


Roundabouts: Washtenaw County Experiences

2020 County Engineers Workshop
February 4, 2020



  @Washtenawroads



Outline

- Matt MacDonell – County Highway Engineer
- Mark McCulloch – Senior Project Manager
- Evolution of rightsizing roundabouts
 - Textile Road / Hitchingham / Stony Creek
 - Baker Road / Dan Hoey / Shield
 - Bemis at Moon
- Suggestions for rightsizing success

Who are we?

- Washtenaw County
 - 344,000 citizens
- WCRC
 - 1,653 miles, 580 miles for MDOT
 - \$31 million MTF
 - \$22 million Federal/State Aid Projects
 - 130 staff



Why build roundabouts?

- Intersection study
 - Traffic and pedestrian safety
 - Traffic capacity and operations
 - Construction and maintenance costs
 - Non-motorized access
 - Right-of-way and environmental impacts
 - Opportunity for place-making and aesthetic enhancements



TEXTILE: OUR FIRST MINIS

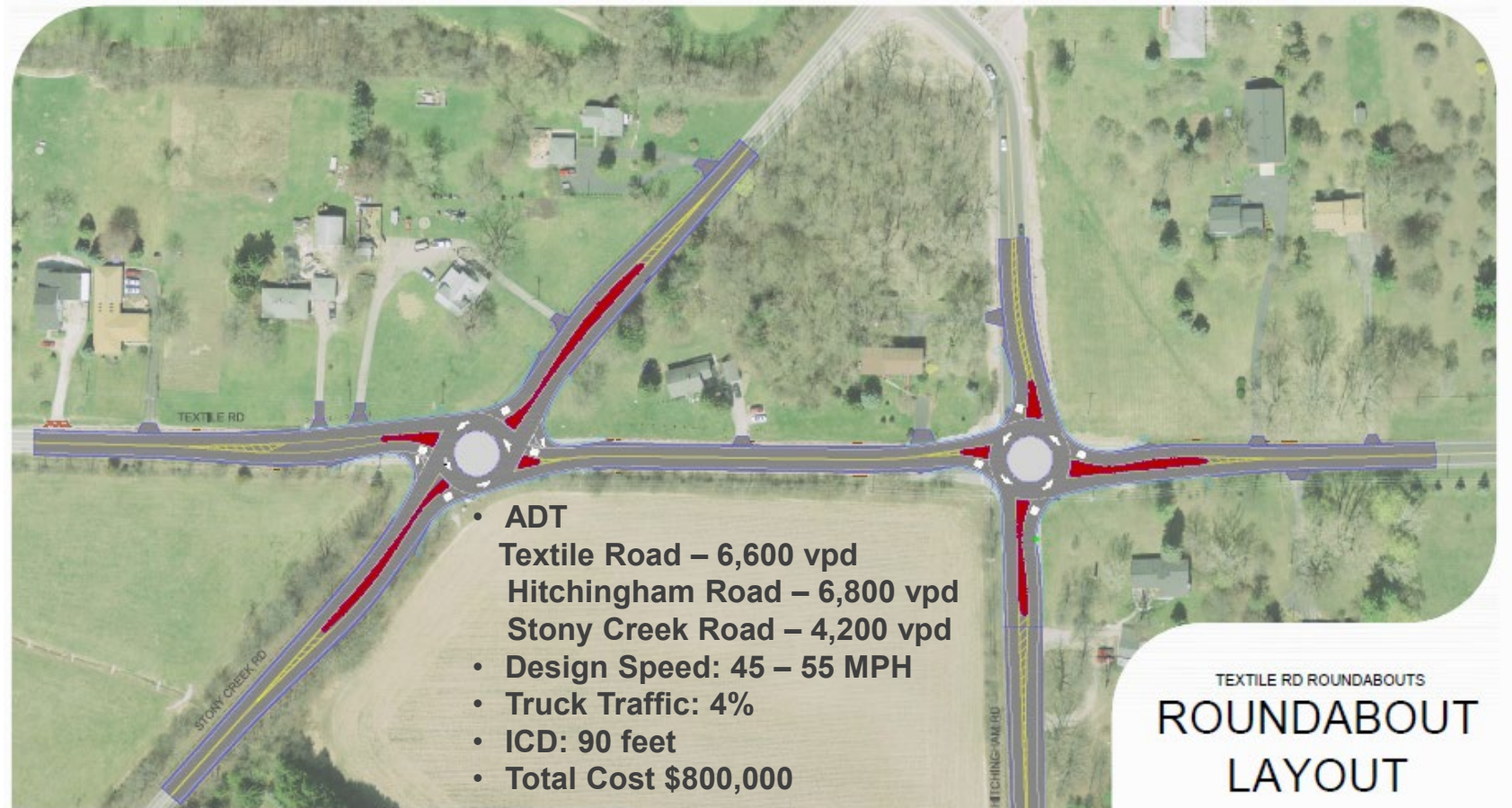


Textile existing conditions

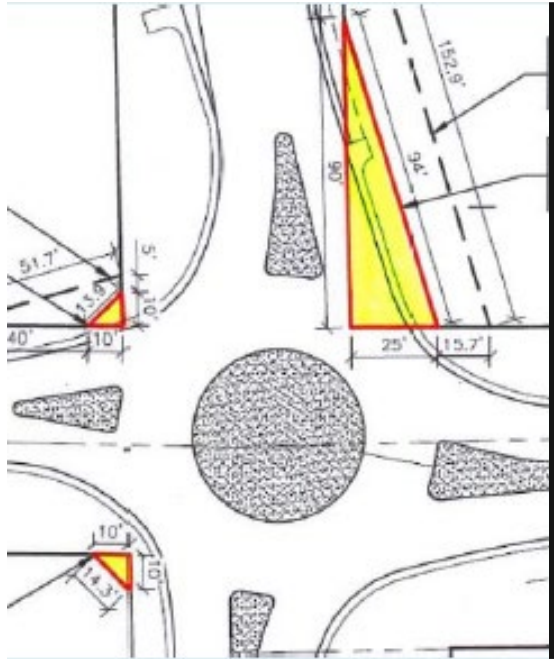


- **AWSC**
- **Purpose: increase capacity**
- **Project year: 2015**
- **Charter school**

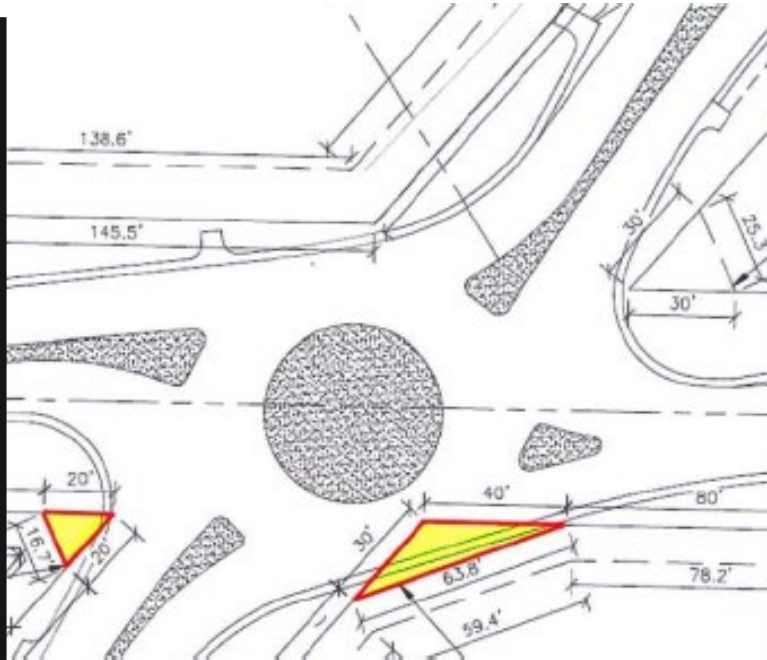
Textile footprint



Slivers, not chunks



Textile @ Hitchingham



Textile @ Stony Creek

Textile / Hitchingham
1,225 sft (0.03 acres)

Textile / Stony Creek
605 sft (0.01 acres)

92% area reduction
compared to Pontiac
Trail / Seven Mile

Total Land Cost:
\$3,575 (2014 dollars)

How are costs minimized?

