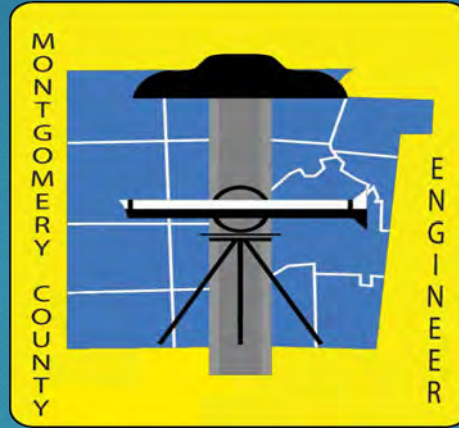


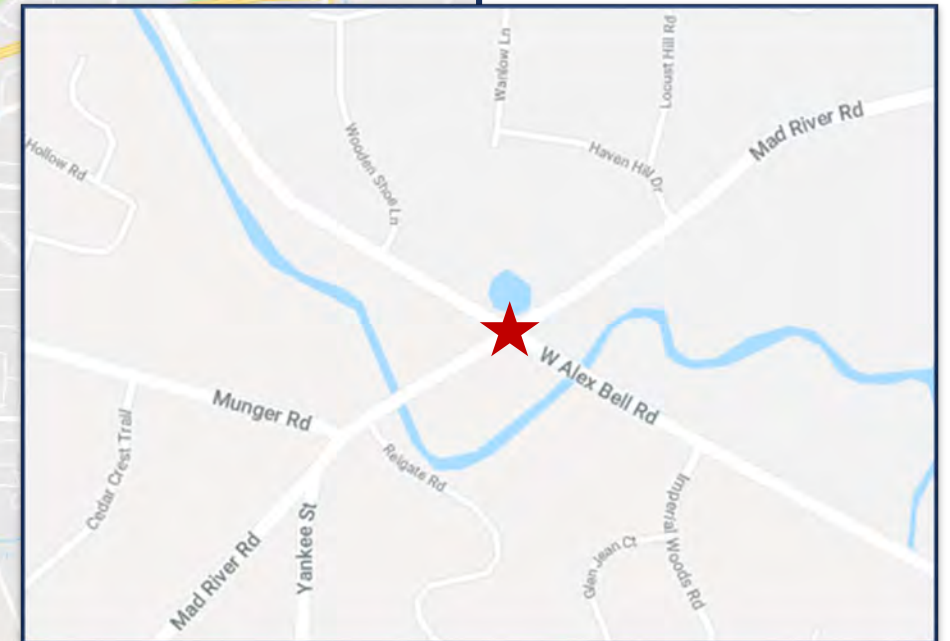
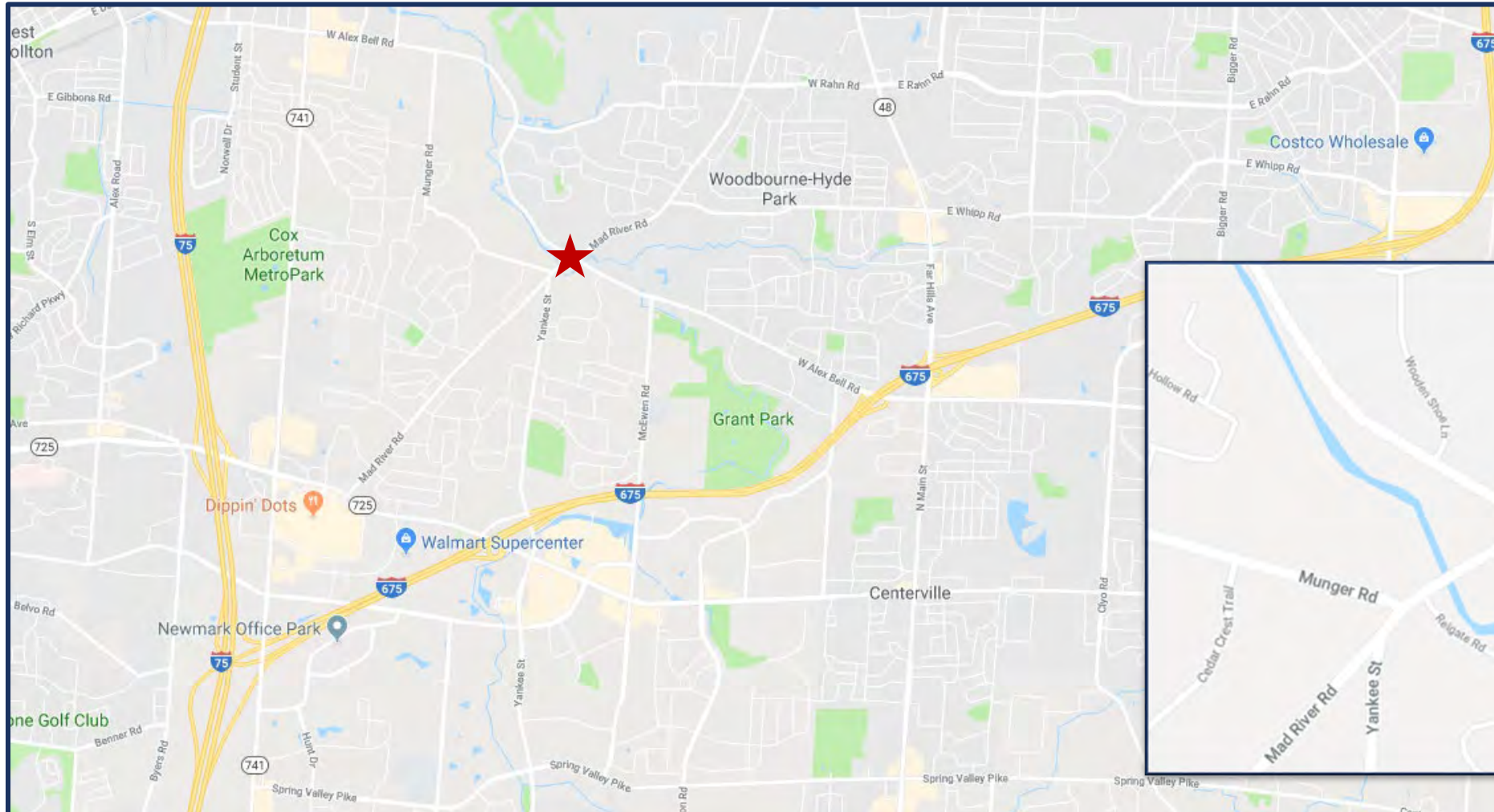
Office of the Montgomery County Engineer



