



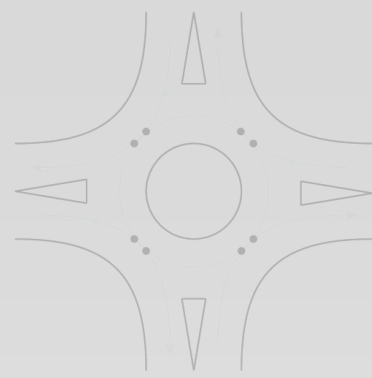
DONNELLY AVE/COMMUNITY CENTER INTERSECTION DISCUSSION

Aston Township

October 2021

Joseph J. Viscuso, PE

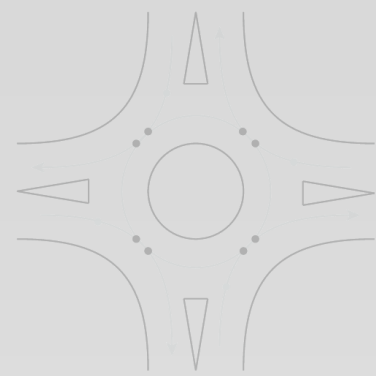
THE PROBLEM



- ◆ Minimal gaps in traffic
- ◆ Average Daily Traffic (ADT) on Concord Road – 14,000
- ◆ Large number of pedestrian movements
- ◆ 85th Percentile Speed – 43 MPH
 - ◇ speed which 15% of drivers are exceeding; PennDOT standard used for design purposes
- ◆ Community Center and Church/School events create high volumes
- ◆ Limited site distance



THE OPTIONS



1 Do Nothing

- ◆ Traffic will continue to increase over time
- ◆ Cost of traffic control at events
- ◆ Accidents continue to occur
- ◆ Liability

2 Traffic Signal

- ◆ Traffic signals will not address speeding issues; cars will speed up to run the light
- ◆ Queuing on Concord Road that would block side streets and driveways
- ◆ Limited sight distance to queued vehicles
- ◆ Ongoing maintenance and operational costs
- ◆ Intersection does not meet PennDOT warrants
- ◆ Increase delays, especially during peak hours

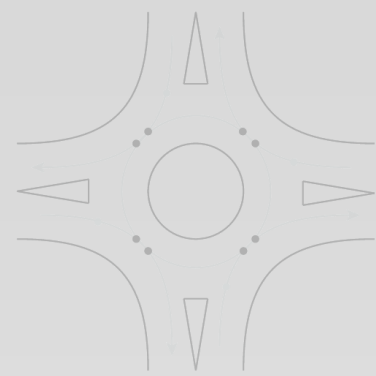
3 Other

- ◆ Concord Road is a state highway any options would have to meet PennDOT standards, and they prefer the roundabout
- ◆ PennDOT does not allow vertical deflections (speed humps, speed tables, etc.) on state roads
- ◆ Limiting turning movements will cause cut through traffic on other residential streets

4 Roundabout



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4 Roundabout

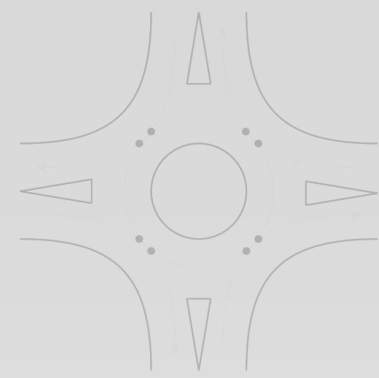


With options 1, 2 & 3 the Township loses \$1,297,048 in grant funds



THE PROCESS

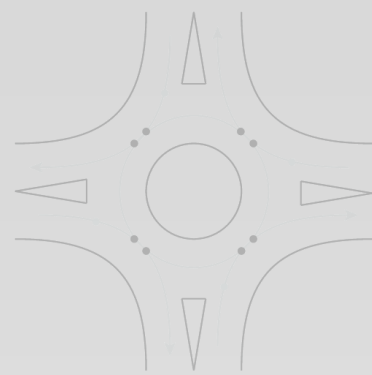
- ◆ Reviewed area for additional traffic improvements
- ◆ Completed preliminary analysis for roundabout
- ◆ Submitted analysis to PennDOT and received grant award
- ◆ Hold public meetings (such as this) for educational purposes



data shows that when installed, roundabouts save lives and reduce crash severity

Yassmin Gramian
PennDOT Secretary





CIRCULAR INTERSECTION HISTORY

1900's – 1940's

- ◆ Rotaries/traffic circles used

1950's

- ◆ Circular intersections fell out of favor

1963

- ◆ Great Britain redesigns the circular intersection

1980's

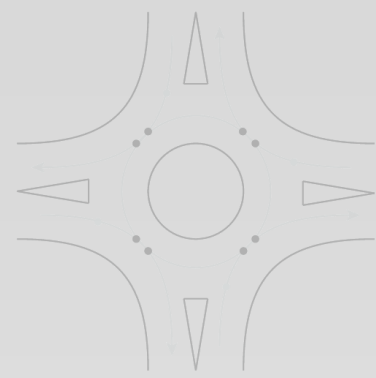
- ◆ “Modern Roundabout” used throughout Europe and Australia

1990's

- ◆ “Modern Roundabout” utilized in the US; Now there are thousands in the US with many more constructed every year



