SAILING—OR CYCLING—AWAY

The Galveston Street Bicycle and Pedestrian Bridge in Chandler, Ariz., offers walkers and bikers a safe route over Arizona State Route 101 (known as Loop 101). Completed in January 2014, it is laid out in a sleek S-curve and includes elements of fabric sails along its length. The sails mirror the theme of a nearby popular destination for radio-controlled aircraft enthusiasts.

Phoenix-based design-build and architectural firm International Tension Structures lined the bridge with 43 fabric sails that appear to float unsupported above the bridge and freeway. The sailing-in-the-wind effect is thanks to hidden support arms above the fabric. Also, because site-specific issues required each sail to be positioned at a different angle and location, the frames that house the sails were individually manufactured. For that, the firm engineered an adjustable clamshell to which the sails were individually positioned and attached.

The sails themselves were created from high-density polyethylene-smooth fabric—Synthesis® Commercial 95™ from Gale Pacific USA. The knitted shade fabric, used for shade structures and similar architectural applications, was chosen for its durability and cost effectiveness.

At their highest point, the sails fly 50 feet above the freeway, waving to pedestrians, bikers, drivers and riders who pass underneath. Visit www.intenstructures.com to view more tensile membrane structures.

International Tension Structures began work on the bridge in 2008, providing design-assistance to the project team. The project came to fruition with the state of Arizona partnering with the city of Chandler and the federal government. Photos: International Tension Structures.