The Journey to Improve the Intersection of Mad River Road and Alex-Bell Road

Presentation to ASCE Dayton Chapter – November 19, 2020

LOCATION



PROJECT AREA



Legacy of Dr. John Hole



Previous Attempts to Improve the Intersection

- 1981 Public Meeting – much opposition.
- 2017 County Engineer reaches out to Township Trustees. Trustees are supportive of improving the intersection. They jointly hire American Structurepoint for traffic analysis, safety study, and AER.

ALEX-BELL ROAD / MAD RIVER ROAD
INTERSECTION ALTERNATIVES

PUBLIC MEETING

June 20, 2018

Meeting Agenda

- ▶ 5:30 – Presentation
- ▶ 6:00 – Questions and Comments
 - ▶ Please sign up if you want to speak
- ▶ 6:45 – One on One Discussions
 - ▶ Existing Conditions Station
 - ▶ Traffic Signal Alternative Station
 - ▶ Roundabout Alternative Station
 - ▶ Bridges Station
 - ▶ Right of Way Station
- ▶ 7:30 - Adjourn

Why Are We Here Today?

- ▶ Bridge Conditions: The need to rehabilitate or reconstruct the two bridges very close to the intersection.
- ▶ Need to make sure that new bridge work will be compatible with any improvements made to the intersection.
- ▶ Traffic Study with Conceptual Alternatives commissioned by the County Engineer and the Washington Township Trustees.
- ▶ Now is the time to get feedback and opinions from you

Mad River Road Bridge over Holes Creek



EXISTING CONDITIONS – CRASHES

- ▶ Traffic Study analyzed crashes from 2014 through 2016
- ▶ Intersection ranks consistently near the top of high crash rate locations on County system
- ▶ 40 Intersection related crashes
 - 24 (60%) Rear-end crashes
 - 12 (30%) Angle crashes
 - 19 (45%) Resulted in Injuries



EXISTING CONDITIONS – CONGESTION

- ▶ Average Daily Traffic (ADT)
 - Alex-Bell Road = 9050
 - Mad River Road = 8700
- ▶ 4-Way Stop operates at Level of Service F
- ▶ Queues can extend 800' to 1000'
- ▶ Backups extend past intersection with Munger Road, Yankee Street, and other side streets



TRAFFIC SIGNAL ALTERNATIVE



TRAFFIC SIGNAL ALTERNATIVE

- ▶ Left-turn lanes increase capacity to clear traffic at the intersection. 200' long storage.
- ▶ Operates at Level of Service B, which is very good.
- ▶ Much less delay compared to existing condition
- ▶ Additional strips of right of way are needed for the road widening.
- ▶ Cost is approximately \$1.8 million



