

# CONCRETE solutions

Michigan Concrete Paving Association

Fall 2006

*“Agencies need a fair and objective system of choosing among the many construction options if they are to have any hope of building and repairing roads in a cost effective manner,” – Dan DeGraaf, MCPA Executive Director*

## Roundabouts are Coming, There's Just no Getting Around it...

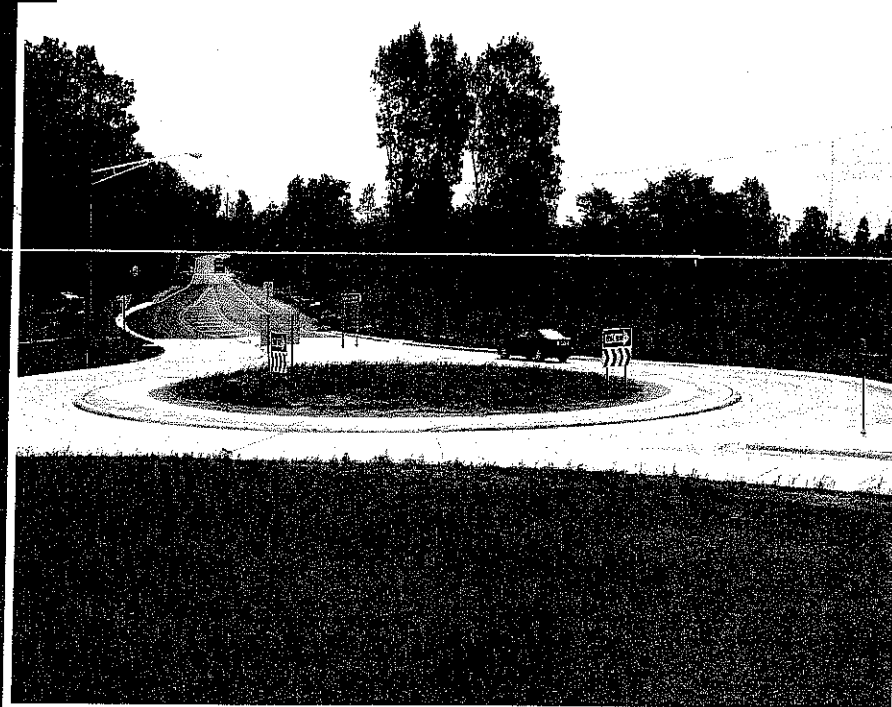
*“At the roundabout, take a circular left,”* What?

As roundabout intersections grow in popularity in Michigan and across the nation, getting directions from the clerk at the gas station may sound a lot like the statement above. The transition from traditional four-way stops and intersections

controlled by traffic signals has already begun - there are 15 functioning roundabouts in operation in Michigan (see chart), but several more are on the drawing table.

Why?

It's because roundabouts can handle greater traffic levels in a more efficient manner with fewer delays than traditionally



*Concrete roundabouts are easy to construct and durable.*

designed intersections. They are safer,

reduce pollution and save fuel for motorists. Roundabouts are more appealing aesthetically, and it's been demonstrated they have lower maintenance costs when compared with intersections equipped with stoplights. The forces of tight turning trucks make concrete roundabouts the only durable, rut resisting surface that will last.

Livingston County built five roundabouts in just the last three years - the Kensington/Jacoby Road roundabout located three miles north of I-96 on Kensington Road opened in early September. The four others are located at Third and Main in Brighton and three at US-23 and Lee Road.

The three roundabouts at Lee Road and US-23 that opened to traffic a year ago might very well provide the greatest challenge to motorists because of the two conjoined roundabouts constructed on the west side of US-23. It is probably the first

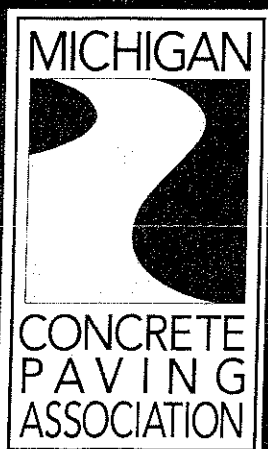
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such configuration anywhere in the United States, according to Livingston County Road Commissioner Managing Director, Mike Craine. "Despite the potential for motorist confusion however, there have only been a few fender-benders on the two roundabouts," Craine said.

A roundabout is defined as *an unsigned circular intersection engineered to maximize safety and minimize traffic delays*. Wow! That's a mouthful. Truth is, they work. Over the last decade more than a thousand of them have been built in the United States. According to information published on the Livingston County Web site, roundabouts can reduce fatal accidents and injury related crashes by as much as 76 percent, and they decrease aggressive driving behavior as well.