US MODERN ROUNDABOUT HISTORY



1990

◆ Nevada

1992

◆ Florida

1993

◆ Maryland

1995

◆ Vermont

2000

◆ New York

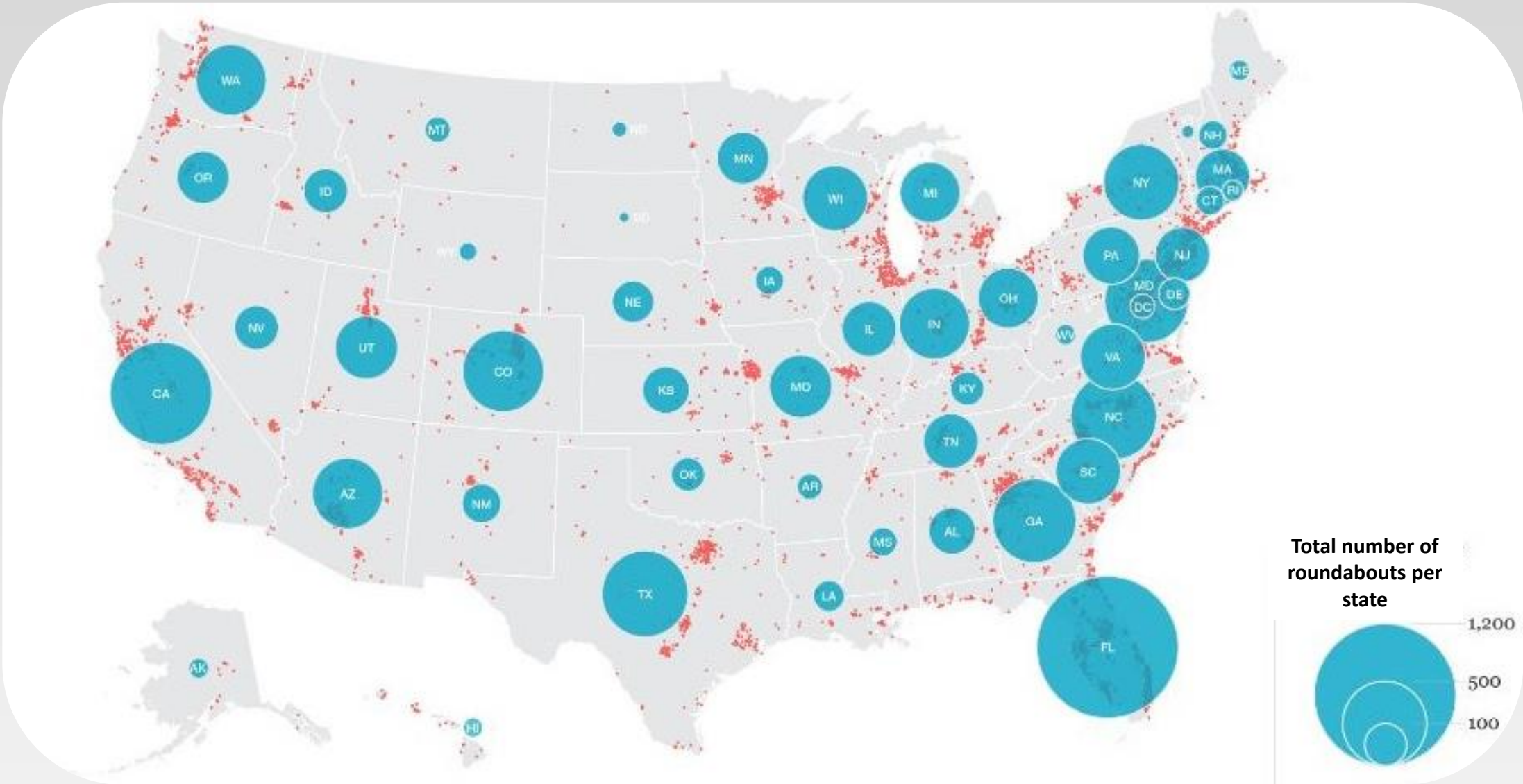
2004

◆ Pennsylvania
◆ Virginia
◆ Delaware
◆ Ohio

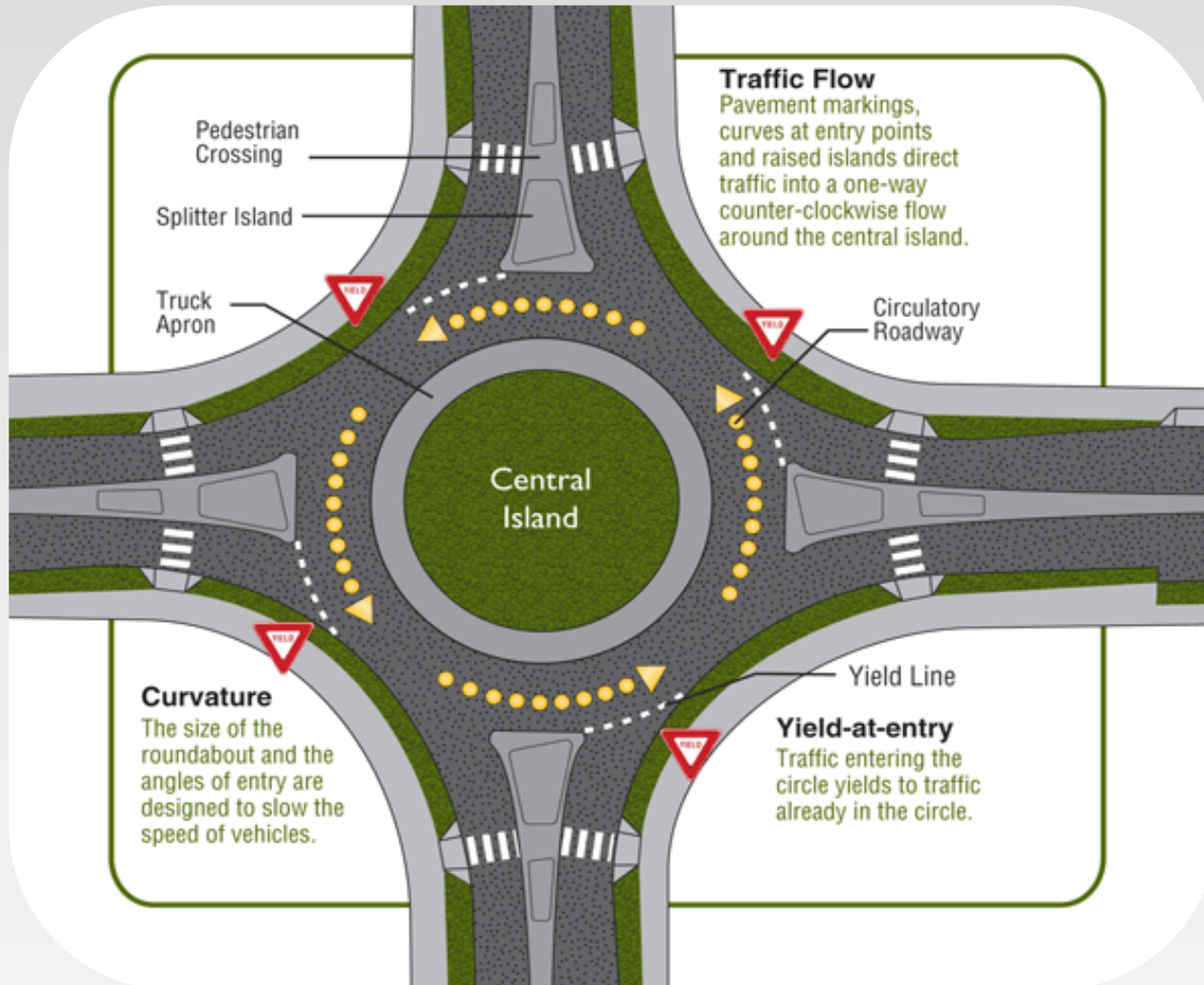
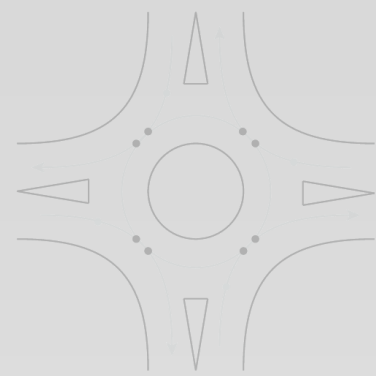
Facts

- ◆ Colorado has more than 150
- ◆ Washington has more than 100
- ◆ New York has more than 90 in design
- ◆ As of 2020, the US has over 7,900 modern roundabouts
- ◆ Over 50 roundabouts have been installed in PA on state routes and over 40 more are in design





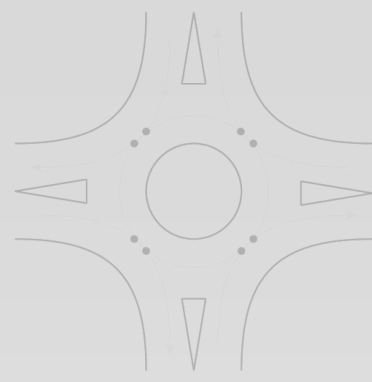
WHAT IS A MODERN ROUNDABOUT?



- ◆ Circular intersection with traffic flowing around a raised center island
- ◆ Entering vehicles yield to circulating vehicles
- ◆ Small radius/deflected approaches/low speed
- ◆ No pedestrian facilities on the center island
- ◆ Splitter islands with pedestrian accommodations



WHY ARE ROUNDABOUTS BECOMING SO POPULAR?



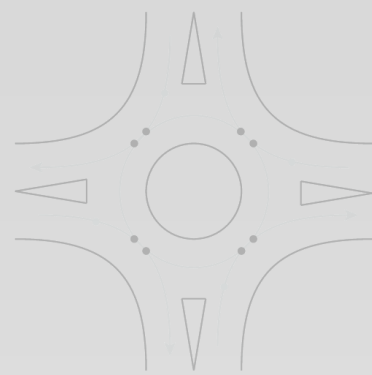
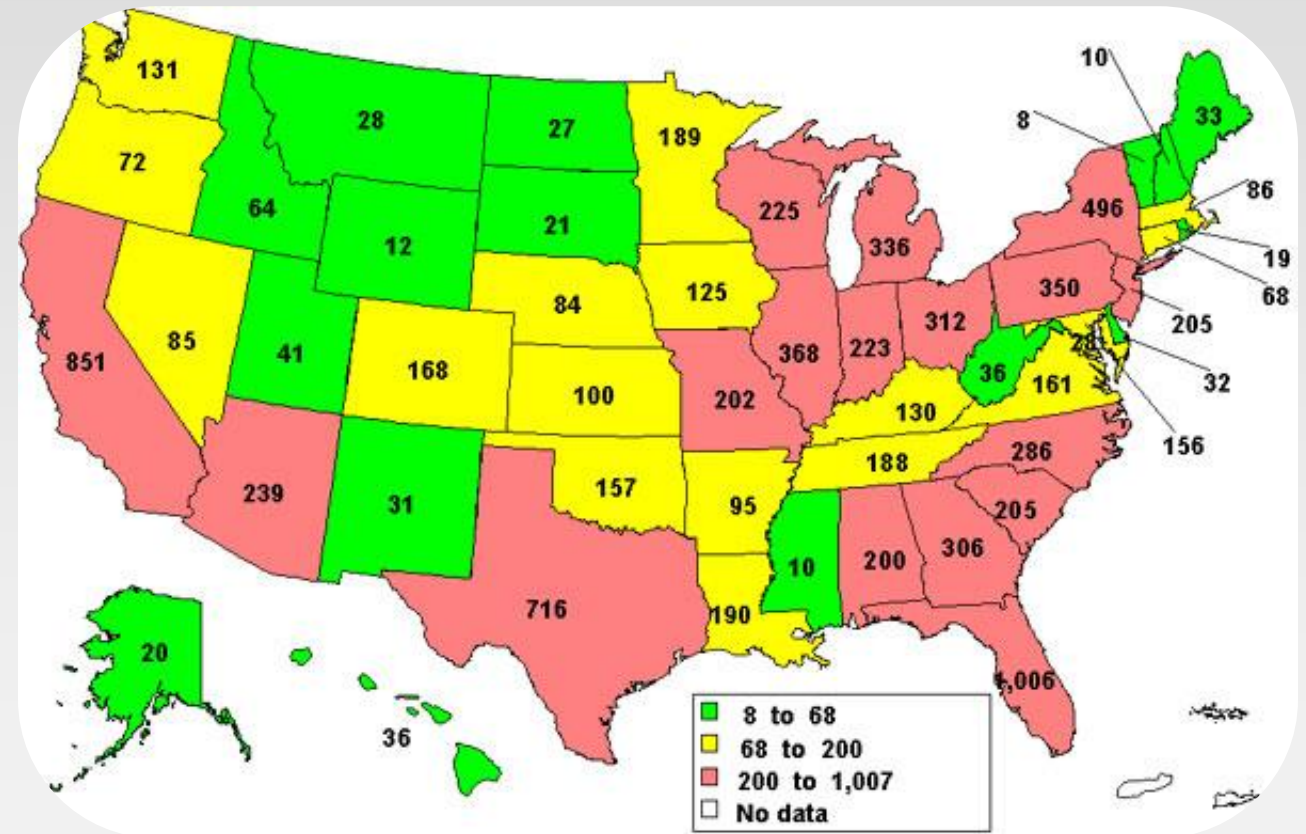
- ◆ Safer intersection
- ◆ High capacity/low delay
- ◆ Good for all modes of traffic
- ◆ Safer pedestrian accommodation
- ◆ Geometric flexibility
- ◆ Aesthetics
- ◆ Lower fuel usage and air emissions
- ◆ Traffic Calming Element



SAFETY

- ◆ 2.5 million crashes occurred at intersections in 2020
- ◆ Most involve left turns
- ◆ 10,180 intersection fatalities nationwide in 2019
- ◆ More than 23% of all vehicular fatalities occurred at intersections

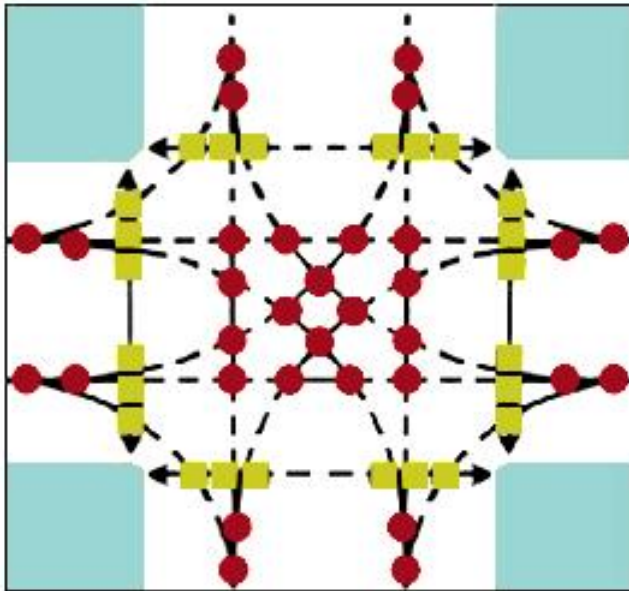
Intersection Fatalities (IIHS)