ADVANTAGES OF A ROUNDABOUT

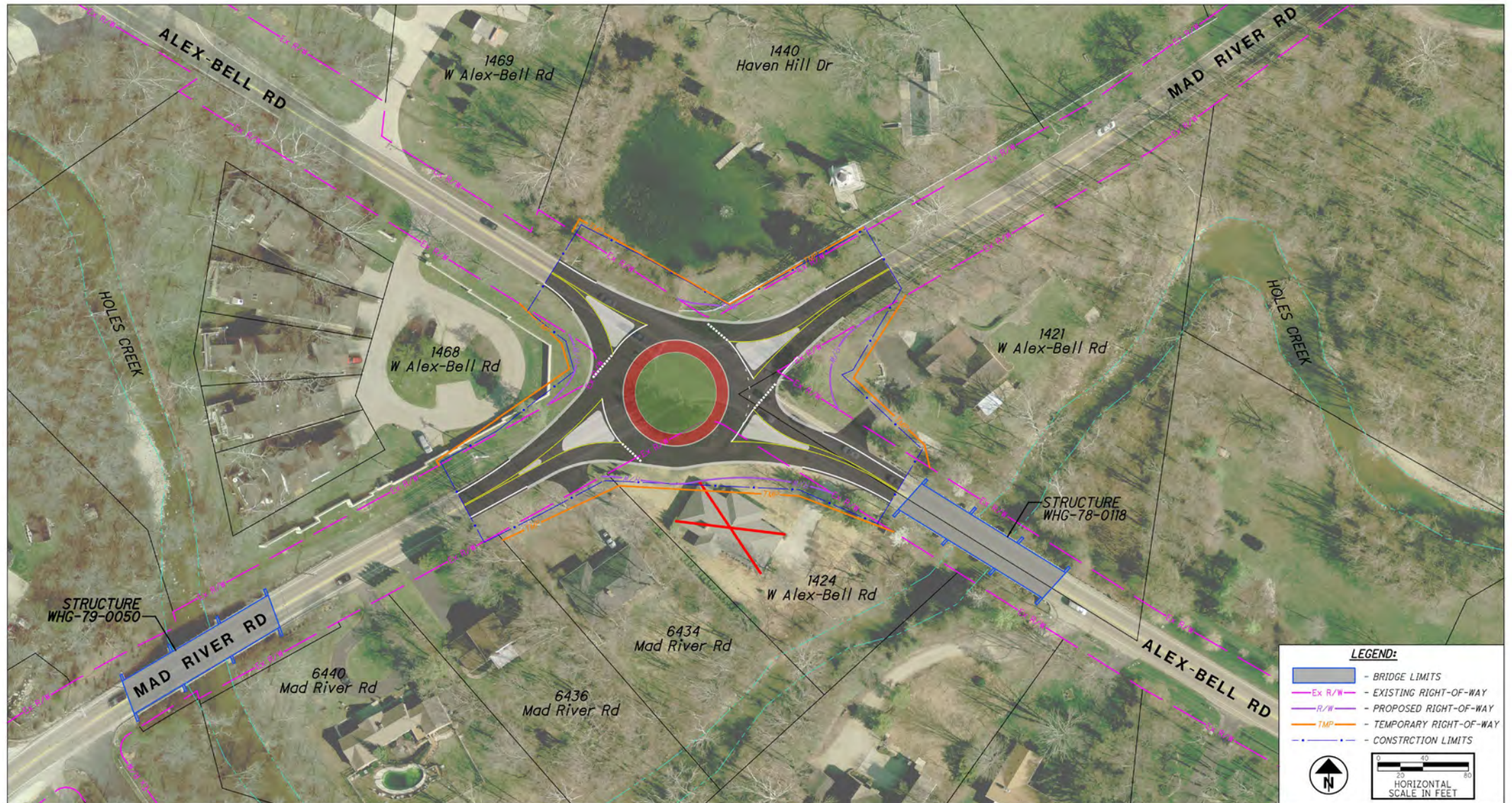
- ▶ **For Safety:**

- ▶ 35% reduction in all crashes
- ▶ 76% reduction in injuries
- ▶ 90% reduction in fatalities

- ▶ **For More Efficient Operation:**

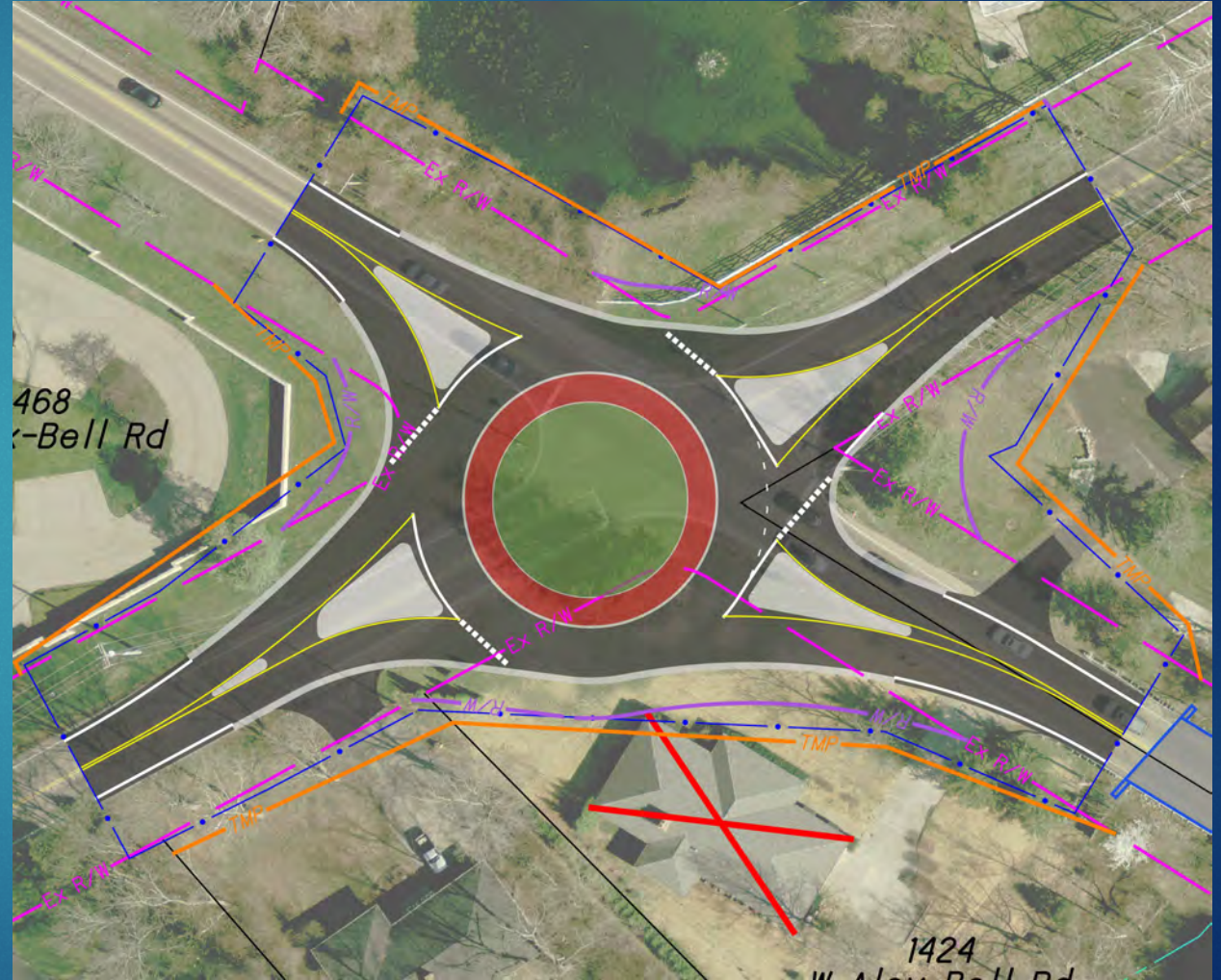
- ▶ Efficient during peak traffic – Level of Service A
- ▶ Efficient in off-peak hours
- ▶ Less delay