- Less earthwork
- Less storm sewer infrastructure
- Less 'non-production' paving



Pancake island



Flush Center Island: Textile at Stony Creek ('Beta Version')

Raised island



Raised Center Island' 3" to 4"; Moon at Bemis (Washtenaw County Standard)

Before v. after



Textile at Hitchingham; AM Peak



BAKER RD: RIGHTSIZING & TRUCK TRAFFIC



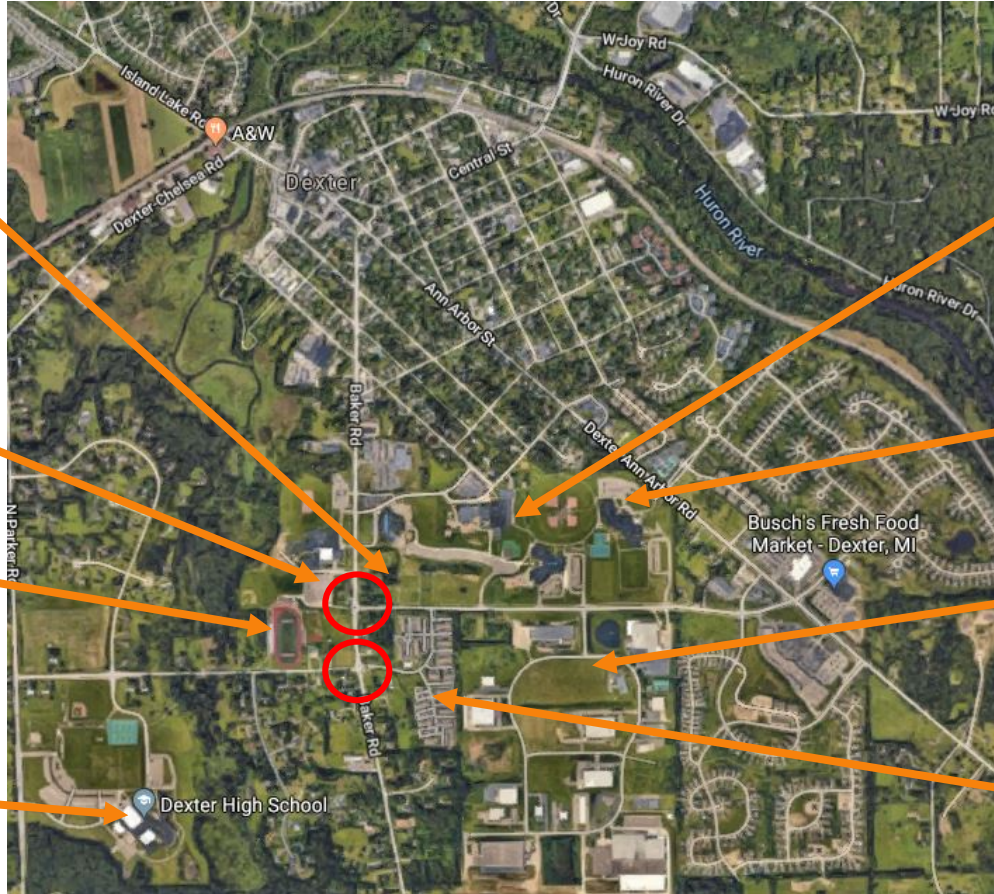
City of Dexter

Cemetery