INTERSECTION CONFLICT POINTS

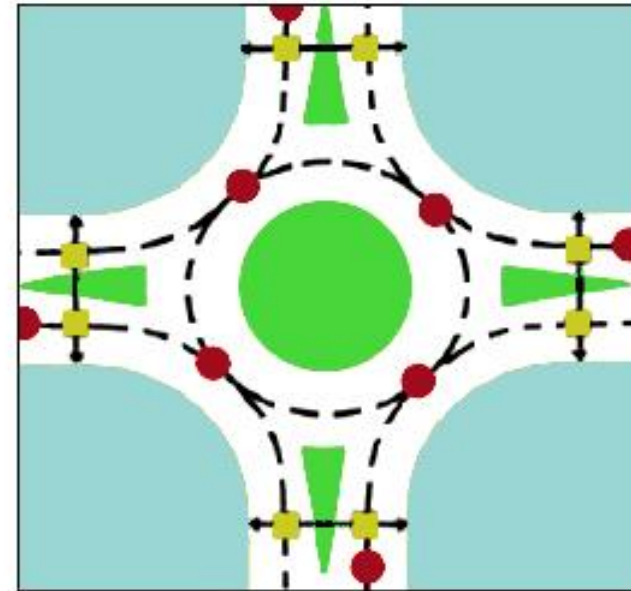


Intersection



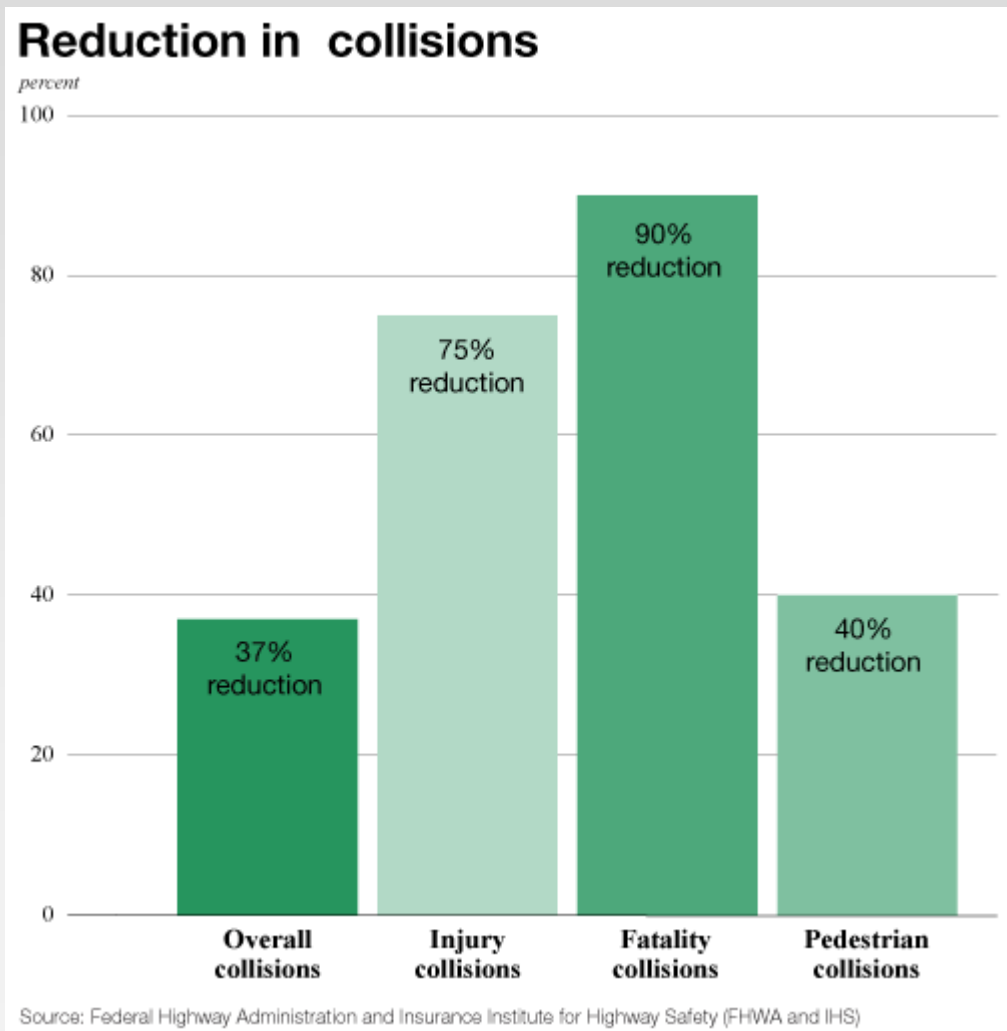
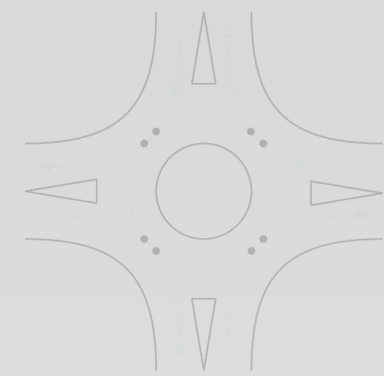
- 32 Vehicle conflicts
- 24 Pedestrian conflicts

Roundabout



- 8 Vehicle conflicts
- 8 Pedestrian conflicts

DO THEY ACTUALLY REDUCE FATALITIES?



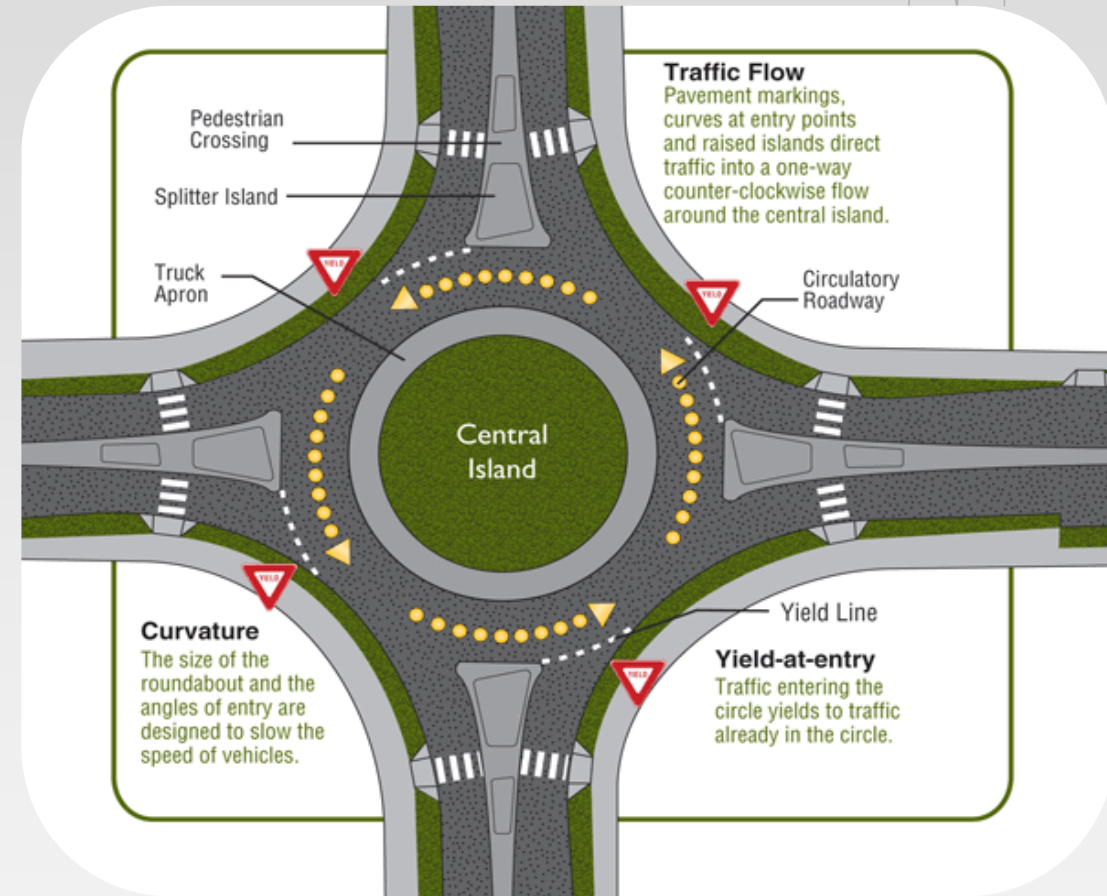
The modern roundabout is simply safer than the traditional intersection

