

Outlook

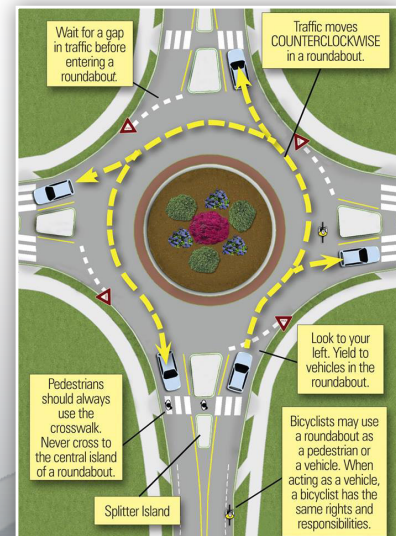
"Your project. Our passion."

INTERSECTION REVOLUTION

Changing directions in today's traffic control

If you drive in Florida, you've undoubtedly noticed an increasing number of non-traditional intersections. Though traffic signals and stop signs are still the most common type of intersection traffic control in use today, alternative intersections are quickly gaining popularity throughout the state. Modern roundabouts, in particular, have seen a tremendous uptick in recent years. So why the shift in intersection traffic control methodologies?

As a confluence of vehicles, bicycles, and pedestrians, roadway intersections have the greatest impact on the general safety and efficiency of a given transportation network. For these reasons, safety and efficiency, alternative intersections are becoming more common. From a safety perspective, by minimizing the number of conflict points and lowering the relative speeds of conflicting vehicles, you can decrease the chances of crashes with serious injury. Also, by reducing delays and increasing "green time" at intersections you can improve the intersections efficiency, thus reducing traffic congestion. The roadway designers' goal is to maximize both safety and efficiency, and there can be multiple ways to do that.



Roundabouts are not a new concept. They are widely used in other parts of the world, and more common in other states within the US. In more recent history, some of the kinks with older "traffic circles" have been worked out lending to improved design and better functionality, hence today's common reference as "modern roundabouts".

CONTINUED ON PAGE 2



Johnson Engineering provided construction engineering & inspection (CEI) services for the newly completed roundabout at the intersection of Gateway Blvd and Commerce Lakes Drive in Fort Myers, designed by Cardno, constructed by Wright Construction Group.

A quarterly publication by:



Fall 2021

In This Issue:

Intersection Revolution



Adopt-A-Canal Program



The 2018 Florida Greenbook is Now in Effect



"Support Our Schools" School Supply Donations



PEOPLE & PROJECTS: ON THE MOVE



Tyler Sharpe, PE



John Glenn, PE

At the most recent company stockholders meeting, Tyler Sharpe, PE and John Glenn, PE were named as new company stockholders. Both FGCU graduates, Tyler and John joined our team in 2012. Tyler is a civil engineer providing site design and project management in our Development group and John is a project design engineer and CEI project administrator in our Transportation group.

While some remain skeptical, the use of roundabouts is relatively simple. All traffic moves in a counterclockwise circle (and yes, they flow clockwise in the United Kingdom). Approaching vehicles must yield to vehicles already in the circle. You enter the circle when there is gap and simply exit in your desired direction. Multiple lane roundabouts will typically have sufficient signing and marking at the approach, instructing drivers which lane they should be in depending on their desired destination. Once accustomed to them, many folks prefer them over traditional stop sign or traffic signal-controlled intersections.

The safety benefit of roundabouts is two-fold. First, by forcing all vehicles to slow down, the severity of collision and chance of serious injury is greatly reduced (remember Newton's second law?). Secondly, by having all traffic move in a similar direction, the total number of conflict points is reduced. Similarly, pedestrians are crossing where vehicles are traveling at slower speeds. "Splitter Islands" on the approaches also give pedestrians a refuge, allowing them to cross only one direction of traffic at a time.

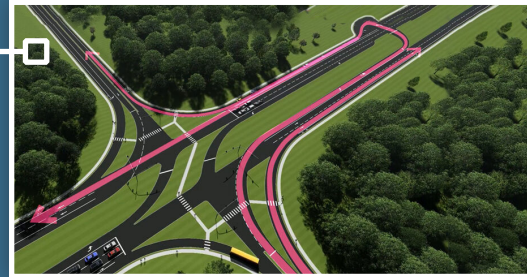
While there are decided benefits, there are also a couple drawbacks to roundabouts. One is the increased area needed for the circle. In urban situations or intersections with very tight right-of-way there may not physically be enough room. Roundabouts are also not typically used, at least in Florida, on six lane or higher roadways due to the increased complexity of movements.

