

JAY J. VORISEK, P.E.

Vice President, CrossRoad Engineers, PC

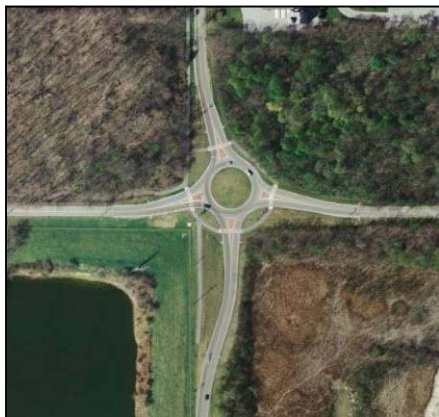
History

Jay is a registered professional engineer in the State of Indiana. He is a 1988 graduate of the University of Illinois, Urbana-Champaign with a B.S. degree in Civil Engineering. Upon graduation, Jay was employed by the Indiana Department of Transportation where he spent 4 years in its Design Division. Since leaving INDOT in 1992, he has worked for private consulting firms and has focused his professional practice on roadway design.

Since 1996 Jay has been involved with the engineering specialty of modern roundabout design. He has received over 90 hours of formal training in the planning and design of modern roundabouts. He designed the first two multi-lane roundabouts built in Indiana which currently handle approximately 30,000 vehicles per day. To date Jay has been involved with the design of 27 roundabouts. He has led analysis and final design efforts on 14 roundabouts, conducted analysis and preliminary design on four, and has provided design review consulting on another nine. Eleven of his designs have been built with two approaching the age of ten years. He is recognized as a leader in Indiana in this specialty and has given presentations at several industry conferences and seminars.

Sample of Roundabout Experience

Hazel Dell Parkway, City of Carmel, Indiana: This \$12 million project involved 5 miles of new 4-lane boulevard from 96th Street to 146th Street. This locally funded project included three bridge crossings, three signalized intersections, and two modern 2-lane roundabout intersections (the first ones in Indiana). The project was developed from alignment study to contract documents in 15 months. Weekly progress meetings were used to keep design and right-of-way acquisition on track. Jay served as Project Manager as well as Project Engineer in charge of all roadway design.



106th Street and Gray Road Roundabout, City of Carmel, Indiana: This \$500,000 project involved the analysis and design of a modern roundabout to replace an all-way stop control 4-legged intersection. The intersection is on a corridor heavily used by drivers commuting to and from Indianapolis and they experienced extremely long queues and delays daily. The roundabout was designed offset to the east of the existing intersection in order avoid an expensive relocation of a petroleum pipeline. Jay served as the Project Manager and Senior Engineer responsible for conducting the traffic analysis, design, and plan development.

131st Street, 136th Street, and Spring Mill Road Reconstruction, City of Carmel, Indiana:

These locally funded projects involved approximately 2 miles of curbed roadway and 4 modern roundabouts. Additional right of way and utility relocations were kept to a minimum through careful and precise geometric design. Jay served as Project Manager and Senior Engineer for design of these divided urban boulevards and roundabouts. He analyzed roundabout performance for existing and 20 year forecast traffic for both the AM and PM peak hours. The analysis showed that the roundabouts could be expected to perform with acceptable levels of service for 10 to 15 years as single lane roundabouts. However, in years approaching the 20 year design life additional lanes would likely be needed. Therefore, Jay designed the 4 roundabouts for the multi-lane ultimate build but developed the construction plans for all the roundabouts to be single lane. When the time comes they can be expanded easily with minimal disruption to the motoring public and no additional right of way or utility conflicts.



McKenzie Avenue and Broadway Street Roundabout, City of Greenfield, Indiana:

This project involved the analysis and design of a modern roundabout to replace an all-way stop intersection. The roundabout was designed offset to the west in order to take advantage of city owned land and thus eliminate the need to purchase additional right of way. Consideration was given to large trucks because Broadway Street is a detour for nearby SR 9 during the annual Riley Festival. Therefore, the roundabout was designed so that an interstate semi trailer can traverse the intersection. Jay served as the Project Manager and Senior Engineer responsible for conducting the traffic analysis, directing and reviewing design work, and plan development.