Yassmin Gramian
PennDOT Secretary

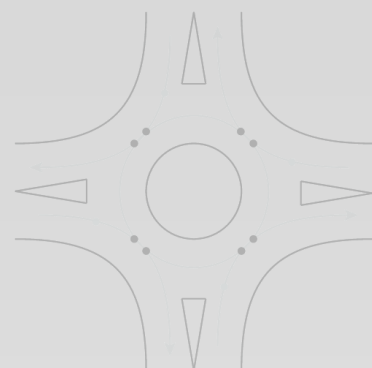
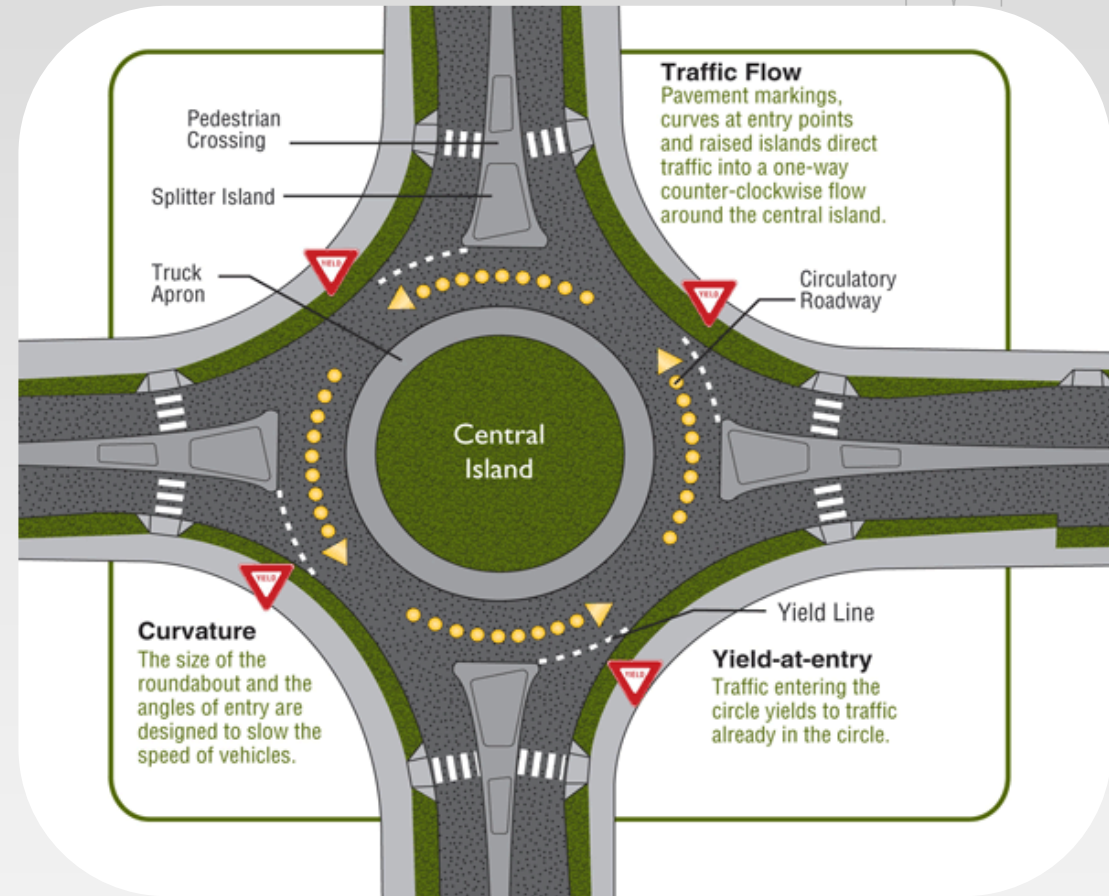
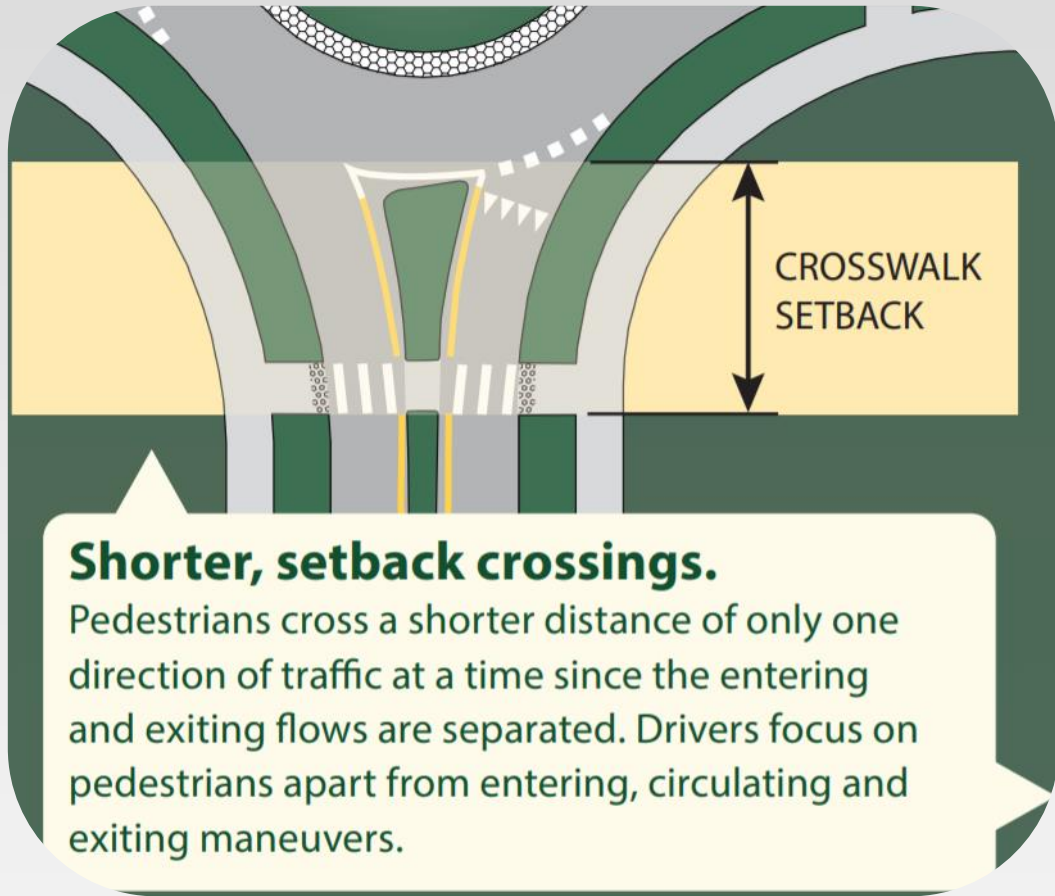


SAFER FOR PEDESTRIANS/CYCLISTS

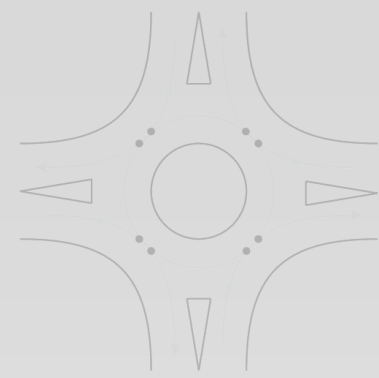
- ◆ **Slow speeds reduces fatalities**
- ◆ Few conflict points
- ◆ Non-attentive driving eliminated
- ◆ Pedestrian exposure to traffic is much lower
- ◆ Minimal severe injury or fatal pedestrian/bike crashes within single-lane roundabouts



SAFER FOR PEDESTRIANS/CYCLISTS



LOW DELAY/REDUCED STOPS



- ◆ **Delay:**

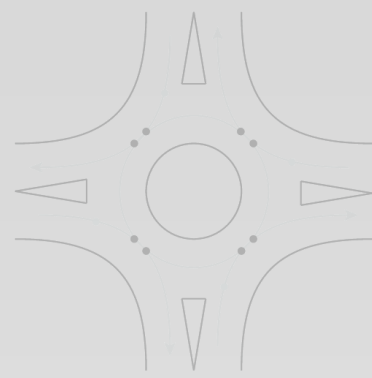
- ❖ Compared to stop signs: 13% to 23% reduction
- ❖ Compared to signals: 89% average reduction

- ◆ **Stops**

- ❖ Compared to stop signs: 14% to 37% reduction
- ❖ Compared to signals: 56% average reduction



PUBLIC ACCEPTANCE & EDUCATION



- ◆ **Public resistance is Common**

- ❖ Before construction: 3 to 2 opposing roundabouts
- ❖ After construction: 4 to 1 in favor of roundabouts

- ◆ **Education is Crucial**

- ❖ How roundabouts function
- ❖ Not rotaries or circles
- ❖ Safe for school areas
- ❖ Can handle buses large trucks and snowplows

- ◆ **Visualizations are very helpful**



Aston Resident So stupid that's why they're getting rid of them in New Jersey...



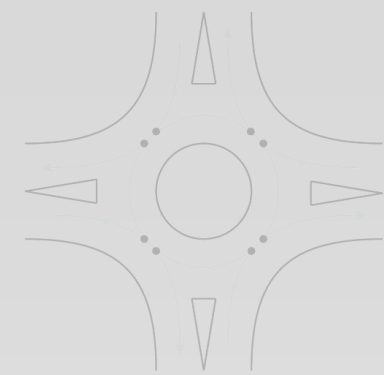
Aston Resident Aston (as well as Pennsylvania) has finally embraced the infamous traffic circles New Jersey has been eliminating in favor of traditional intersections.



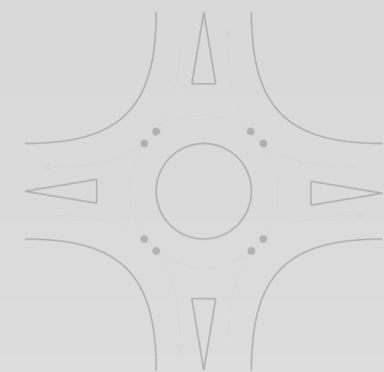
Aston Resident Wouldn't a timed traffic light have worked....and saved a lot of money??



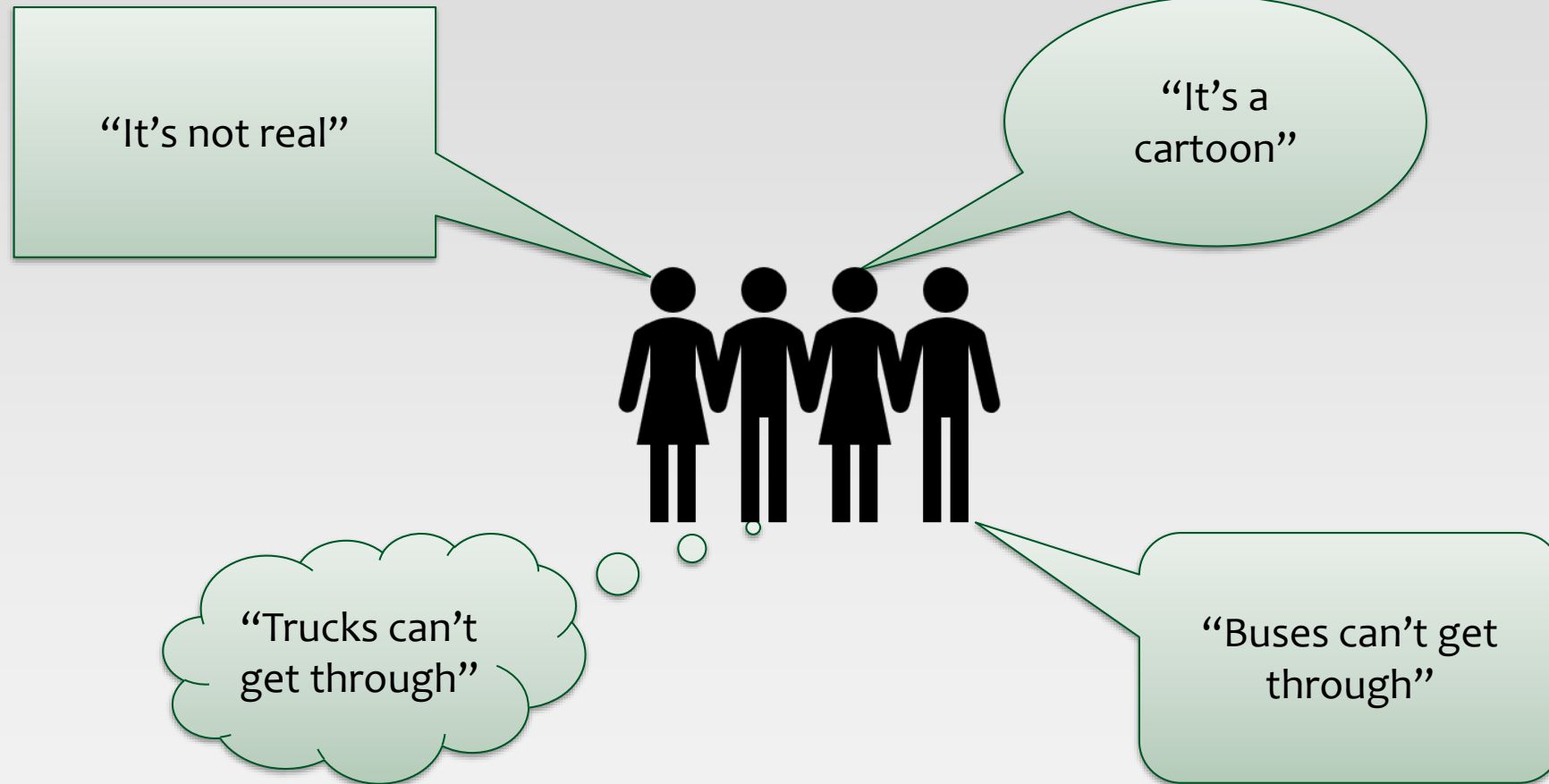
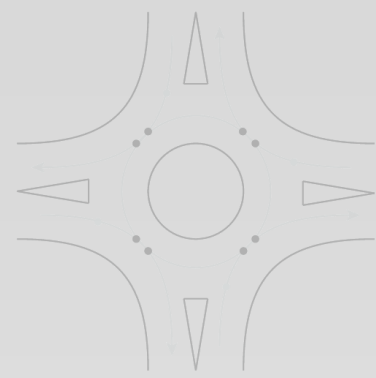
STAKEHOLDER ENGAGEMENT



