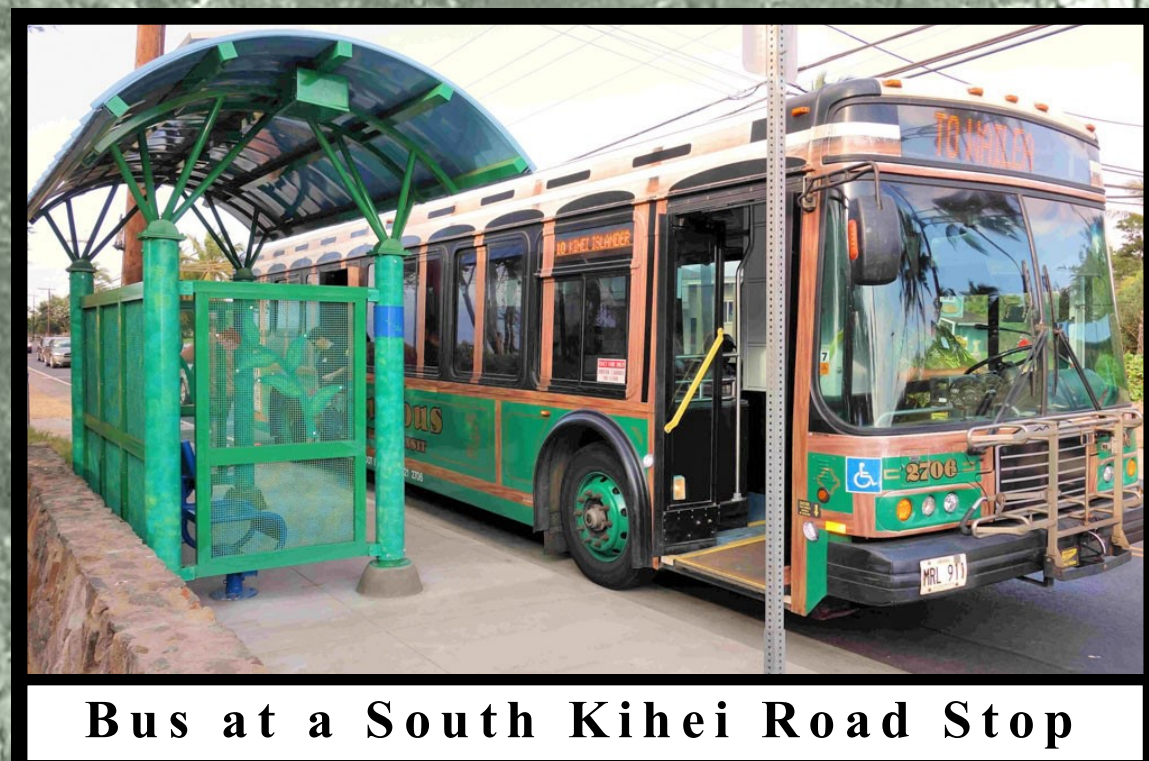


MAUI COUNTY BUS STOPS



● Improved Bus Stop Locations
● Planned Bus Stop Locations

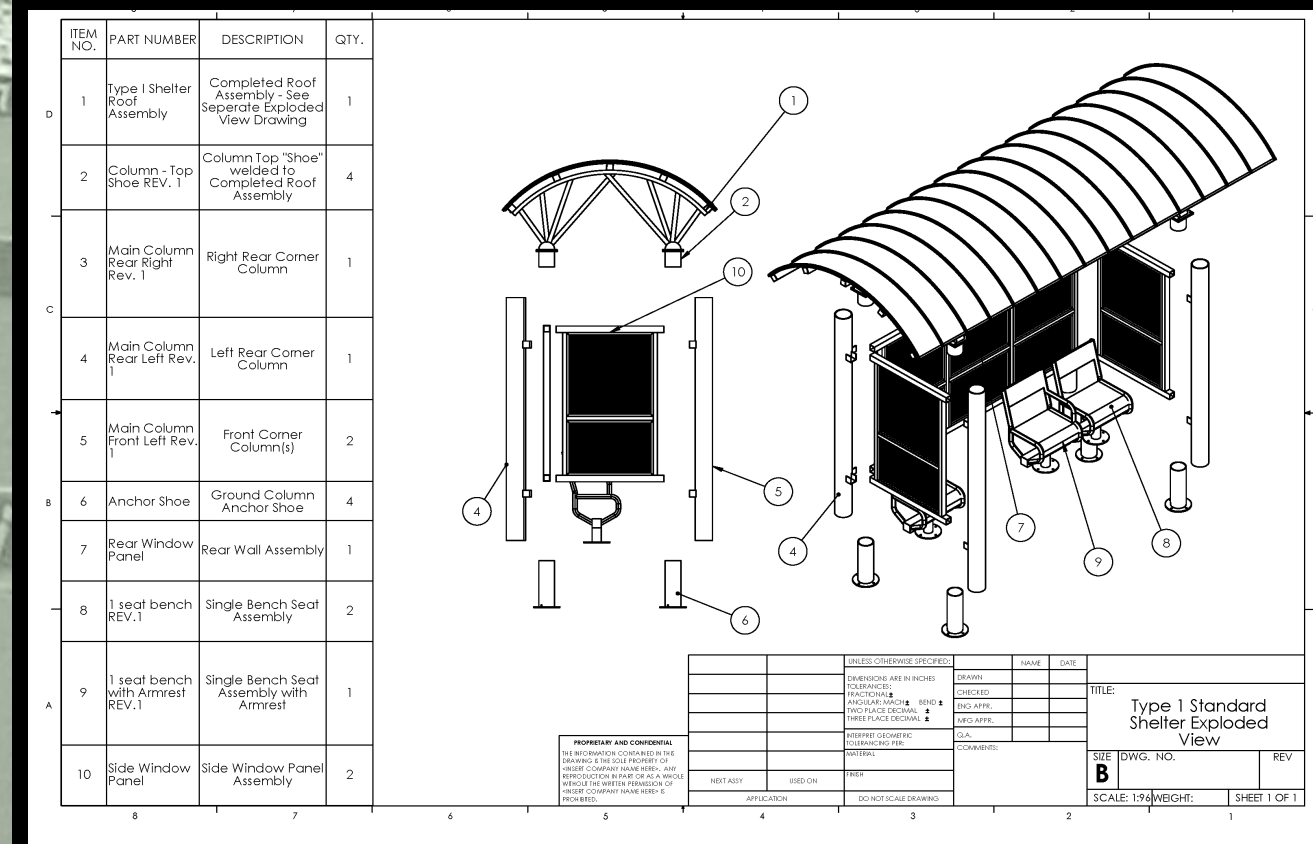


Bus at a South Kihei Road Stop

Conceptual Sketches of Shelter Types



Exploded View Showing Individual Parts



PROJECT TEAM

Agency: County of Maui, Department of Transportation
Contractor: Alliance, LLC
Artist: Padilla Designs, LLC
Civil Engineer: Ronald M. Fukumoto Engineering, Inc.
Archaeologist: Xamanek Researches, LLC
Planner: Munekiyo & Hiraga, Inc.
Conceptual Architect: Artel, Inc.



PROJECT DESCRIPTION

The Maui County Bus Stops project was the first phase of bus stop improvements by the County's Department of Transportation. The project included 8 locations: 2 in Kahului, 1 in Wailuku, 4 in Kihei, and 1 in Makawao. Improvements varied at each location, but generally included a bus shelter, seating, a bike rack, trash and recycling receptacles, and site improvements. Site improvements consisted of curbs, gutters, concrete slabs and walkways, ramps, signage, paving, stripping, site walls, and landscaping. The Maui Bus services various Central, South, West, Haiku, Kula, and Upcountry Maui communities. There are about 150 bus stops throughout these communities.

RECENT NEWS ON BUS SERVICE

The Maui Bus' ridership rose from approximately 2.3 million in 2011 to nearly 2.8 million in 2012. On January 1, 2013, a Kula route was added from Pukalani to Rice Park in response to the community's request.

WHAT THEY ARE SAYING AT THE NATIONAL LEVEL

"I've had the opportunity to visit the bus provider on Maui, and you are correct, they are one of the fastest growing players in the country." Federal Transit Administrator Peter Rogoff told former U.S. Senator Daniel Akaka back in 2011. "And when you're trying to provide mobility around an island that just has a perimeter road, and you have gas prices the highest in the nation as you pointed out, those bus services are very critical."

ENGINEERING DIFFICULTY

There were no design standards in place that could be used for reference, as these were the first bus shelters to be built in Maui County. Design standards from various municipalities needed to be researched, compiled, and modified to fit our location.

The bus stops were designed to be accessible to the fullest extent possible. The most challenging design criteria was the minimum 8-foot wide sidewalk requirement. This area is needed for the bus ramp to deploy during boarding and alighting. Due to limited roadway widths, bus stop locations needed to be carefully selected, surveyed, and designed in order to ensure adequate space.

CONSTRUCTION DIFFICULTY