ROUNDBABOUT ALTERNATIVE 2A

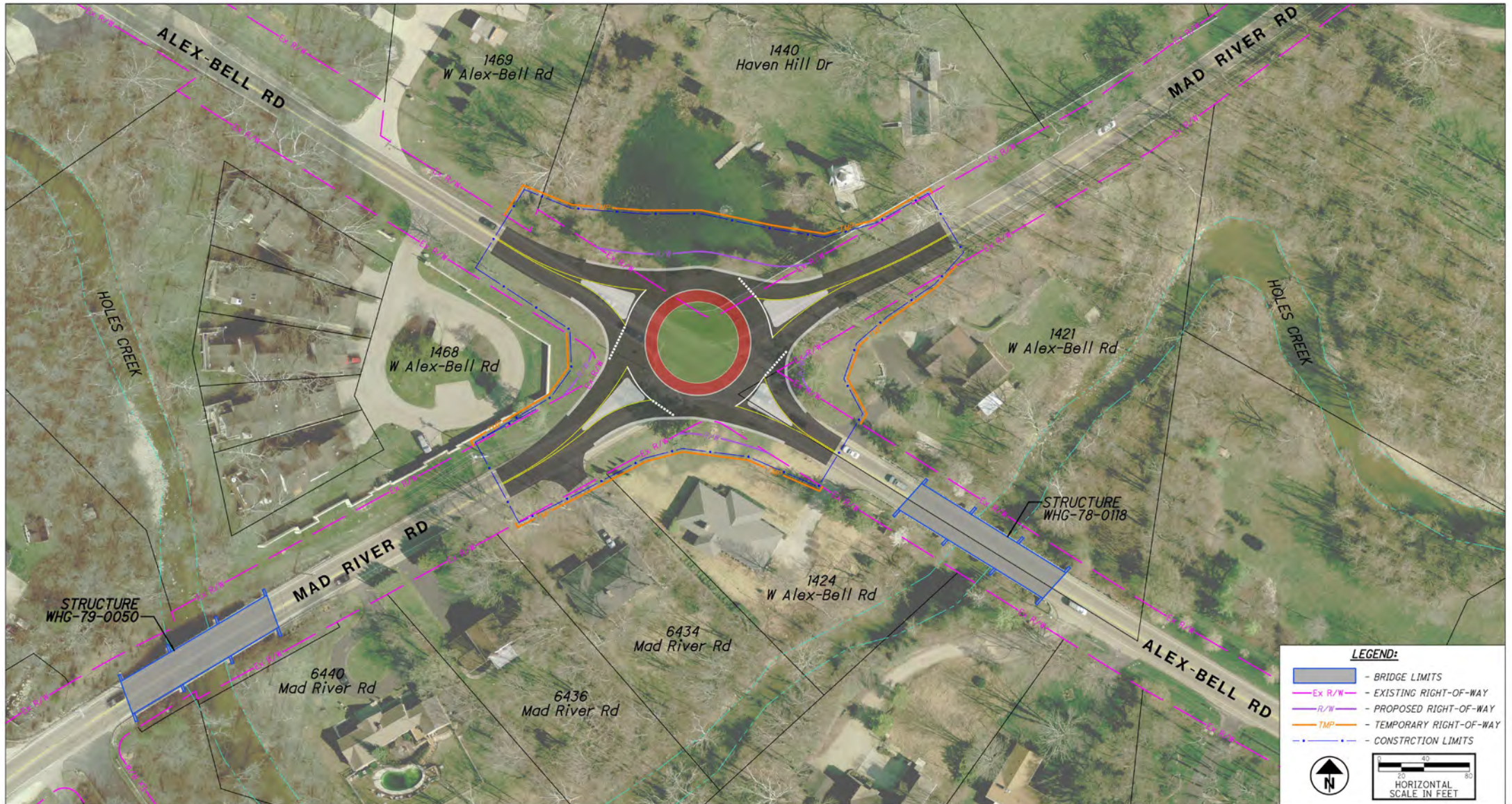


ROUNDBOUT ALTERNATIVE 2A

- ▶ May likely require purchase of the house and relocation of its residents, but avoids the pond
- ▶ Minor rights of way needed at other three corners
- ▶ Level of Service A, very little delay
- ▶ Practically no delay in off-peak hours
- ▶ Cost – approximately \$1.5 million