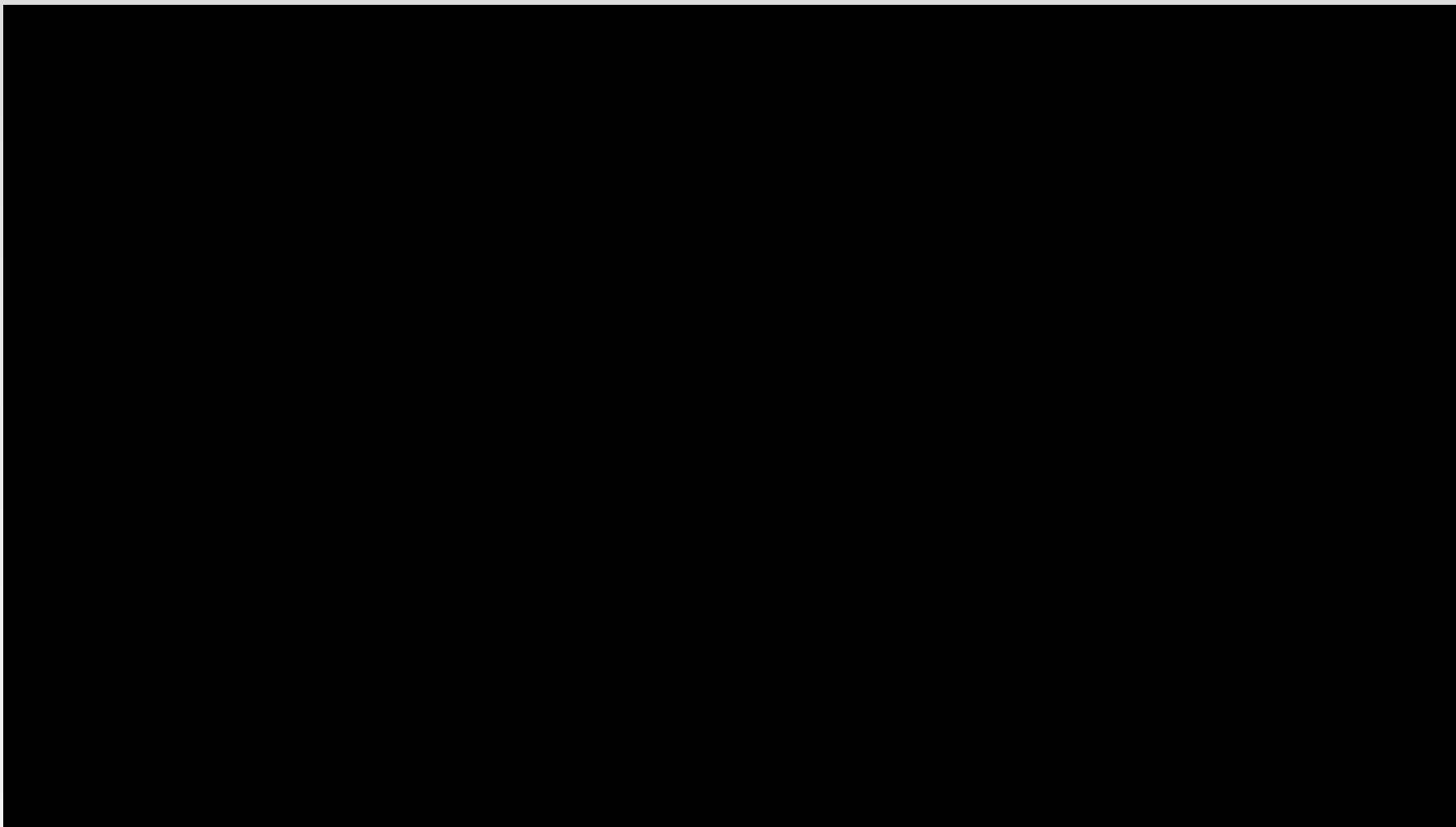
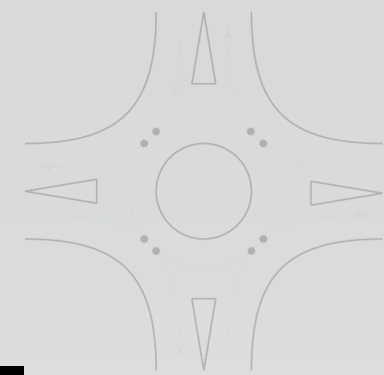
VISSIM SIMULATION



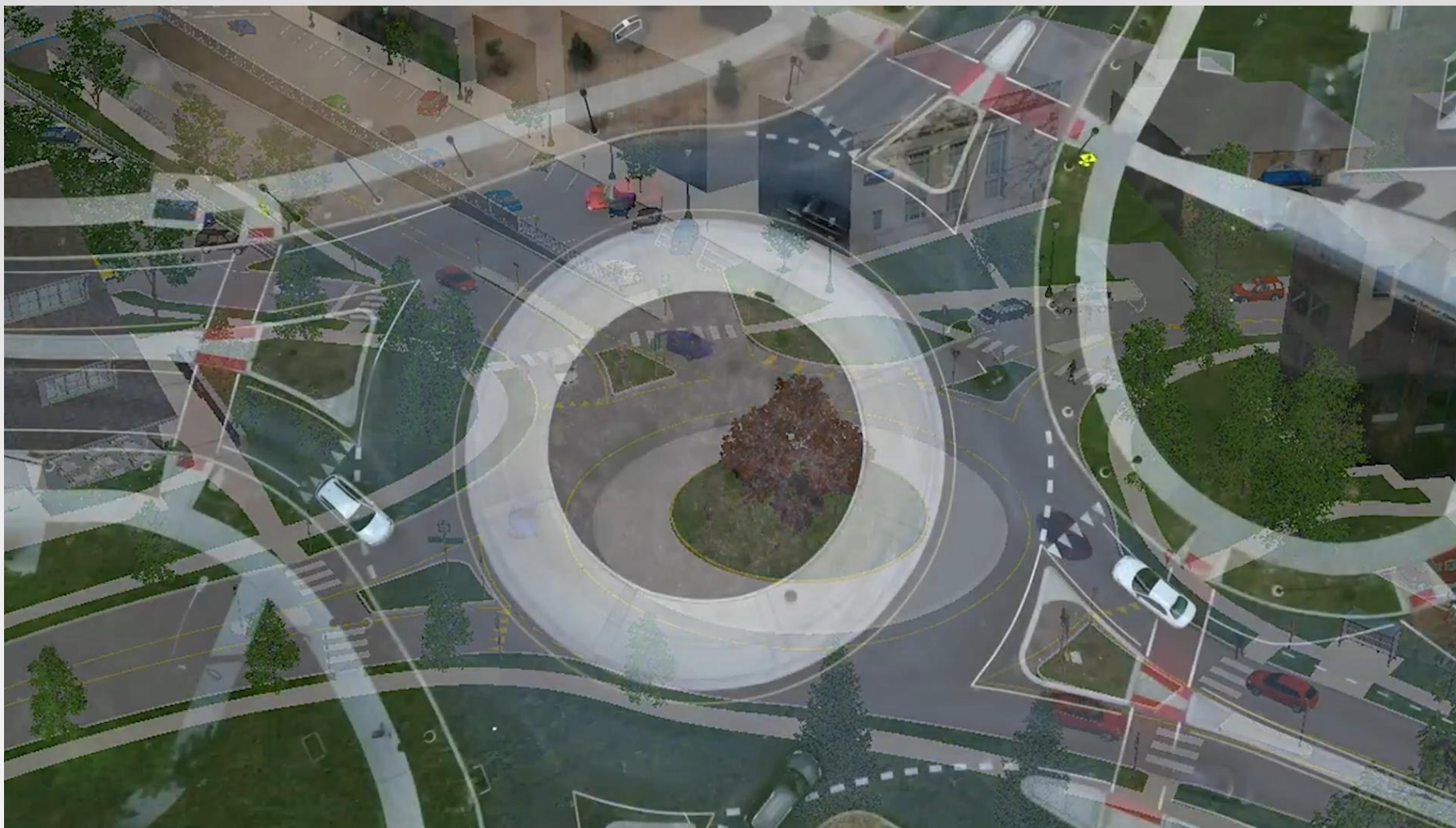
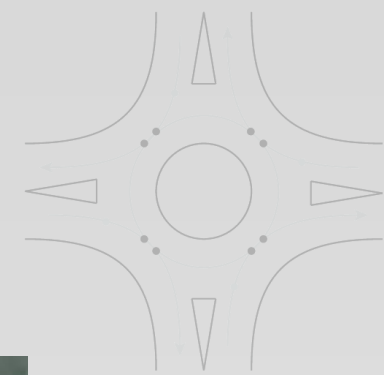
PUBLIC COMMENTS