Despite the fact the U.S. has been slow to embrace the use of roundabouts, they are very popular in Europe and other parts of the world. The United Kingdom alone has more than 10,000 of these circular intersections and Australia has as many as 15,000.

Like anything new, roundabouts take some getting use to. Informational and educational materials are abundant on the Internet. "You can spend days scanning through these sites and never get to the end," Craine said. "Most of the material deals with how to maneuver through roundabouts. We have done a lot on our site to educate motorists, and so has the Michigan Department of Transportation."

Ninety-six documents can be found on the MDOT Web site relating to roundabouts. The department has done an excellent job in not only educating the public on how to drive through a roundabout, but on numerous issues related to the design, construction and safety of these new

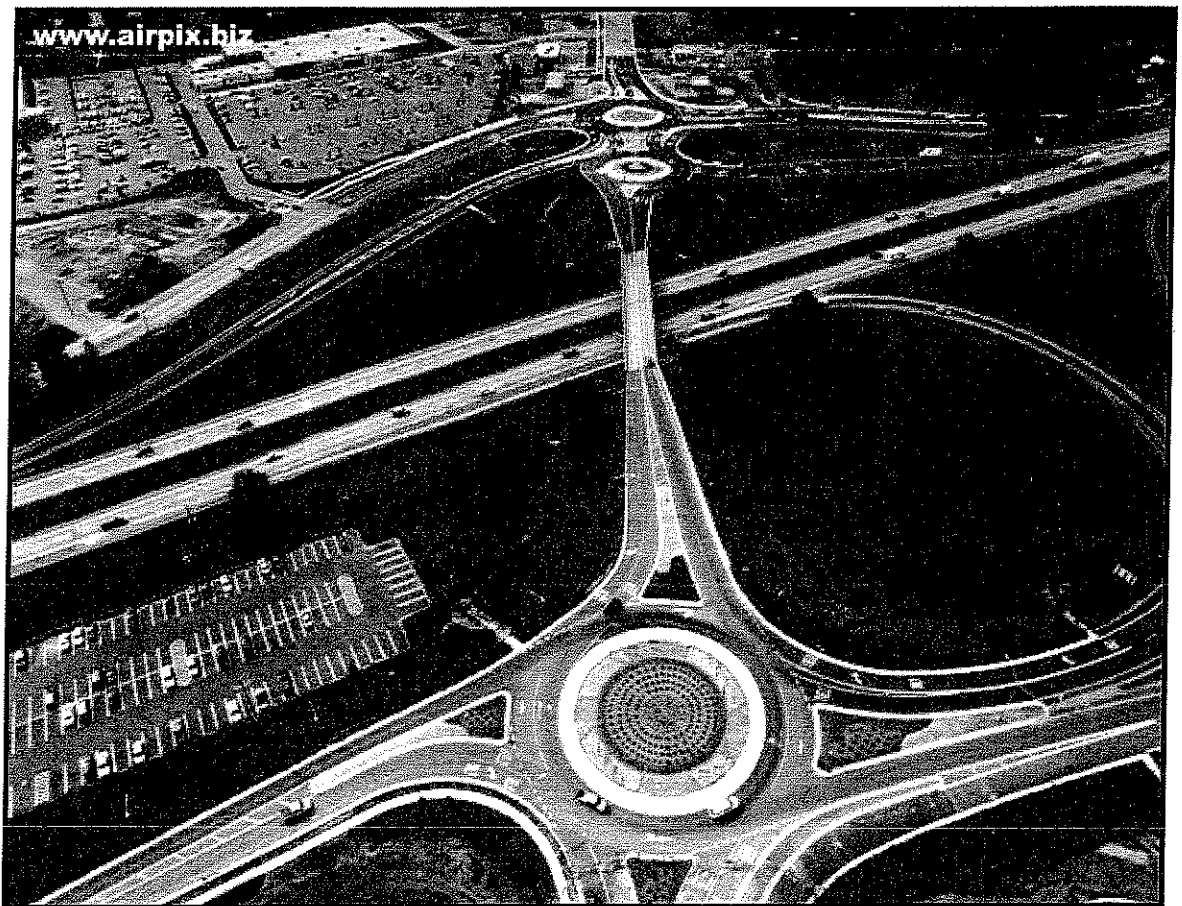
***"Once drivers have driven through a few... their apprehension normally subsides considerably."***

***– Mike Craine,  
Livingston County  
Road Commission  
Managing  
Director***

structures, says Craine.