Intermediate
School

Football
Field

High School



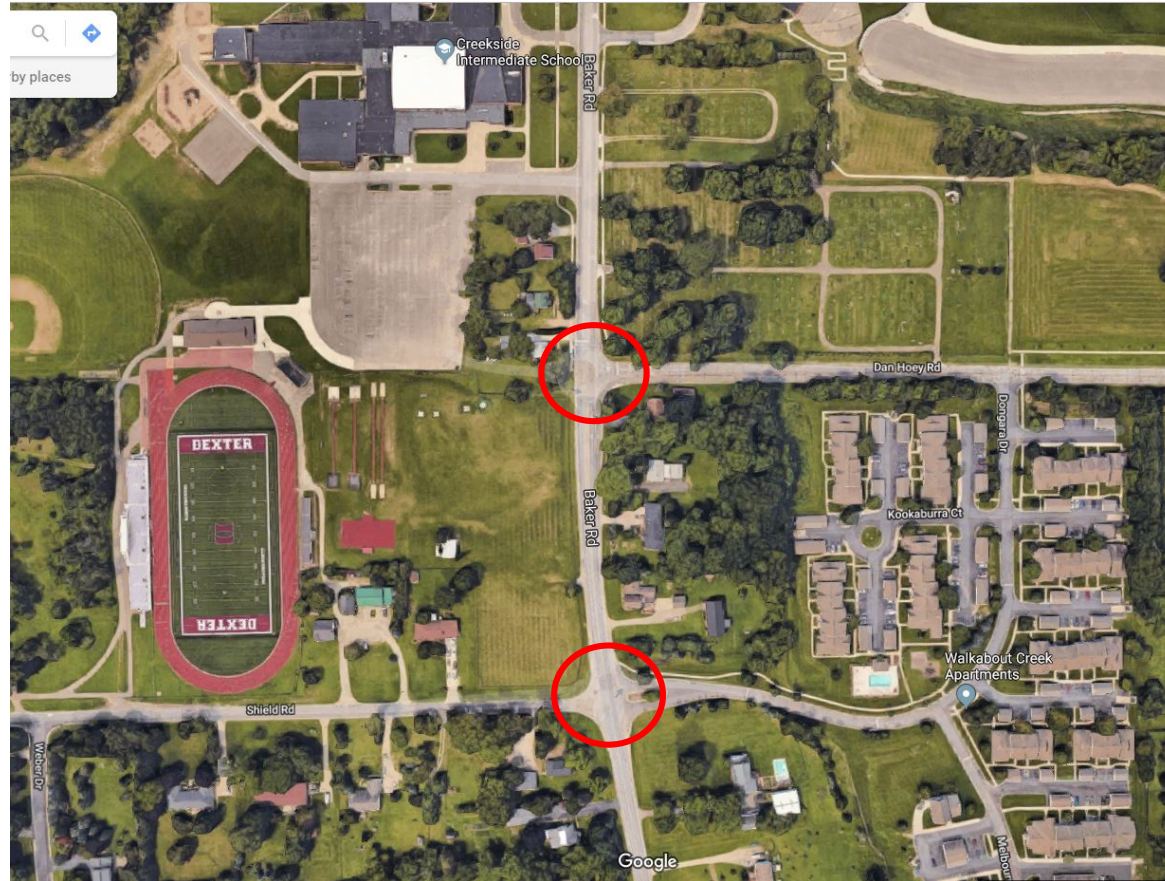
Elementary
Schools

Middle
School

Business &
Research Park

Apartment
Complex

Baker Rd Intersections



1/2" = 30'

SHIELD RD

PROPOSED LANDSCAPE / GRASS

PROPOSED PAVEMENT / DRIVEWAYS

PROPOSED SIDEWALK

PROPOSED COLORED CONCRETE

PROPOSED GRADING LIMIT LINE

CREEKSIDE

BAKER

KEY RD

















Keep on truckin'