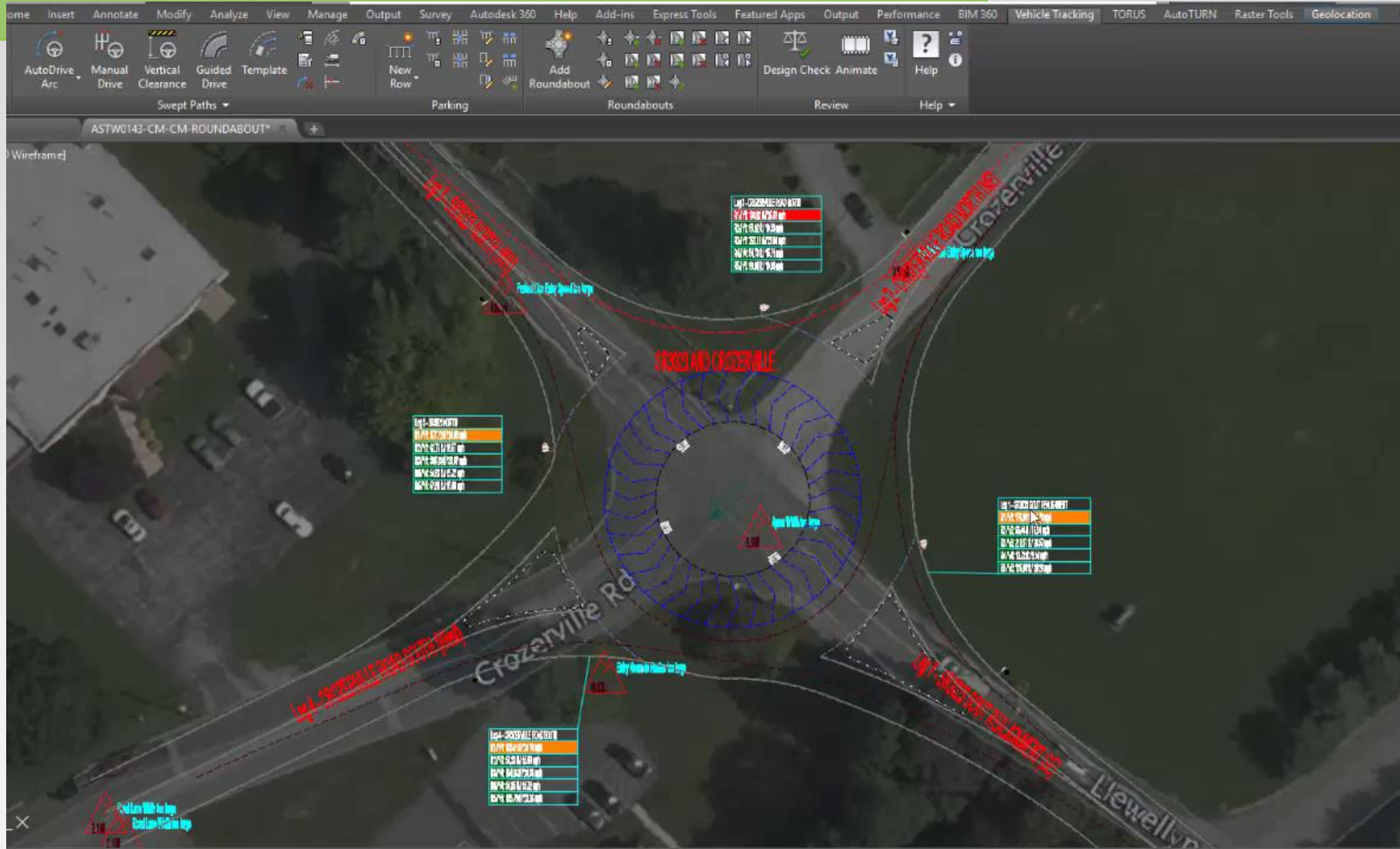
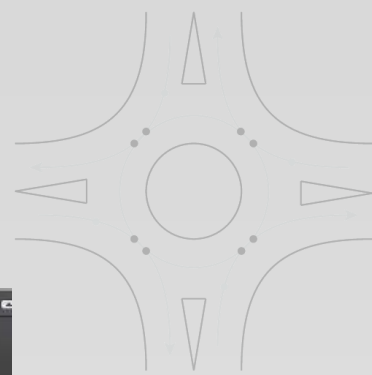
EXISTING ROUNDABOUTS



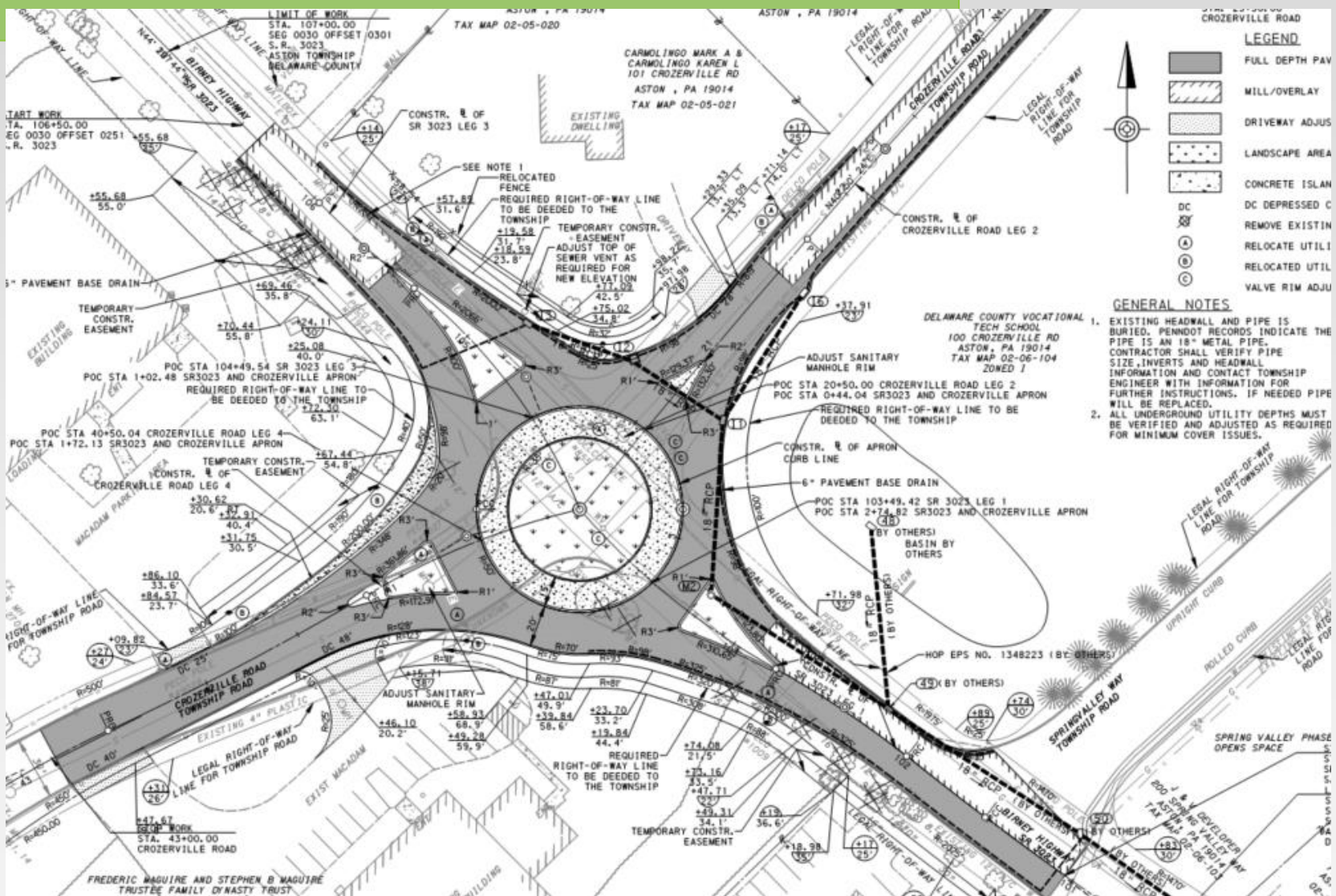
SWARTHMORE ROUNDABOUT



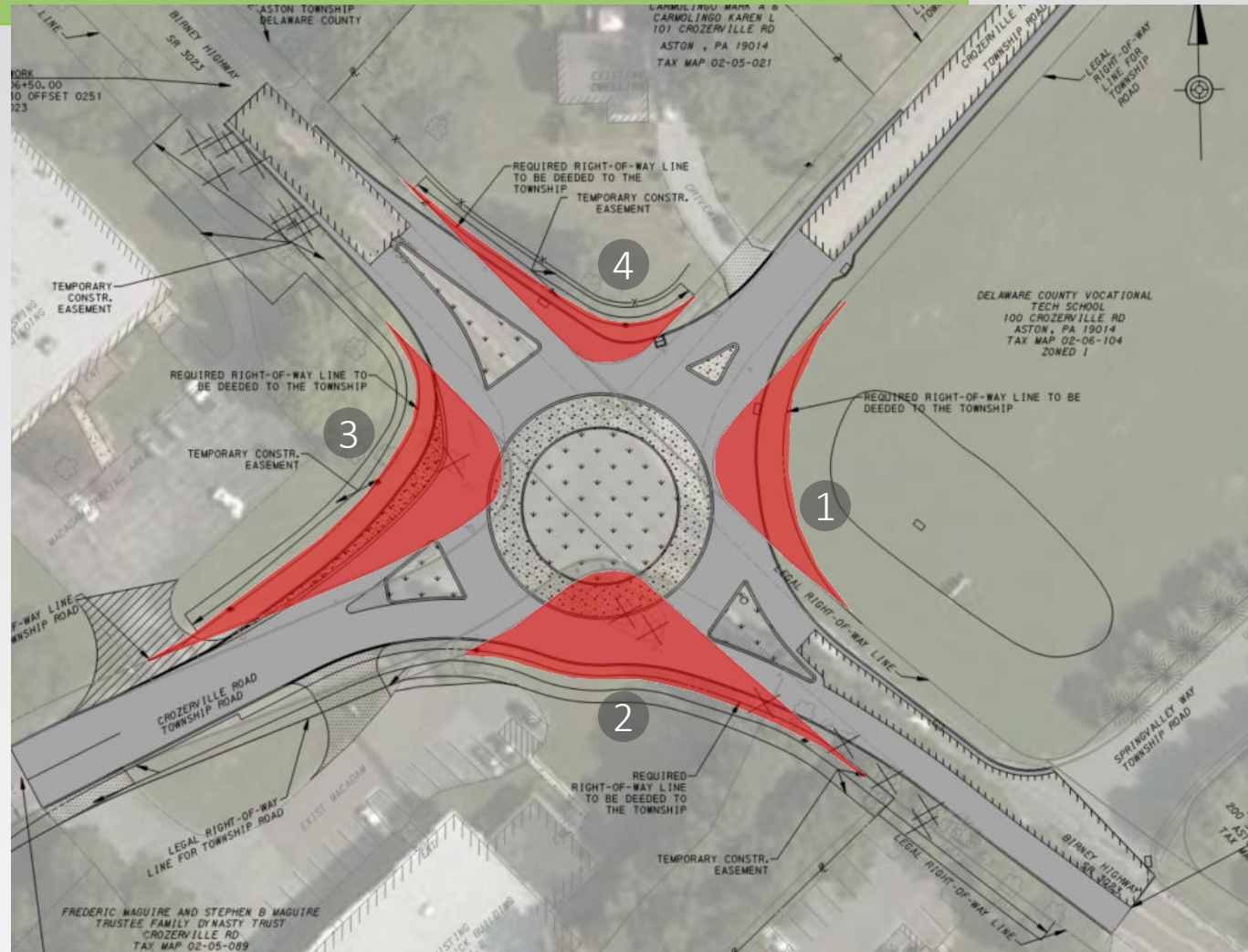
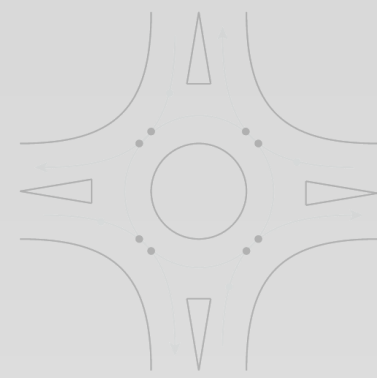
THE DESIGN – CIVIL 3D



