Transportation

Planning & Engineering

JT Butler & US-1/Philips Highway parallel flow microsimulation[1]

GFParsons
Jacksonville, Florida
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GFParsons has been providing successful cost effective and innovative transportation solutions to state and local governments for over 25 years.

Planning & Engineering Services

- Preliminary engineering
- New & reconstructed roadways
- Roundabout planning & design
- Urban and rural corridors
- Complex roadways
- Non-traditional junctions
- Interchange justification & modification studies

Other Services

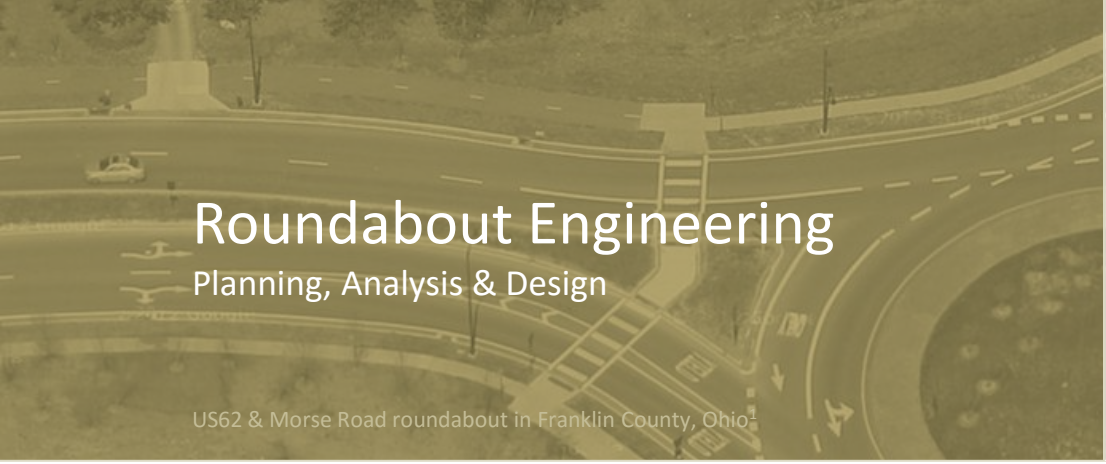
- Traffic microsimulation
- NEPA design compliance
- Project management
- Value engineering
- Decision support (based on the Analytic Hierarchy Process)

The Hilliard Triangle[2] - winner of the Ohio 2013 ACEC Outstanding Achievement Award

[1] Chief design engineer HNTB – PD&E
[2] PM & chief engineer TranSystems – PD&E

Roundabout Engineering

Planning, Analysis & Design



US62 & Morse Road roundabout in Franklin County, Ohio[1]

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Starting in 2013, the Florida DOT requires that roundabouts be screened as the preferred alternative for all new and reconstructed intersections on state routes. GFParsons designed and FDOT Central Office reviewed the roundabout (pictured below) on SR-13 in St. Johns County. The roundabout opened to traffic in 2013.

Roundabout Services

- Single- & multi-lane
- Justification & feasibility
- Technical reviews
- Siting and layout
- Capacity analysis
- Traffic microsimulation
- Pedestrian facilities
- Signing & striping
- Lighting guidance
- Construction phasing
- Right-of-way needs
- Public education

Concept and final design for single lane roundabout on SR13 in St. Johns County, Florida. Reviewed by FDOT Central Office.[2]

Award winning concept. Closely spaced intersections with multilane roundabouts and signalized traffic meter. Adjacent school in busy business district.[3]

Concept and final design. First roundabout constructed on the Ohio state highway system. US62 & Morse Road, Franklin County, Ohio[1]

Approved Interchange Modification Study roundabout diamond alternative in Mansfield, Ohio[3]

Testimony from a motorist living near the Morse Road roundabout -

"Since the traffic light was replaced by a roundabout the traffic flow is much better, and the long lines of stopped cars are a thing of the distant past."