Moore's Pike and Renwick Boulevard Roundabout, Bloomington, Indiana:

This project involved the design of a modern roundabout at the entrance to a new residential development. Jay was contacted by City of Bloomington officials to provide professional advice as to a developer's proposed plan to construct a roundabout on this east-west thoroughfare. As a result, the developer enlisted Jay to design the roundabout's geometrics. He also participated in neighborhood, council, and board of public works meetings to present the design and answer questions and concerns.





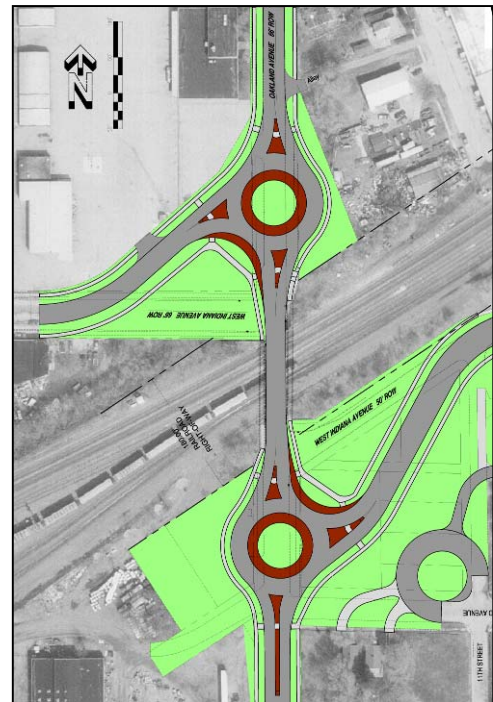
CR 100 S and Raceway Road Roundabout, Hendricks County, Indiana:

This project involved the analysis and design of a modern roundabout to replace a signalized 4-legged intersection where commuters experience long queues and delays daily. During the study stage an expanded signalized intersection with turn lanes and a roundabout were each examined. Both intersection types offered similar capacity/delay performance over the first few years but the roundabout was chosen for its ability to provide a longer service life at a lower construction cost. The roundabout was projected to be able to handle traffic for nearly 20 years while the signalized alternate would

have required additional expansion after 10 years in order to maintain an acceptable level of service. The roundabout was designed to fit within existing platted right of way in 3 quadrants of the intersection and required minimal right of way in the 4th quadrant. The roundabout was also designed so as not to affect 2 nearby bridges. Jay served as the Project Manager and Senior Engineer responsible for conducting the roundabout traffic analysis, designing the geometry, setting grades, and developing plans. The roundabout was constructed and opened to traffic in the summer of 2007.

Indiana Avenue and Oakland Avenue Roundabout Study, City of Elkhart, Indiana:

This study was performed to determine the feasibility of replacing signalized intersections on each side of a railroad overpass with roundabouts and increase the traffic capacity while not requiring modifications to the existing bridge. Jay performed all aspects of the study which included a roundabout traffic capacity analysis and preliminary geometric design. The analysis showed traffic volumes could grow over 57% before the first of the six roundabout entries reached capacity. At existing traffic volumes all approaches of the roundabouts would be expected to perform at Level of Service A with less than 9 seconds of delay per vehicle; and, since the expected queue between the roundabouts is only two vehicles, operations would not be adversely affected by the short distance separating the intersections. Sight distance limitations caused by the railroad overpass would become a non-issue with the roundabouts as drivers would no longer need to see the overhead signals.



Unlike the existing pair of signalized tee intersections, an interstate size tractor trailer would be able to negotiate both roundabouts from all directions. The roundabouts would also force traffic to slow thus making the intersections safer for motorists and pedestrians. In summary, the study found that the roundabouts could be constructed without affecting the existing railroad overpass while providing superior traffic capacity, improved safety, and a unique opportunity for landscaping enhancement.