PENNDOT APPROVAL



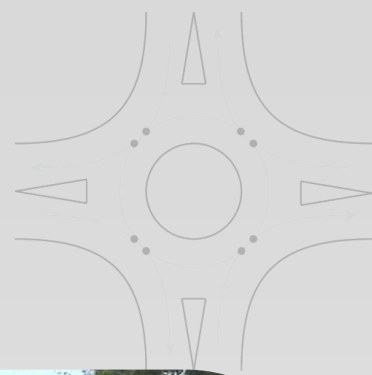
PROPERTY ACQUISITION



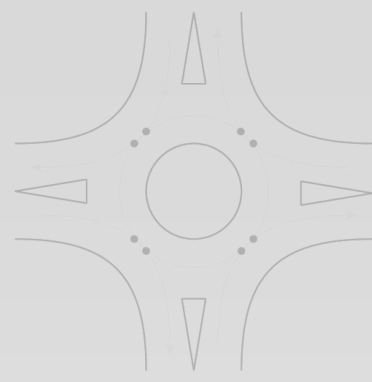
UTILITY COORDINATION



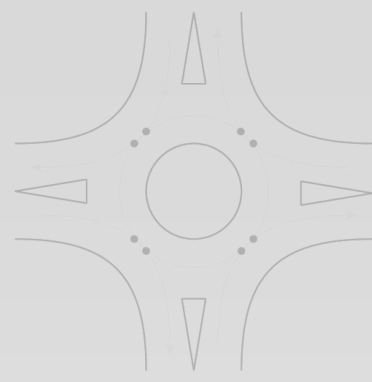
CONSTRUCTION



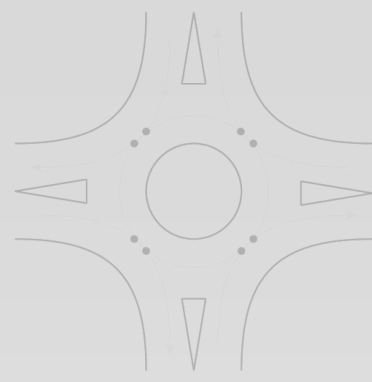
CONSTRUCTION



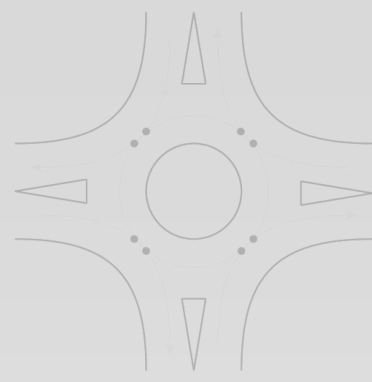
CONSTRUCTION



CONSTRUCTION



CONSTRUCTION



PUBLIC UPDATES DURING CONSTRUCTION

Aston Township Police Department
September 1, 2018 · 🌐
.....and on today's edition of "I didn't know the road was closed"

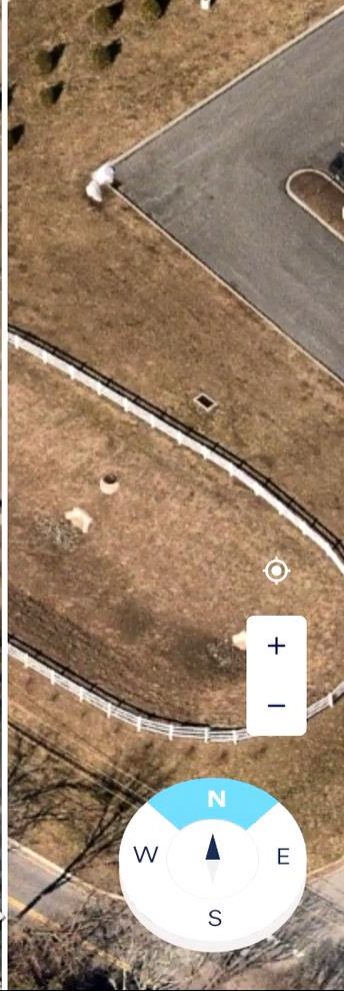
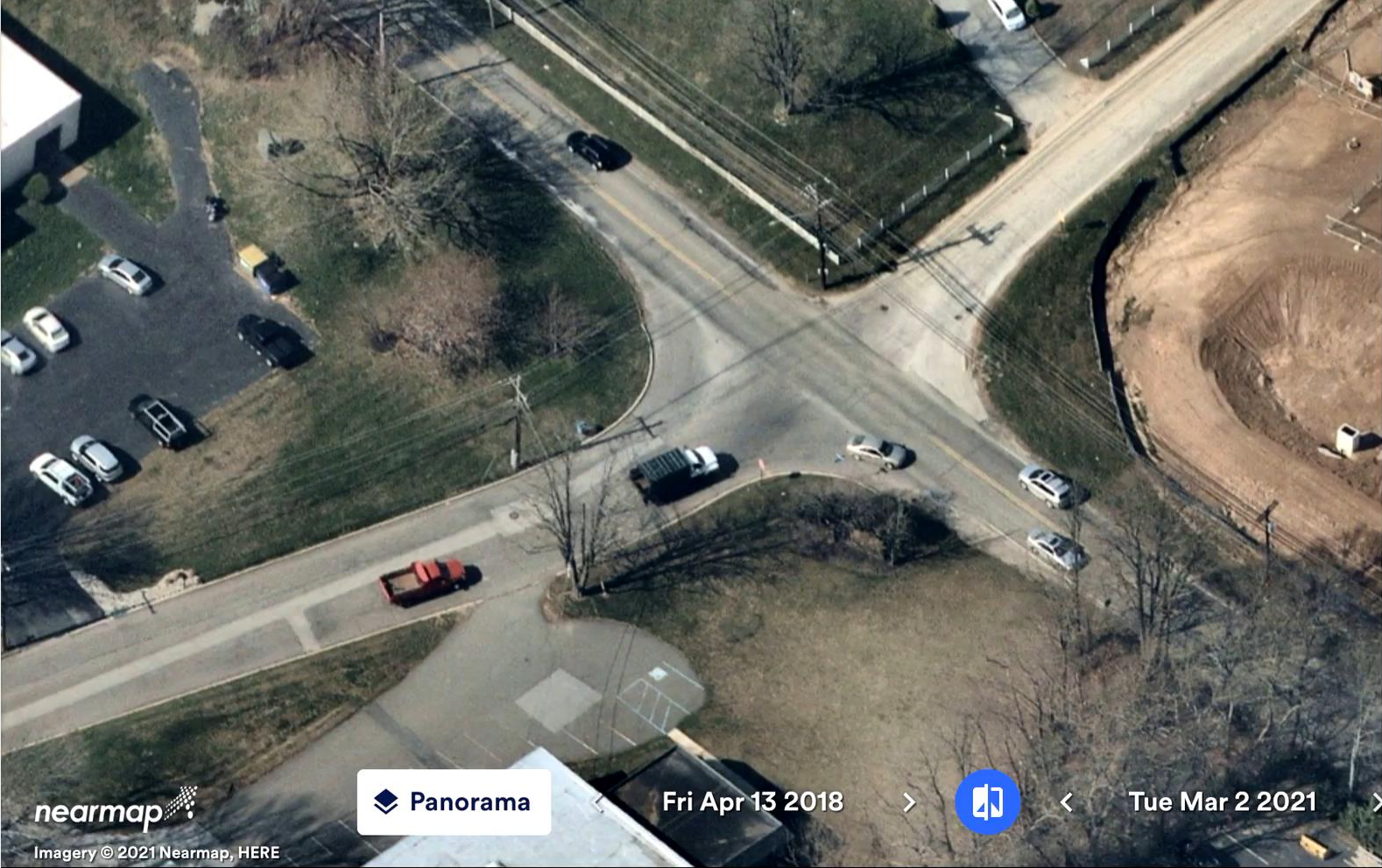


Aston Township Police Department
August 31, 2018 · 🌐
Crozerville Road and Birney Highway update: road is STILL CLOSED. The barricades are there for your safety. Anyone caught moving them will be cited accordingly. Anyone going through them will get stuck!
#DontBeThatGuy



Aston Township Police Department
August 28, 2018 · 🌐
Shhh! It's a secret. I heard the Aston Police are sitting on Birney Highway at Crozerville Road stopping people that move the barricades. Shhh, don't tell anyone!





nearmap
Imagery © 2021 Nearmap, HERE

Panorama

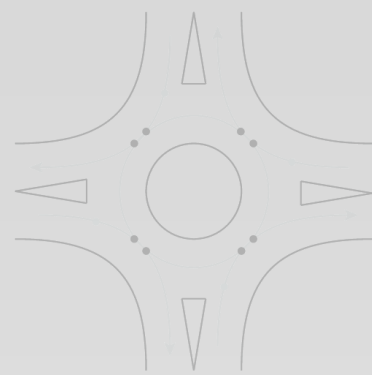
Fri Apr 13 2018



Tue Mar 2 2021



PUBLIC COMMENT



I would like to thank you both on the completion of the roundabout at Birney Highway and Crozerville Rd. Looking forward the the safety and forethought to improve Aston Township in the future use of the highways is a trait that you both share. All or the commissioners share in getting this project moving forward in the Upper Northwest Aston Section. I know that it was fraught with great effort on your part to move this project forward.

I know that this project will aid and assist the community in the future and calming the traffic on the highways involved. I have observed traffic flowing smoothly without having to stop.

Again, thank you for doing your jobs and spending your time making sure the residents live in a safe and secure area. Bill, please share this letter with Carol.



