



Capstone Design Project Abstract

Project Title: South Brunswick Storm Drainage Improvements

Sponsor: City of Brunswick & Brunswick-Glynn Joint Water and Sewer Commission (BGJWSC)

Team Members: Logan Griffeth, Tristen Durst, Elizabeth Rideout

Faculty Mentor: Dr. Felix Santiago-Collazo

Golden Isles Engineering collaborated with the City of Brunswick and Brunswick-Glynn Joint Water and Sewer Commission (BGJWSC) to mitigate persistent flooding in a South End Brunswick coastal neighborhood. This mixed-use residential and industrial site experienced recurrent flooding due to the combined impacts of heavy precipitation and tidal influences from the East River. Utilizing EPA SWMM, a stormwater modeling software, the team evaluated the existing stormwater system and developed an upsized system to enhance flood resilience. The proposed design incorporates tidal fluctuation and intense rainfall event modeling, complemented by a rain garden for enhanced stormwater management and a replacement tidal gate to prevent backflow. In addition, the stormwater model accounts for changes in rainfall and tidal intensity due to climate change. As part of this project, the client received a comprehensive set of plans featuring these changes and enhancements to the stormwater system, as well as a fully functional stormwater model that can assist the client in modeling all future changes made to the system.

In addition to stormwater system enhancements, the project addressed the aging sewer infrastructure. Sewer profiles were generated using Civil 3D, and Infiltration and Inflow (I&I) estimates were calculated using EPA methodologies. These deliverables provide critical data for future sewer lining initiatives through BGJWSC. This comprehensive project delivers accessible engineering solutions to enhance the City of Brunswick's stormwater and sewer infrastructure, improving community resilience and infrastructure efficiency.