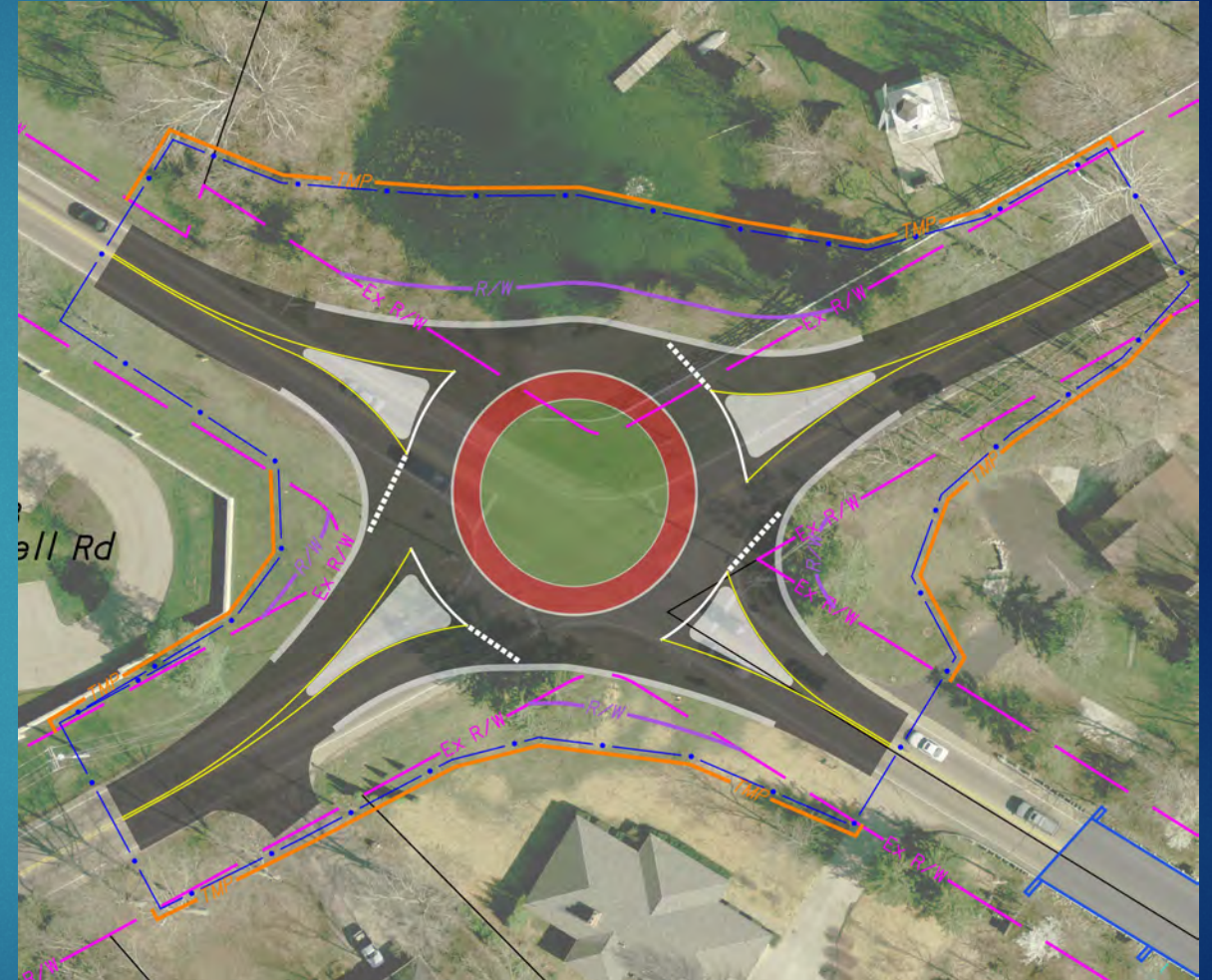


ROUNDAABOUT ALTERNATIVE 2B



ROUNDBABOUT ALTERNATIVE 2B

- ▶ Impacts the pond, but avoids purchase of a residence
- ▶ Property once the home of Dr. John Hole.
- ▶ House and two springhouses listed in Ohio Historic Preservation Office database
- ▶ Roundabout would operate the same as Alternative 2A
- ▶ Minor rights of way needed at other three corners



CONCLUSTIONS FROM PUBLIC MEETING

- ▶ Presented results of traffic analysis, safety study, and preliminary engineering to the public.
- ▶ Many comments received at the meeting and after the meeting.
- ▶ After considering all comments, a one-lane roundabout was selected as the best alternative for the intersection.
- ▶ Apply for federal funding for the project.

MOT – MAD RIVER & ALEX BELL IMPROVEMENTS

FALL 2018 SAFETY APPLICATION

MONTGOMERY COUNTY
ENGINEER'S OFFICE



CRASH DATA



Crash Summary (2014-2016)

- 40 Crashes
 - 19 Injury Related Crashes (48%)
 - 21 Property Damage Crashes (52%)
- Most frequent crash types:
 - 24 Rear End Crashes (60%)
 - Approach speeds much higher than posted speed
 - 12 Angle Crashes (30%)
 - Failure to yield after stopping at Stop sign
 - Over-saturated conditions
 - Entered intersection before travel path cleared

RECOMMENDED COUNTERMEASURE

Reconfigure
Alex Bell & Mad River
intersection to a single lane
roundabout

Reconfigure Alex Bell & Mad River intersection to a single lane roundabout

- 35% reduction in all crashes
- 76% reduction in injury crashes
- Improves operation and safety at Yankee & Mad River



APPLICATION SCORING

Category	Scoring Value	Points Awarded	Points Possible
Expected Crash Frequency	16.25	10	10
Ratio of Observed Fatal and Serious Injuries to Observed Total Crashes	0.03	2	5
% of the Potential for Safety Improvement to Total Expected Crashes	6.65%	12	20
Relative Severity Index	\$47,348	10	10
Equivalent Property Damage Only Index	3.49	3	5
Volume to Capacity Ratio	1.3	10	10
Benefit Cost Ratio	2.02	21	30
Safety Funding Request Percentage	78.39%	6	10
Total		74	100