The bus stop locations were chosen for this project based on the highest amount of riders per stop. One reason the selected bus stop locations were so popular was due to the dense population in the vicinity. The roads that the bus shelters were built on were highly congested with foot, bike, and vehicle traffic. Keeping traffic open at all times left little room for the Contractor to work.

The shelters were not preassembled. They came as individual parts in a container. Because these were custom shelters, and the first ones ever built of their kind, the Contractor constantly had to coordinate with the manufacturer in Michigan during construction.

ENVIRONMENTAL CONSIDERATIONS

The improvements encourage bus ridership which means less vehicles on the roads. Less vehicles on the roads results in a decrease in the harmful emissions that negatively impact the environment. These days, society is much more conscientious of "going green," so improving ease of use of the Maui bus encourages and supports social responsibility.

After extensive research, the County selected prefabricated bus shelters that would withstand harsh environmental conditions and heavy usage, minimize operational costs, and enhance nighttime safety. To address durability issues, the bus shelters have metal components with factory-applied, corrosion and vandal-resistant finishes. In addition, the shelters were designed to resist hurricane-force wind loads. To address cost and safety issues, the bus shelters have LED lighting powered by roof-mounted photovoltaic panels and batteries.

PUBLIC BENEFIT

The new bus stops enhance safety, accessibility, comfort, and convenience for the public, and encourage ridership. The bus shelters protect the public from rain and heat from direct sunlight. Seating, bike racks, and trash and recycling receptacles also make the bus stops more comfortable and convenient.

Increased ridership helps to reduce traffic congestion and has a beneficial effect on the environment. Riding the bus is cheaper than driving a car, especially with higher gas prices. Additionally, the bus provides mobility to those who cannot drive and improves the quality of their lives. The bus also provides options for people to travel around the island for work and play which can have a positive impact on the local economy.

Various bus shelter styles were installed. The style installed in each community was chosen after receiving input from the residents in that area. Each shelter also received unique embellishments created by the local artist. Embellishments included torch ginger for Kahului, canoes for Kihei, and paniolo for Makawao. Shelters were not cookie-cutter designs from a catalog. The goal of the project was to receive public input and to showcase shelters as distinctive as the communities they were installed in.



Event: HSPE MAUI CHAPTER
2013 PROJECT OF THE YEAR
COMPETITION
Sponsor: Hawaii Society of Professional Engineers
Maui Chapter
Date: February 4, 2013
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