Roundabouts are not the only alternative intersections gaining popularity, but most work under the same general premise...get rid of the left turn. Left turns take a lot of "green time" away from other movements. Think about it, to turn left at a traditional intersection, you need to cross the opposing through traffic and both lanes of cross traffic. That means three out of the four major movements have to stop for you to turn left. With a finite amount of green time available in any cycle, signal timing becomes a question of which movement needs it the worst. Effective alternative intersections are those that are able to "get rid of the left". In roundabouts, everyone makes a right to get in, and a right to get out. The counter-clockwise flow is essentially a continuous left. Some examples of other common and successful alternative intersections are displayed on the right.

There is not a "one size fits all" solution for every intersection. To help engineers decide which is best the Florida Department of Transportation has developed the ICE (Intersection Control Evaluation) analysis method. Finding the right solution is not always an easy answer but the good news is... we have options!

For more information, contact Ryan Bell, PE, PTOE at (239) 461-3310 or rbell@johnsoneng.com. ■

RESTRICTED CROSSING U-TURN (RCUT)



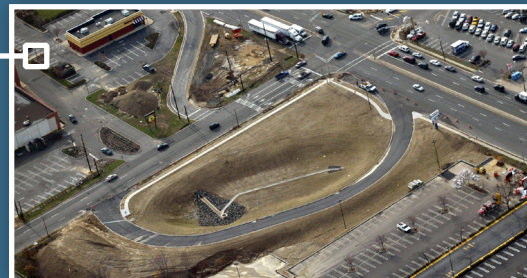
RCUT's effectively remove the left and the crossing movement on a main thoroughfare by making all side roads turn right and then make a U-turn. This is effective for roadways with heavy mainline traffic and numerous smaller side streets.

DIVERGING DIAMOND INTERCHANGE (DDI)



Effective as freeway interchanges, DDI's actually switch through traffic to the other side (left side) of the road. By placing a traffic signal between the ramps, you allow all free-flow access to the main freeway and the two signals only have cross through traffic.

JUG HANDLE



Approaching traffic wishing to make a left will exit the roadway on the right side of the road, just before or just after the intersection then swing out wide so that it can cross the mainline traffic perpendicularly. These are effective in areas where you have a particularly heavy left turn volume.

CONTINUOUS FLOW INTERSECTION (CFI)



Also known as a Displaced Left Turn (DLT), these intersections work by having those wishing to make a left, actually make a left before the intersection, and then wait in a left storage turn lane that is on the other side of the opposing through lanes. These lefts are then "emptied" while both directions of through traffic are flowing. CFI's are effective where both intersecting roadways have heavy left and through traffic.

THE CITY OF FORT MYERS ADOPT-A-CANAL PROGRAM STILL MAKING AN IMPACT

In 2010, the City of Fort Myers launched their Adopt-A-Canal program. This program was designed as an attempt to decrease the amount of litter that flows through the City's municipal separate storm sewer system, ultimately affecting the health of the Caloosahatchee River. The City selected 10 canals covering 12 miles of waterways and encouraged local businesses to adopt one canal and remove debris on a quarterly basis.

Johnson Engineering chose to adopt Carrell Canal, the vital water way that discharges directly into the Caloosahatchee River and runs through a water basin we designed at the Fort Myers Country Club. By keeping this portion of the canal clean, it not only helps maintain the pristine appearance of the Fort Myers Country Club, it allows our water management system to run more efficiently and helps to improve the water quality before discharging into the river.

Johnson Engineering previously received a first place Community Service Award from the City of Fort Myers for our successful efforts removing more trash than any of the seven other businesses participating in the program.



Although originally committing to two years, our employees have continued to donate their time on a regular basis throughout the last 11 years to collect trash and debris from the canal. To date, volunteers have collected an astonishing 454 bags of debris, totaling nearly 25,000 gallons of trash from the one mile stretch of canal.

We made this commitment because of our deep roots in the community dating back 75 years. Our firm has worked, in one capacity or another, on all of the canals in this program throughout our long history and we want to continue doing our part to help improve the health of our community.

