Title: UGA Electric Bus Facility Redesign
Sponsor: UGA Auxiliary Services
Faculty Mentor: Dr. Durham, Ph.D., P.E.
Team Members: Tala Sidawi, Heather Dobisch, Blake Ginn, Kimberly Arriaga
Award Category: Sustainable Design

Description: Our team was tasked with working with Proterra and UGA’s Auxiliary Services to develop site design plans for the second and third phase of the proposed UGA electric bus fleet charging site. With this proposed construction, the design considered site traffic flow and safety, demands for bus maintenance, as well as charging and parking requirements for 80 electric buses.

Abstract: The University of Georgia acquired 20 electric buses after receiving a $10 million grant from GO! Transit Capital Program. Since then, an additional $7.46 million grant under the Federal Transit Administration’s Grant for Buses and Bus Facilities Program allowed the university to purchase 13 additional electric buses. The project team, On-Site Consulting, collaborated with UGA’s Auxiliary Services to redevelop the transit site and accommodate the largest electric bus fleet at any university in the United States. The new site design has expanded the number of employee and bus parking spaces to 196 and 100, respectively, to accommodate the influx of electric buses while taking into account diesel buses that remain on-site. To promote the safety of transit employees, a separate employee parking lot, new bus entrance, and pedestrian sidewalks were proposed for the site’s redevelopment. In an effort to promote sustainability, a 250 kW solar canopy was designed, which has the potential to offset annual facility costs by an estimated $35,000, as well as reduce overall CO2 emissions by 93% compared to standard diesel emissions. Further, a new maintenance and office facility has been located onsite which will include 6 new maintenance bays as well as a second floor office space. This improved design allows more land to be made available for bus and employee parking. The design has been proposed in two phases to allow the smoothest possible transition from demolition, construction, and implementation. In summary, the new facility design will improve safety throughout and around the property, improve traffic efficiency, create new working space for employees, and promote sustainability with the electric buses and solar canopy.