BEMIS / MOON: NEW LIMITS



Existing conditions

Update: One Killed, Three Hurt in Collision at Moon and Bemis Road



by TRAN LONGMOORE • 07/02/2017 - 16:25 in POLICE & FIRE



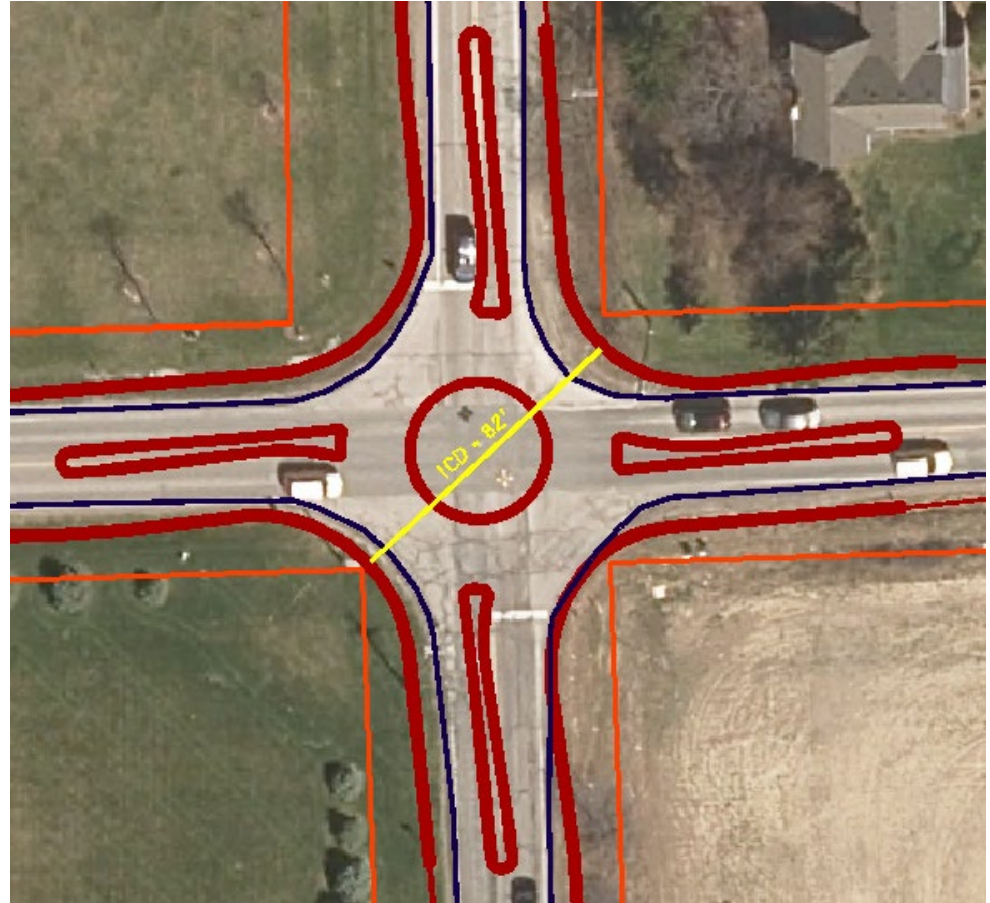
An officer from the Washtenaw County Sheriff's Office investigates the crash scene Sunday on Moon Road.

PROJECT GOALS

- Reduce delay
- Enhance safety
- Acquire no permanent ROW
- Construction budget: \$300,000

Design details

- Design Speed:
50 MPH (Moon Road)
55 MPH (Bemis Road)
- ADT: 5,900 – 6,800 vpd
per approach
- Trucks: 3%
- ICD: 82 feet
- Splitter island lengths: 75 feet
- Central island diameter: 40 feet



The bottom line

Activity	Cost
Design (consultant + WCRC)	\$33,571.07
Survey (topo + construction staking)	\$12,651.81
Right-of-Way	\$4,487.10
Street lights (includes maintenance)	\$11,352.63
Construction engineering (inspection, material testing, office technician)	\$41,569.95
Payment to contractors	\$300,673.63
Total Cost	\$404,306.19

The outcome



Winter maintenance





SUMMARY



Takeaways

- Minimum ICD 90'
- 100' – 110' ICD is 'sweet spot'
- AWSC; be cautious of TWSC
- More entry deflection where possible
- Monitor results (field visits and crash reports)

Questions?

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