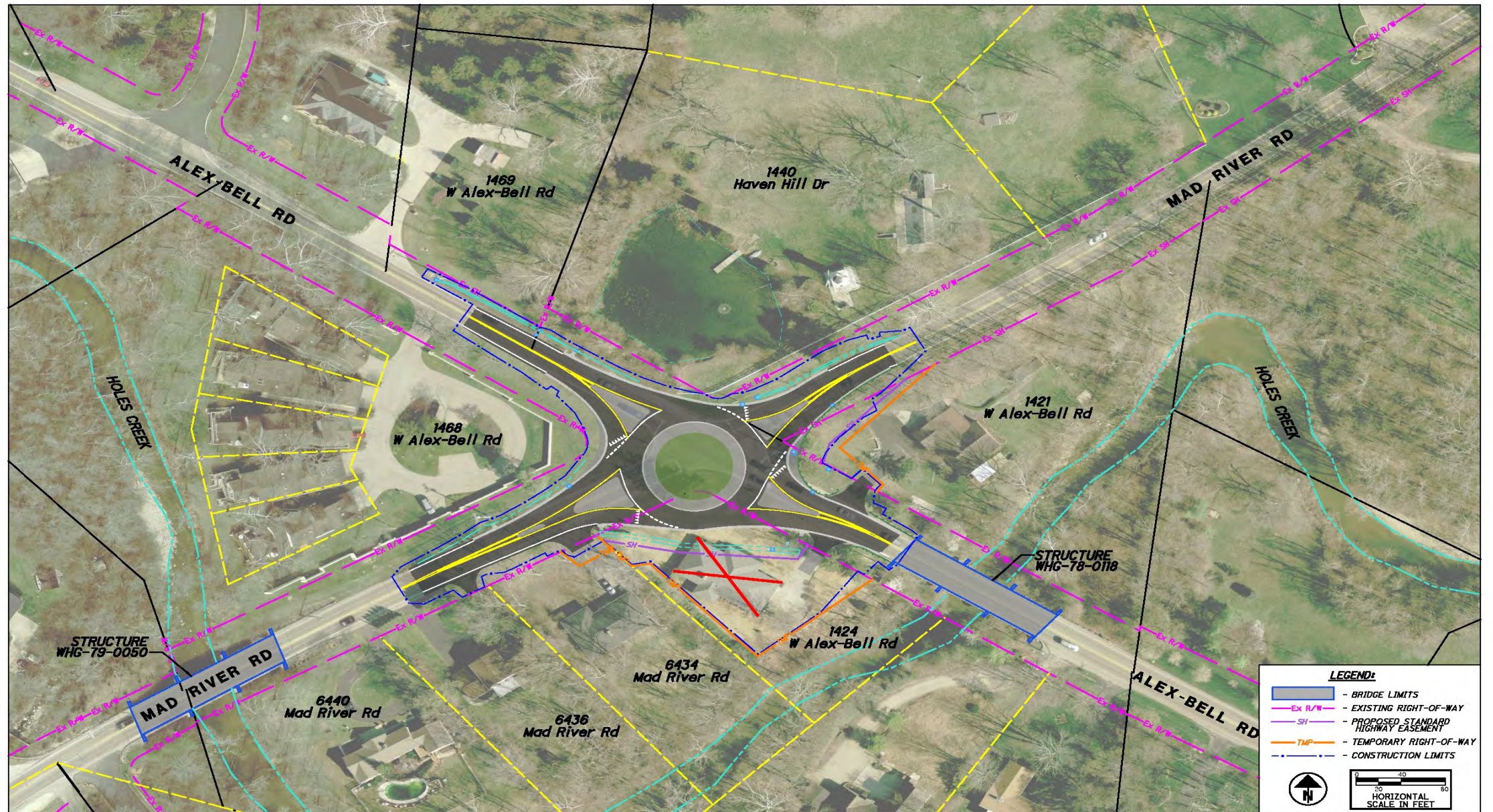
MAD RIVER ROAD / ALEX BELL ROAD INTERSECTION IMPROVEMENT

PUBLIC VIEWING & HEARING

VIEWING: November 10, 2020

HEARING: November 17, 2020

PROPOSED PROJECT



WHAT IS A ROUNDABOUT?

- ▶ Roundabouts are circular intersections that require all entering traffic to yield at entry.
- ▶ Operates at about 20 mph.
- ▶ No traffic signals required.

ADVANTAGES OF A ROUNDABOUT

- ▶ **For Safety:**

- ▶ 35% reduction in all crashes
- ▶ 76% reduction in injuries
- ▶ 90% reduction in fatalities

- ▶ **For More Efficient Operation:**

- ▶ Efficient during peak traffic – Level of Service A
- ▶ Efficient in off-peak hours
- ▶ Less delay

- ▶ **Saves Gas and Reduces Pollution:**

- ▶ Fewer stops and starts, less idling
- ▶ Also quieter, for same reasons

Driving a Roundabout

The County Engineer's Office will put on an information campaign through press releases, news media, and on our website, to educate drivers on how to drive a roundabout.

Mad River/Alex Bell will be the first roundabout on the County road system in Montgomery County.

