Project Title: Spalding County Intersection Improvements  
Sponsor: Spalding County - Griffin  
Team Members: Chandler Bragg, Zach Picard, Cole Mattison  
Faculty Mentor: Dr. Jidong Yang

Project Description: Spalding County would like the development of two road intersections to improve the current safety and flow at both intersection locations. BMP Civil Design Solutions’ job is to design two new intersections and provide the client with traffic analysis and recommendations, a full set of construction plans, and a cost estimate for both intersections.

Abstract: Upon visiting the two intersections in Spalding County, it was immediately obvious that an improvement in safety would be our number one concern. Along with safety came a proper flow of traffic and preparation for a growth in population. Spalding County is a rural area with a population around 65,000. With a new retirement community being built in the county, a growth in population and traffic through these two intersections was a concern of the client.

The first intersection is Locust Grove Road at Jackson Road. Locust Grove Road is a two-lane road that runs north to south. The road forks into two, two-lane roads approximately 125 feet before intersecting Jackson Road. This means that there are two different roads that intersect Jackson Road right next to one another. Additionally, there is a small gas station that sits at the corner of this intersection. The gas station parking lot is not curbed; therefore, vehicles can come and go off Locust Grove Road as they please.

The main issue with this intersection is apparent when making a left turn off Jackson Road onto Locust Grove Road. This turn requires the driver to cross two separate lanes of traffic and is therefore dangerous. A simple solution to this intersection without having to add any stop lights would be to add a left turn lane from Jackson Road to Locust Grove Road and another left turn lane from Locust Grove Road to Jackson Road. This design can be seen in Figure 1 below. Adding these turn lanes with yield signs and eliminating the fork in the current road will prevent drivers from having to cross over lanes that are traveling in the opposite direction. This will greatly improve the safety of this intersection.

The second intersection is Jenkinsburg Road at Jackson Road, which is approximately 1.6 miles east down Jackson Road. This intersection essentially has three roads intersecting Jackson Road at the same area. Jenkinsburg Road and a church access road intersect Jackson Road on its north side, while Tomachichi Road intersects Jackson Road directly across the street. Additionally, Jenkinsburg Road intersects Jackson Road at approximately a 24-degree angle, greatly inhibiting the perceived site distance of drivers approaching Jackson Road on Jenkinsburg Road.

Due to the nature of the intersection, as drivers make a left turn from Jenkinsburg Road onto Jackson Road, they will have to be slightly ahead of a stop bar just to have adequate sight distance. In order to improve the sight distance from Jenkinsburg Road to Jackson Road and to allow the church an access road that is not at the intersection, Jenkinsburg Road will have to connect approximately 720 feet further west down Jackson Road. This will allow for a 90-degree connection. Also, when moving Jenkinsburg Road, the church will use the existing Jenkinsburg Road as an access road and no longer connect to the intersection. This design can be seen in Figure 2 below.

Figure 1: Aerial view of Locust Grove Road at Jackson Road.  
Figure 2: Aerial view of Jenkinsburg Road at Jackson Road.

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