For more information, contact Juli-Anne Kern at (239) 334-0046 or mkt@johnsoneng.com. ■

THE 2018 FLORIDA GREENBOOK IS NOW IN EFFECT

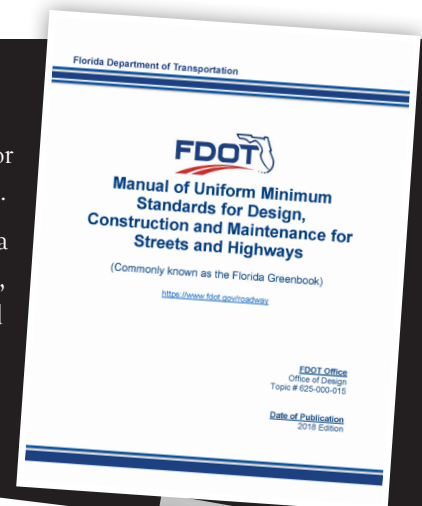
The Florida Department of Transportation's (FDOT) 2018 Manual of Uniform Minimum Standards for Design, Construction and Maintenance (aka the Florida Greenbook) is now effective as of July 20, 2021.

The purpose of this manual is to provide local agencies uniform minimum standards and criteria regarding the planning, design, construction, and maintenance of all public streets, roads, highways, bridges, sidewalks, curbs and curb ramps, crosswalks, bicycle facilities, underpasses and overpasses used by the public for vehicular and pedestrian travel.

Each year the Florida Greenbook Advisory Committee reviews the handbook's content and provides comments, questions, and suggestions to be reviewed to ensure the handbook remains current.

This committee consists of four professional engineers within each of the FDOT's seven district boundaries representing an urban center, a rural area, one FDOT employee, and one non-government employee. This diverse group brings practical knowledge, first-hand experiences, real world scenarios, and years of education to the table to keep this book current and up-to-date. The date on the book reflects the year the committee approved the language prior to it going through the State approval process.

It is available for use or download at <https://www.fdot.gov/roadway/floridagreenbook/fgb.shtm>. For more information, contact Andy Tilton, PE at (239) 334-0046 or atilton@johnsoneng.com. ■



Outlook

JOHNSON
ENGINEERING



Volume 48, Issue 76

Prsrt Std
US Postage
PAID
Ft. Myers, FL
Permit #215

Office Locations

Corporate Headquarters
2122 Johnson Street
Fort Myers, FL 33901

2350 Stanford Court
Naples, FL 34112

17829 Murdock Circle, Suite B
Port Charlotte, FL 33948

251 W. Hickpochee Avenue
LaBelle, FL 33935

17900 Hunting Bow Circle
Suite 101, Lutz, FL 33558

201 S. Berner Road, #3
Clewiston, FL 33440

Comments, questions or to receive future newsletters electronically, e-mail mkt@johnsoneng.com.
© 2009 by Johnson Engineering, Inc. All rights reserved. No materials or photographs in this publication may be reproduced without written permission from Johnson Engineering.

1.866.367.4400 | www.johnsonengineering.com
Engineers | Surveyors | Planners | Ecologists | Landscape Architects | Geologists | Scientists



JOHNSON ENGINEERING EMPLOYEES "SUPPORT OUR SCHOOLS" WITH MUCH NEEDED SUPPLIES

Johnson Engineering's "Support Our Schools" initiative grew out of our belief that private enterprise has an ongoing responsibility to contribute to the education and learning of the young people in their local communities. We also believe that their teachers, who play such a vital role in their student's growth and development, are truly the unsung heroes of our communities. They deserve every opportunity possible to have whatever supplies and equipment they need to teach effectively. This perspective led to Johnson

Engineering's "Support Our Schools" Program, which is designed to benefit

K-12 schools in the Counties in which we have offices by participating, sponsoring, and donating to a variety of community relations efforts to directly and positively impact the school's teachers and students.

This fall, Johnson Engineering employees donated hundreds of school supplies to the School Districts of Lee, Pasco, Hendry, and Charlotte Counties. Community support is such an important resource for our schools. Improving education resources can better prepare our children who will become our future workforce. We wish the teachers and students a successful 2021-22 school year.

For more information contact Dana Hume, PE at (239) 461-2471 or dhume@johnsoneng.com. ■