Congratulations to a job well done,



Aston Resident

I love it...great job!

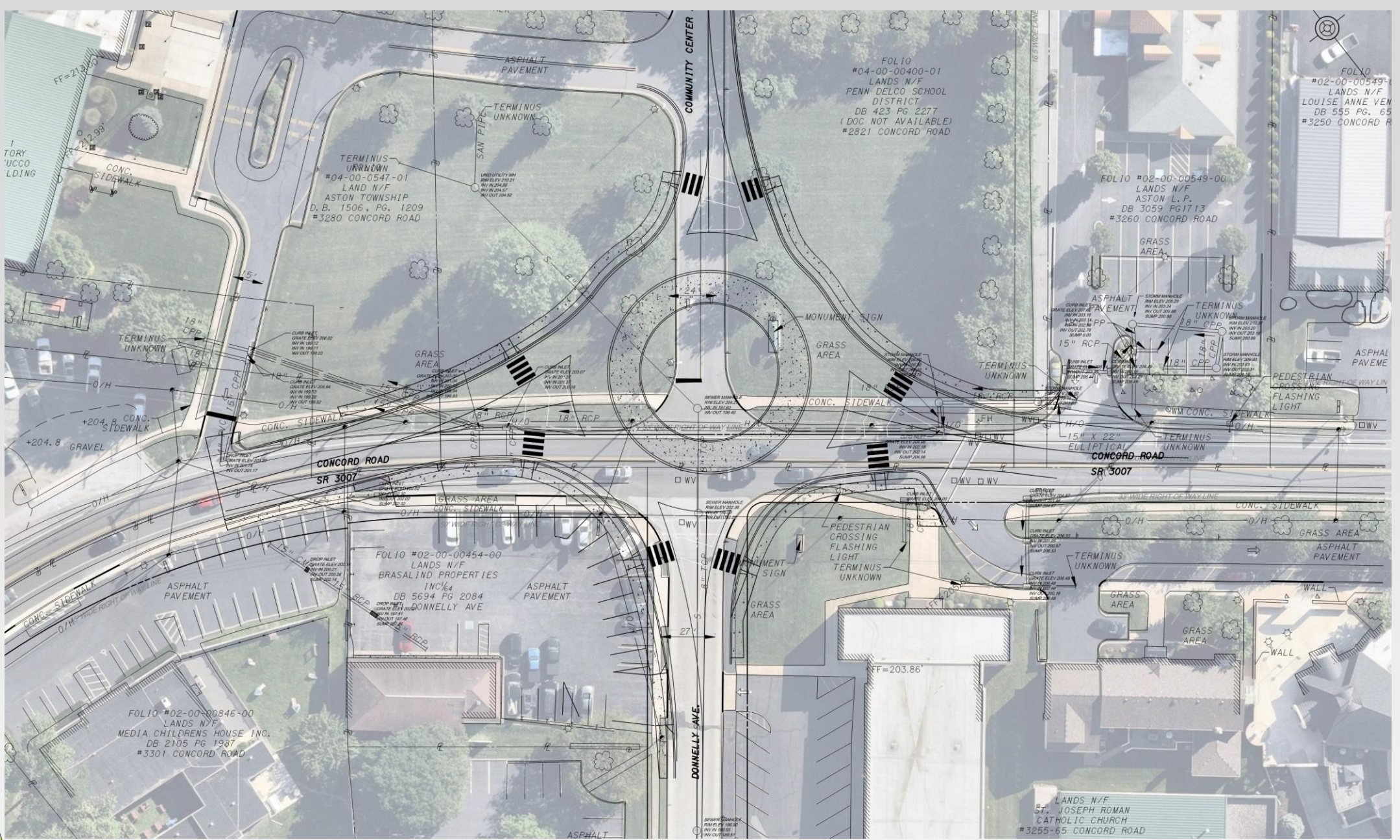


Aston Resident It took a long time and I am glad to see it finished. It is working very well. In my opinion, far better than a light or a four-way stop. Kudos to the idea. ...



WHAT WOULD A ROUNDABOUT LOOK LIKE AND HOW WOULD IT WORK AT THIS INTERSECTION?





FF=21.800
 CONC. SIDEWALK
 72.99'

TERMINUS UNKNOWN
 #04-00-0547-01
 LAND N/F
 ASTON TOWNSHIP
 D.B. 1506, PG. 1209
 #3280 CONCORD ROAD

FOLIO
 #04-00-00400-01
 LANDS N/F
 PENN DELCO SCHOOL
 DISTRICT
 DB 423 PG 2277
 (DOC NOT AVAILABLE)
 #2821 CONCORD ROAD

FOLIO
 #02-00-00549-00
 LANDS N/F
 LOUISE ANNE VEN
 DB 555 PG. 65
 #3250 CONCORD R

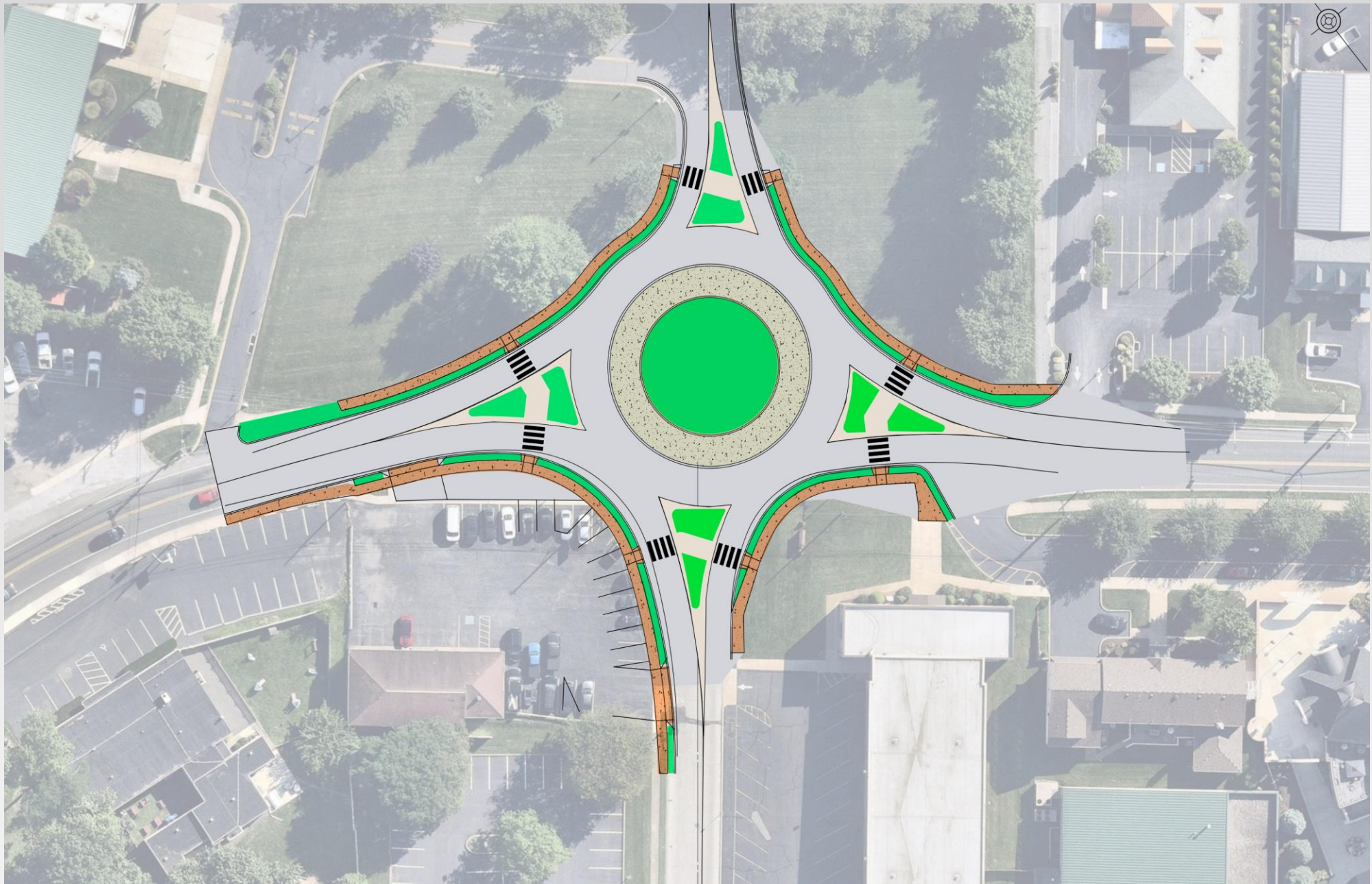
FOLIO #02-00-00549-00
 LANDS N/F
 ASTON L.P.
 DB 3059 PG 1713
 #3260 CONCORD ROAD

FOLIO #02-00-00454-00
 LANDS N/F
 BRASALIND PROPERTIES
 INC #4
 DB 5694 PG 2084
 #3301 CONCORD ROAD

FOLIO #02-00-00846-00
 LANDS N/F
 MEDIA CHILDRENS HOUSE INC.
 DB 2105 PG 1987
 #3301 CONCORD ROAD

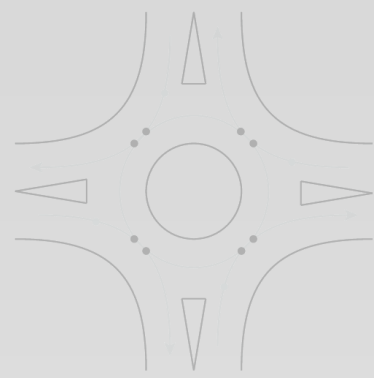
LANDS N/F
 ST. JOSEPH ROMAN
 CATHOLIC CHURCH
 #3255-65 CONCORD ROAD







FUNDING



- ◆ \$1,297,048 grant funding received from PennDOT Multimodal Transportation Funding (MTF)
- ◆ \$555,877 Township match required for a total cost of \$1,852,925
- ◆ \$350,000 to install a traffic signal plus an estimated \$6,000 per year (not counting inflation) for maintenance, future PennDOT mandated upgrades, electricity and pole knockdowns in perpetuity
- ◆ All future road maintenance for the roundabout will be PennDOT's responsibility (Concord Road – state route)



NEXT STEPS

- ◆ Continued public meetings
- ◆ Begin PennDOT design process
- ◆ Environmental Assessment
- ◆ Design Review
- ◆ Right-of-way and Property Coordination
- ◆ Access coordination with property owners
- ◆ Utility Coordination
- ◆ Construction currently planned without detour

Projected Timeline

- ◆ Complete design in 2022
- ◆ Completion 2023

