Teen RSA Case Study: Union High School

Students from a Small Town in Virginia Make Big Wins in Traffic Safety Near Their School

Background: In the small town of Big Stone Gap, Virginia, three schools (elementary, middle and high school) share entrances close to each other on a major artery known as Powell Valley Road, without any traffic flow infrastructure. Additionally, this major road connects their town to a U.S. highway (US HWY 23). These circumstances created traffic challenges far beyond congestion during school hours and resulted in a very dangerous, high-risk area for students, parents and buses full of children. Even with the placement of a traffic safety officer at the elementary school entrance, it was still impossible to create a completely safe environment for drivers in this area.

Action: Students from Union High School’s (UHS) FCCLA chapter worked with their local State Farm agent and school administrators to conduct a Teen Road Safety Assessment (RSA). FCCLA members used surveys to observe and analyze traffic concerns among UHS faculty and students. Aerial mapping views of the roadways around the schools were obtained from the Wise County Circuit Court Clerk and Wise County Geographic Information Sciences. The students recorded the traffic patterns they discovered at the three intersections giving access to their school and logged anecdotal information from those who conducted traffic counts.

Coalition Building: The UHS principal supported these efforts by giving “Work Days” to any teacher willing to help monitor student safety during the RSAs. A UHS Business teacher translated the recorded traffic numbers into excel spreadsheets, and a UHS Math teacher volunteered to use the research tools available at UVA-Wise to turn their findings into tables and charts to answer relevant questions about UHS traffic patterns and possible safety concerns. Finally, this spring, the students presented their data at a public forum including traffic experts, school personnel and students, VDOT, Virginia State Police, and members of the public. It quickly became apparent that everyone wanted to improve traffic safety; the challenge was identifying the best way to do that (and how to pay for it).

Challenge #1: Figuring Out Who is in Charge
Students quickly discovered that figuring out who approves infrastructure improvements (and who pays for them) is complicated. When considering traffic light options, students found out that the entire approval process is based upon federal regulations. In the case of the intersections involved in the UHS traffic patterns, multiple lights would have been needed. In the end students learned that traffic safety solutions involve their school system, which does not have funding available for major projects, county officials, state officials and even federal regulators.

Challenge #2: Meeting Federal Regulations
State approval of new traffic lights is based upon federal guidelines that specify standards for their design, installation and use, such as average traffic counts within specific time frames; and types, frequency and severity of traffic accidents. The guidelines are hundreds of pages long! Fortunately, the FCCLA Adviser found a section within the MUTCD, (Manual on Uniform Traffic Control Devices), which indicated that “Installing a traffic control signal at some intersections might be justified to encourage concentration and organization of traffic flow on a roadway network” met the two following key criteria:
• intersection as part of a main thoroughfare
• number of vehicles coming through the intersection within an hour during peak traffic (must be at least 1,000)

Since most of the federal guidelines are based upon frequency and severity of traffic accidents at a given location the members of Union High School FCCLA were not going to wait until several dangerous or deadly accidents had taken place in order to create change! (They asked themselves, “Which students might be lost if nothing is done and which students might be saved if positive action is taken?”)

Fortunately, after conducting their Teen RSA, Union High School was able to establish that they met the two necessary criteria. By the time that a public meeting could be held, the students had read enough research and talked to enough people who deal with traffic issues to come to the conclusion that traffic lights were not an affordable solution. Construction of a roundabout made more sense.

Challenge #3: Money
Despite meeting the federal criteria for having a traffic light installed, it was cost prohibitive. Traffic lights can cost up to $450,000.00 each and they would need two to three lights due to the proximity of the three schools. In addition, it costs an estimated $7,000 per light in electricity each year. That could result in $1,350,000 to install the lights and another $21,000 a year in electricity. For a small town that has been hit hard by the loss of their coal mining industry, this kind of money is out of the question. Many families have been forced to relocate and leave the area due to loss of coal jobs. Since 2011, the county has had to close three high schools and one elementary school. Neither VDOT, nor the locality could afford the cost of multiple lights and the funding necessary to maintain them.

Successful Results: Thanks to persistence and the hard work of conducting a Teen RSA and building public support, students at Union High School were able to demonstrate that they met federal guidelines for new traffic infrastructure near their school. Despite the prohibitive costs of traffic lights, they came to understand that a more affordable traffic infrastructure option, a roundabout, was a better solution. Roundabouts cost only about $320,000 and require no electricity. This spring the FCCLA members attended a Town Council Meeting, in order to request financial assistance for the trip to Nashville to attend the National FCCLA Leadership Conference to accept the FACTS Roadway Safety Award. During the meeting, one of the Council Members announced that the roundabout that FCCLA members had asked for was going to become a reality. Members of the Coal Severance Committee had been in communication with VDOT, and had allocated money for a new roundabout, which opened on July 28, 2017. The money available was $126,000.00 - far short of the amount normally required for construction. Major efforts of VDOT employees made the project possible. Joey Mullins, of VDOT Wise Residency, designed the roundabout, and supervised the construction process. The ribbon cutting ceremony was held on August 1st. During the last week of July and the first week of August, FCCLA students volunteered their time to work with VDOT models of the roundabout to educate students and the public about how to navigate a roundabout. Students in Big Stone Gap, Virginia are heading back to school this year with new traffic safety infrastructure in place to help keep them and members of their community more safe!