In-Sites

A Semi-Annual Newsletter Published By Bogia Engineering Inc.

Winter 2017

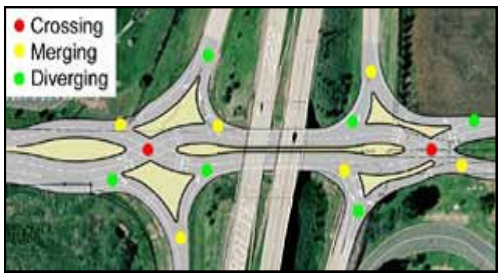
Project Highlight

Diverging Diamond Interchange

A Diverging Diamond Interchange is an interchange design that combines left turning traffic with through traffic. This is accomplished by having both left turn and through vehicles crossover to the opposite sides of the roadway at the ramp terminals. After the crossed over vehicles have passed the first ramp terminal, left turn and through movements proceed without having to stop. This results in a safer interchange operating more efficiently than a conventional interchange.

Advantages to utilizing a DDI design include:

- Increased capacity by 40%
- Reduced vehicular backup
- Minimizes crashes by 50%
- Increased mobility
- Shorter clearance distances
- Reduced construction costs



Located in Springfield Missouri, the first DDI opened in the United States in 2009.

The first Diverging Diamond Interchange to open up in the United States was located in Springfield, Missouri along I-44 and State Route 13. The project was started in January 2009 and completed in July 2009. In addition to being completed on schedule, the DDI also saved the state approximately $7 million dollars. Since opening in 2009, the DDI in Missouri has successfully surpassed the projected performance indicated by traffic modules as well.

BEI has been involved in an on-going proposed project that required careful evaluation of traffic engineering alternatives. After diligent research, the innovative Diverging Diamond Interchange was selected to help ease the flow of the anticipated increased traffic the project will bring to the proposed site. BEI was retained to design the DDI. Our firm recently received approval from PennDOT on the Traffic Impact Study we submitted for this proposed project. Currently our firm is in the process of obtaining a Highway Occupancy Permit (HOP) for the project.

President's Message

Trip generation is the first step in the process of configuring traffic demands based on the approximate number of trips to and from a specific location. The Institute of Transportation of Engineers (ITE) Handbook is used to estimate how many trips can be expected with a new commercial, industrial, or residential project. The handbook provides the ability to compare and contrast freshly collected data with documentation that has previously been collected.

BEI recently completed several traffic studies for manufacturing facilities comprised of buildings that were approximately 50,000-100,000 square feet. As anticipated, trip generations decreased by 1/3 to 1/2 of the documentation presented in the current ITE Handbook. We anticipated the decrease in trips due to manufacturers becoming more innovative in producing their product by employing less, yet still producing the same amount of product.

With the data provided in the ITE Handbook being established in the 1970's and 1980's, we submitted our current findings relating to manufacturing trip generations to PennDOT and ITE for review. Our findings were accepted and are to be included in the new edition of the ITE Handbook.

Obsolete data can create increased traffic costs to applicants in Pennsylvania and across the United States. Applicants were being required to pay more fees for traffic which simply did not exist. The updated ITE Handbook will assist applicants in saving money and assist in making Pennsylvania an economic power house.

Gregg

BEI

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Client Testimonial

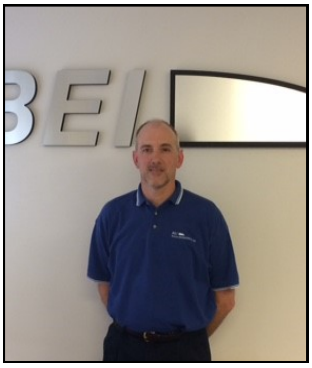
"Bogia Engineering has worked with Glen-Gery on a number of projects over the past ten years. My experience with Bogia Engineering is that they are a very capable and responsive firm to deal with. Often times when you work with outside consultants the consultants are responsive to the needs outlined by the client but are not always proactive. Bogia Engineering always asks the right questions when working on a project to ensure that all the bases are covered. I wouldn't hesitate to recommend Bogia Engineering for your next project."

Eric Vorgity
Corporate Controller
Glen-Gery Corporation

Creative Team Building

The BEI team celebrated the holidays in a unique & fun way together. Our staff spent an evening at the Escape Room in Lancaster. This creative team building exercise allowed each staff member to utilize their strengths to help the team "escape". It was an evening filled with fun, critical thinking, and working together.

The Spotlight is on John



John joined our team in the fall of 2015. John earned his Bachelor of Science in Civil Engineering from Penn State University, Harrisburg Campus. John also graduated from Lincoln Technical Institute with an Associate in Specialized Training Technology (Architectural Drafting and Design). John assists the BEI team as a CADD Technical designer for land development / subdivision, municipal, residential and PennDOT projects. In addition to being a CADD designer, John also assists BEI with field survey work. Through out the summer, John worked with other BEI team members on a large GPS field survey project for PA American Water Company. John currently resides in Orwigsburg with his wife Robin and their three sons. John enjoys Nascar and little league baseball.

Tips and Advice

Winter has most definitely arrived with its frosty temperatures and wintry precipitation. Being conscientious of how care is provided for on properties during the snow removal season can not only protect the property, but will also protect you financially from potential costly maintenance issues when the weather warms up.

As we continue to move through the winter months, here are a few easy steps to ensure safety to your property throughout the remainder of the season:

- Mark the edges of the parking areas, curbing, and sidewalks with reflective fiberglass stakes. Utilizing brightly colored, reflective fiberglass stakes will appropriately mark the property for plowing services; especially if inclement weather is in process during business hours. Clarity of where curbs and sidewalks begin will prevent damage to those surfaces by an errant plow.

- Have snow & ice management products available for treating black top and concrete surfaces. If over used, rock salt can cause small holes in concrete surfaces as concrete is porous. Once the frozen ice and snow begin to melt with a de-icing agent, the porous surface begins to absorb the liquid. Using a calcium chloride ice melt provides safety for those entering and exiting the building, while protecting the integrity of the concrete.

- As snow begins to accumulate on roof tops, continue to inspect the roof. Roofs without a slope are at a higher risk for freezing, thawing, and refreezing. This process can not only block the roof drain, but it can also add weight to the roof. Snow should be removed as needed to prevent damage to the roof in compliance with appropriate safety measures.

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