"It's a good idea to spend a little time reviewing these tutorials on how to successfully navigate roundabouts," said Craine. When you encounter one of these intersections, there isn't time to look at a diagram or study instructions before you enter the roundabout. Once drivers have driven through a few of these, their apprehension normally subsides considerably. "The key is to observe pavement markings and always yield to the vehicle on the left," Craine concluded.

For road jurisdictions considering building roundabouts, there are numerous sources of information readily available on the Internet. One of the more prolific sites is hosted by the Federal Highway Administration (FHWA). An example is the report identified as FHWA-RD-00-067 written in June of 2000. This 284-page report, entitled *Roundabouts: An Informational Guide*, provides planning



*Lee Road at US-23. Photo Courtesy of Livingston County Road Commission*

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information for transportation agencies including general information about roundabouts, planning techniques, evaluation procedures and policy considerations. The guide was developed by transportation practitioners and researchers from around the world and explains in detail the multiple aspects of designing and building roundabouts from policy development to geometric design. It addresses a broad range of topics including roundabout operation, safety, landscaping, system considerations and even public education.

The Michigan Concrete Paving Association is working with road authorities and contractors in the design and construction of roundabouts.

"We worked closely with Livingston County, and we are able to assist engineers with a joint layout plan that follows the striping and workable staging plans," said Dan DeGraaf, MCPA executive director. "Staging and joint layout, for example, are two important considerations for engineers when designing concrete roundabouts."

"Staging and joint layout are relatively straightforward processes with single lane roundabouts, but multi-lane roundabouts can appear a bit more challenging. However,

our experience is that they are not," according to Kerry Sutton, MCPA director of engineering for southeast Michigan. "I have been working with road agencies in southwest Michigan helping them with alternatives they should consider."

As congestion problems increase statewide, road authorities will continue to look for methods to resolve the problem. It is inevitable that roundabouts will increasingly figure into the equation - there's just no getting around it. ■

Roundabouts in Michigan			
Location	Year built	Traffic Volume	Additional Information
Ingham County at Marsh and Hamilton roads in Okemos	2000	Approx. 2,000 vehicles per hour at peak hour	
Ingham County at Bennett and Hulett	2004	1,500 Vehicles per hour at peak hour	Built with Federal safety funds
Sterling Heights on M-53 at Van Dyke and 181/2 Mile Rd. Inerchange	2004	4,000 vehicles per hour at peak hour	First roundabout on MDOT route
Bogue Street and Shaw Lane on MSU campus.	2000	Not Available	Converted from a traffic circle to roundabout
Orion Township at Baldwin Road, Indian Wood Road and Coats Road	2003	7,400 from Baldwin per day, 1,300 from Indian Wood per day, 900 from Coats per day	Roundabout chosen over traffic signal due to geometric construction of the intersection
At the border between the cities of Rochester Hills and Rochester at Tienken Road, Runyon Road and Washington Road	1999	Daily traffic of 10,000 at Tienken, 1,500 at Runyon and 2,200 at Washington	Roundabout chosen over traffic signal due to geometric construction of the intersection
At the border between the cities of Rochester Hills and Rochester at Tienken Road and Sheldon Road	2001	Not Available	Roundabout chosen over traffic signal due to geometric construction of the intersection
Commerce Township at Loop Road and Commerce Crossing Road	2003	Not Available	
Windsor Township in the Village of Dimondale at Creyts Road and East Road	2001	5,500 Vehicles per day	First mini roundabout in America
Muskegon County on Walker Road running from Apple Ave. to Marquette	2003	About 2,000 vehicles per day	Located in a developing area with light conditions. So far has been successfully accepted by drivers
City of Jackson at Fourth Street and West Avenue	August 2000	4,117 from south leg of Fourth Street, 9,065 from north leg of Fourth Street and 6,189 from West Avenue	Created because West Ave. was extended to meet Fourth St. Since roundabout was built, traffic through bypassed neighborhoods has decreased by two-thirds
Brighton Township at Main and 3rd streets.	September 2003	Approximately 20,000 vehicles per day	Successfully alleviated a problematic intersection
Shelby Township at 25-mile and Hayes Road	2005	Daily traffic of 11,000 from Hayes and 8,000 from 25-mile	Single lane
City of Sterling Heights at Dodge Park and Utica	2004	Daily traffic of 11,000 from Dodge Park and 25,080 from Utica	Multi lane
Livingston County at Kennington and Jacoby Road	August 2006	Not Available	

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