Problem Statement

Floral Park, located Opelika, Alabama, was constructed around the late 1970’s for recreational and community use. The park is comprised of approximately 23 acres, making it one of the largest parks in Opelika. Floral Park currently has three adult softball fields, a walking path, open play areas, and dog park that was constructed in 2018. The park has become dilapidated and is not frequently used by the members of the community.

Storm events have brought about flooding due to poor storm water management over time. To increase storm water drainage and park usage, a soccer field, parking lot, bioretention area, and areas for additional walking paths were proposed.

Design Objectives

1. Design stormwater management infrastructure for the renovation of Floral Park to successfully convey stormwater runoff such that post development runoff will not exceed pre-development for 5-, 10-, 25-, and 100-year storm events without exceeding a budget of $150,000.

2. Incorporate green infrastructure and best management practices such as constructed wetlands and bioretention cells in the design and implementation of the stormwater management plan in order to create surface level stormwater management features.

3. Devised a site grading plan and design that complies with ADA standards as to create an inclusive and enjoyable experience for all park goers. Grading plan supports and is integrated with surface drainage components of the completed SW plan.

Design Plan

The proposed design incorporates existing stormwater pipe network with the addition of two 12" round concrete pipes to convey stormwater from the proposed parking lot and three 12" PVC pipe for the retention pond. Pavilions, soccer bleachers, family gaming areas, playground, and new walking paths were considered when designing the stormwater management system. A 15’ x 8’ bioretention cell is located to the southwest of the playground to intercept runoff from new pavilions and bleachers.

Cost Estimate

Summary

The proposed stormwater management design plan will successfully convey stormwater from new and existing features on the site for a 25-year storm event. Proposed walking paths, compliant with ADA standards, will allow for guests with any disabilities to enjoy the park with the new retention pond and bioretention cell. The design was also able to remain within the budget of $150,000.

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