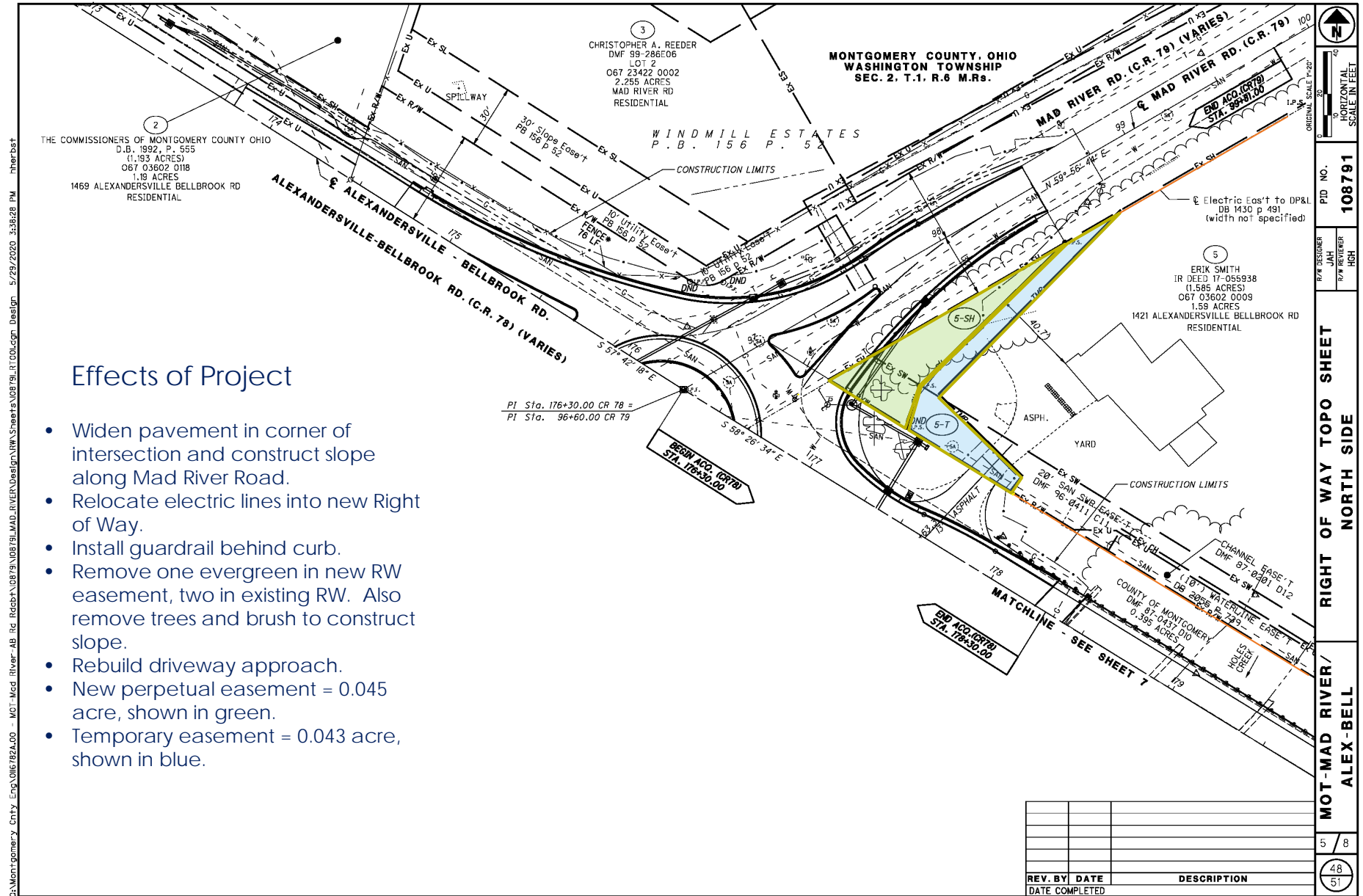
There are currently more than 200 roundabouts in Ohio.

Neighboring counties to the south have had much experience with roundabouts. To date, there are:

Butler County - over 20

Warren County - 8

Erik Smith 1421 Alex Bell Road



Erik Smith 1421 Alex Bell Road



Three evergreen trees to be removed.

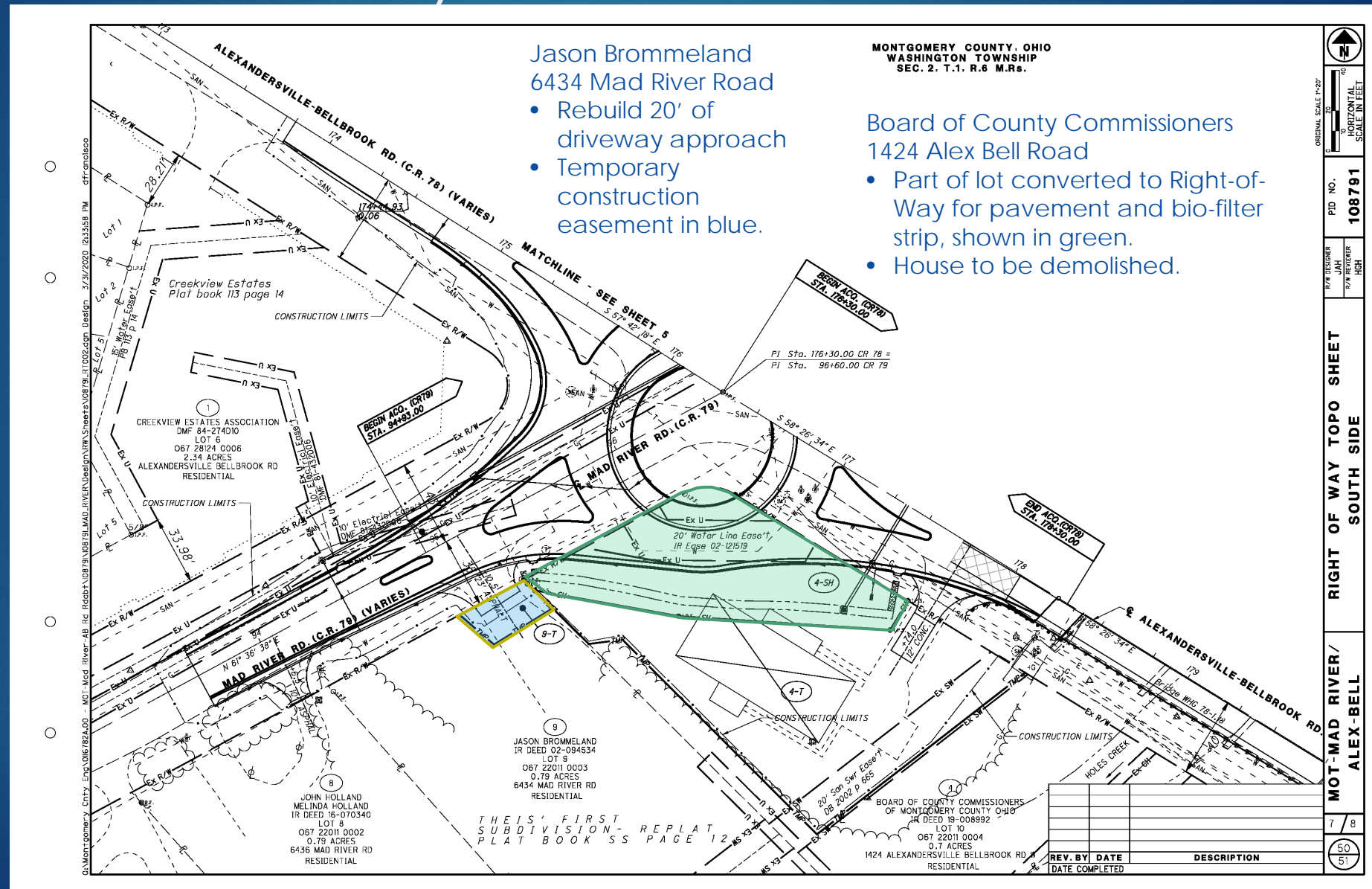
Trees and brush removed in order to extend slope along Mad River Road.