Roundabout Experience (14 total)

No	Lanes	Type	Location	Stage
2*	***Single***	***Rural***	***St Johns, FL***	***Study & Design***
2	Multi	Urban	Gainesville, FL	Study
1	Multi	Urban Diamond	Jacksonville, FL	PD&E Alternative
1	***Multi***	***Urban***	***Columbus, OH***	***Study & Design***
2	***Multi***	***Urban***	***Hilliard, OH***	***Study***
2	Multi	Urban Diamond	Mansfield, OH	Study
1	Multi	Urban	Columbus, OH	Study & Design
1	Single	Urban	Columbus, OH	Study
2	Multi	Urban Diamond	Cincinnati, OH	Study

Constructed (* on SR-13 one of two built)

[1] PM & chief engineer TranSystems - PD&E & Final
[2] Roundabout engineer TranSystems - PD&E
[3] PM & chief engineer TranSystems - PD&E

Complex Roads & Corridors

Planning, Analysis & Design

Single point diamond interchange concept at Port Columbus Int'l Airport[1]

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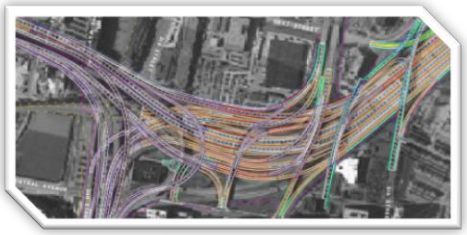
$125 million JT Butler I-95 interchange reconstruction in Jacksonville, FL.[3]

$600 million I-75 Millcreek Expressway reconstruction in Cincinnati, OH.[2]



$2.5 billion Brent Spence I-71/75 corridor reconstruction in Cincinnati, OH.[2]

$500 million Portsmouth Bypass in Scioto County, OH. Final link of the Appalachian highway system.[2]

GFParsons has over 25 years experience in preliminary and final design of urban and rural freeways, interchanges and arterial corridors. Special emphasis is on alternatives development in the PD&E phase guided by extensive NEPA knowledge.

GFParsons works closely with stakeholders and DOT staff to develop viable alternatives for any scope of project from a single intersection improvement to urban freeway reconstruction mega-projects to ensure the project purpose and need is met cost effectively and with least impact.

Designs can be expertly modeled with the traffic microsimulation program VISSIM if the client desires to gain greater understanding of traffic operation and to provide illustrative animations of the design. This is a particularly useful tool for non-traditional or complex junctions.

Complex Roads & Corridors Services

- Concept & alternatives development
- Mainline horizontal and vertical geometry
- Complex ramp geometrics
- Interchange justification and modification studies
- Interchange type evaluation
- Non-traditional interchanges including the diverging diamond and roundabout diamond
- Review and quality control
- NEPA compliance
- Environmental impact assessment and avoidance
- Pavement markings and signing
- Maintenance of traffic and construction phasing
- Right-of-way needs
- Value engineering support
- Public involvement support
- Cost estimating

[1] PM & chief engineer URS – PD&E
[2] PM & chief engineer TranSystems – PD&E
[3] Chief project engineer HNTB – PD&E

The Parallel Flow Intersection

High Capacity Signalized Traffic Junction

Microsimulation of two-phase parallel flow intersection

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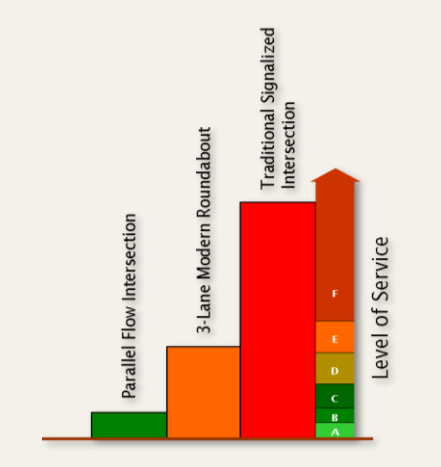
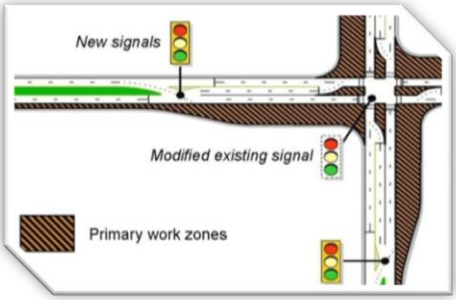


PFI offers significant delay reductions over traditional signalized and even three lane roundabout intersections.