Electric pole will move about 20 feet to the east.

Driveway approach to be rebuilt.

Jason Brommeland -- 6434 Mad River and
Board of County Commissioners – 1424 Alex Bell



Jason Brommeland 6434 Mad River Rd.



Rebuild 20 feet of driveway approach.

PROJECT COSTS AND FUNDING

Design Engineering	\$256,000
Construction	\$990,000

Right of Way costs to be determined by real estate appraisals

Federal Safety Funds will cover 90% of design and construction costs, 70% of right of way costs

Ohio Public Works = \$ 200,000 (if approved)

PROJECT SCHEDULE

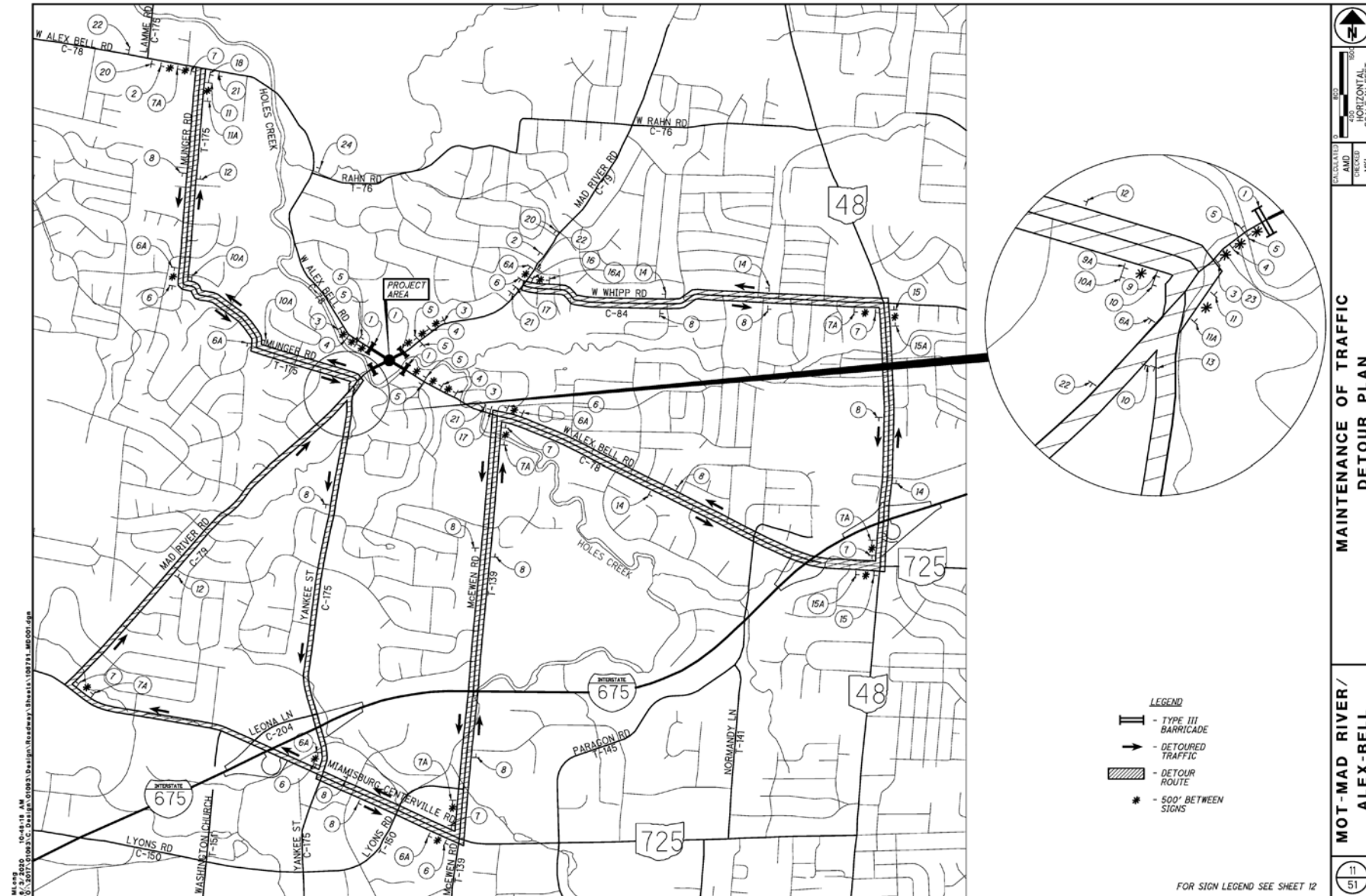
Right-of-Way Acquisition Dec. 2020 – Oct. 2021

Clearing Trees/
Utility Relocation Nov. 2021 – Mar. 2022

Construction May 2022 – Aug. 2022

Intersection will be closed during construction. Detours will be posted.

Detour Routes



Project Approved by Board
of County Commissioners at
Public Hearing on 11/17/20