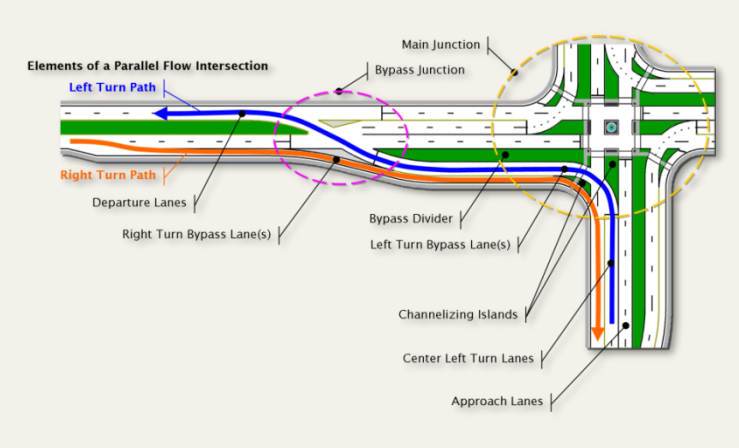
Quick conversion to PFI since most work is performed on outsides of existing.

The PFI can be built as a parclo, folded (shown above) or spread diamond interchange with higher capacity than other service interchanges including the diverging diamond.

The parallel flow intersection (PFI) is an innovative two or three phase signalized intersection for which Greg Parsons received the patent in 2006 (US Patent No. 7,135,989).

The design is similar to the continuous flow intersection (CFI) but there are important differences. The PFI requires 50% less approach length and affects different intersection quadrants.

The PFI is simpler to phase and operate than the CFI. And drivers are provided a more intuitive left turn. Most work required to convert to a PFI is on the outsides while the CFI can require considerable approach road widening for the left turn lanes.



The PFI has not yet been constructed but the design has been included in several studies as an alternative and the subject of several research papers.

See ITE Journal Oct 2010 article *The Parallel Flow Intersection: A New Two-Phase Signal Alternative* for technical details or contact GF Parsons for additional information.

Bio

Greg Parsons, P.E.
Owner

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www.gfparsons.com

Summary

- Over 25 years as a technical innovator, design engineer and project manager in transportation.
- Invented and patented the parallel flow intersection, a high capacity signalized urban intersection or service interchange.
- Experience in FDOT Districts 2 and 4 including PD&E studies for Interstate and state routes and roundabout design on state system.
- Chief engineer and project manager of preliminary development for several mega-projects involving capacity upgrade of urban Interstate and new freeway alignments.
- 11 years experience in modern roundabout planning, analysis and design, multi and single lane.
- Preliminary development and final design of urban and rural roadways, new alignments and widening, freeways and arterials.
- Intersection and interchange specialization with emphasis on urban high-capacity interchange and intersection concept development.
- Expertise in nontraditional junctions including the patented parallel flow intersection, continuous flow intersection, modern roundabout, diverging diamond interchange and superstreet.
- Chief engineer for preliminary development of I-75/I-71 Brent Spence Bridge ($2.5 billion) and I-75 Mill Creek Expressway ($600 million) in Cincinnati, Ohio and SR-823 Portsmouth Bypass ($500 million) in southeastern Ohio.

Education

B.S. Civil Engineering
University of Kentucky
1986

Ask for references

Publications & Professional Presentations

Innovative Intersection/Interchange Panel
OTEC 2007

The Parallel Flow Intersection: A New Two-Phase Signal Alternative
ITE Journal Oct 2007

The Parallel Flow Intersection: A New Two-Phase Signal Alternative
OTEC 2006

Parallel Flow Intersection: A Modern High-Capacity Traffic Intersection
White Paper Feb 2006

The Modern Roundabout: An Introduction
Mid-Ohio Regional Planning Commission TAC Presentation 2003

Certifications & Professional Development

- Ourston Roundabout Design Workshop
- TRB Roundabout Conference
- McCulloch Roundabout Design Workshop
- 2-Week NEPA Certification (Ohio)
- 1-Day Cat Ex Certification (Ohio)
- Project Development Process Training
- Local Public Financing
- ADA Certification

Patents

"Parallel flow vehicle turn system for traffic intersections" U.S. Patent No. 7,135,989

Registered Professional Engineer

Florida (PE#67139)

Previous Employers

- TranSystems
- HNTB
- URS