

PRESENTATION FOR CITY OF TROY – TRAFFIC ANALYSIS FINDINGS

PRESENTED BY:

Tony Lenhart, PE
Shane Morrie, PE



AMERICAN
STRUCTUREPOINT
INC.

PRESENTING TEAM



TONY LENHART, PE

tlenhart@structurepoint.com



SHANE MORRIS, PE

smorris@structurepoint.com

DATA REVIEW

The background features a dark blue-grey gradient. On the right side, there are two large, overlapping circles in a lighter shade of blue-grey, creating a modern, abstract design.

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HIGHLIGHTS OF TRAFFIC STUDY

- Counts now versus then (reduction).
- Overall LOS D and approach LOS E.
- Evening (PM hour) is the failing time period.
- No build:
 - LOS C overall in AM and LOS E in PM.
 - Fails shortly after about 10-year mark.

Table 4.2.1 – Capacity Analysis Results: No Build – Design Year (2047)

Peak Hour	Intersection	Approach	LOS	Delay (sec/veh)	v/c	95 th % Queue Length (ft)
AM	W Main Street & Experiment Farm/Stanfield Rd	NB	B	19.9	0.4	103
		SB	C	32.9	0.41	141
		EB	C	24.3	0.69	285
		WB	C	25.5	0.79	356
		Overall	C	25.1	--	--
PM	W Main Street & Experiment Farm/Stanfield Rd	NB	C	22.8	0.58	138
		SB	D	43.9	0.84	327
		EB	C	25.3	0.73	306
		WB	F	123.8	1.33	624
		Overall	E	67.5	--	--

**Reflects operations for left-turn movement only at each approach (two-way stop control)*

HIGHLIGHTS OF TRAFFIC STUDY

- Intersection improvements:
 - Add WB to NB right turn lane.
 - Add SB to WB right turn lane.
 - Update timing and Phasing to accommodate new lanes.
 - LOS C overall in AM and PM.

Table 4.3 – Capacity Analysis Results: Traffic Signal Improvements

Peak Hour	Intersection	Approach	LOS	Delay (sec/veh)	v/c	95 th % Queue Length (ft)
AM	W Main Street & Experiment Farm/Stanfield Rd	NB	B	18.8	0.39	106
		SB	C	29.9	0.41	126
		EB	C	24.4	0.68	294
		WB	C	21.0	0.79	296
		Overall	C	23.0	--	--
PM	W Main Street & Experiment Farm/Stanfield Rd	NB	C	24.7	0.60	143
		SB	D	38.2	0.88	228
		EB	B	29.0	0.77	316
		WB	C	33.6	0.97	362
		Overall	C	31.6	--	--

HIGHLIGHTS OF TRAFFIC STUDY

- Roundabout:
 - Multilane roundabout.
 - NB has a right turn bypass.
 - LOS A overall in AM and LOS C in PM.

Table 4.4 – Capacity Results: Roundabout

Peak Hour	Intersection	Approach	LOS	Delay (sec/veh)	v/c	95 th % Queue Length (ft)
AM	W Main Street & Experiment Farm/Stanfield Rd	NB	A	9.4	0.38	54
		SB	A	9.9	0.40	59
		EB	A	7.9	0.54	122
		WB	A	6.6	0.47	98
		Overall	A	7.9	--	--
PM	W Main Street & Experiment Farm/Stanfield Rd	NB	B	14.2	0.67	115
		SB	D	42.7	1.00	429
		EB	C	31.4	0.88	485
		WB	B	15.3	0.81	365
		Overall	C	24.2	--	--

HIGHLIGHTS OF REVISED SAFETY STUDY

- Current intersection problems.

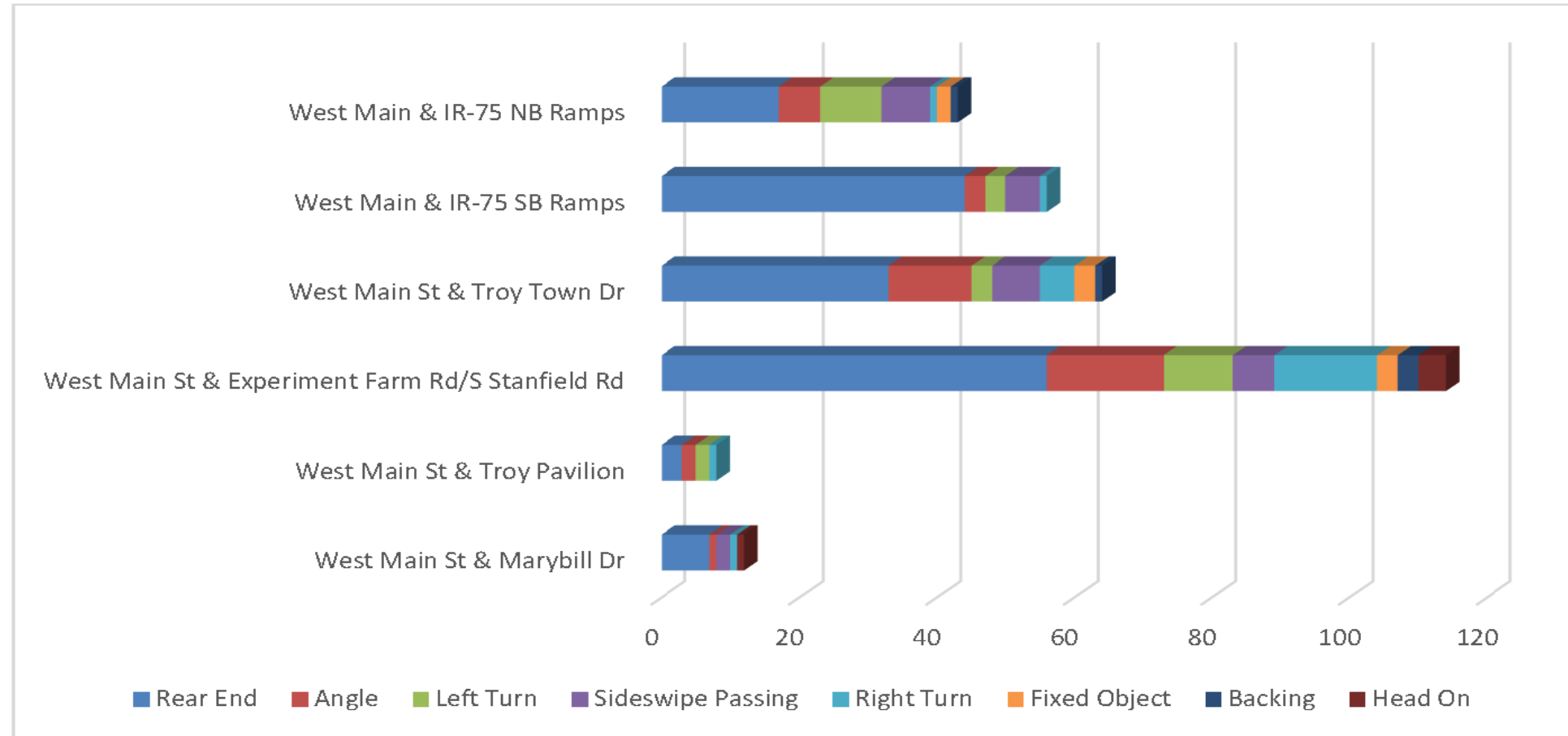
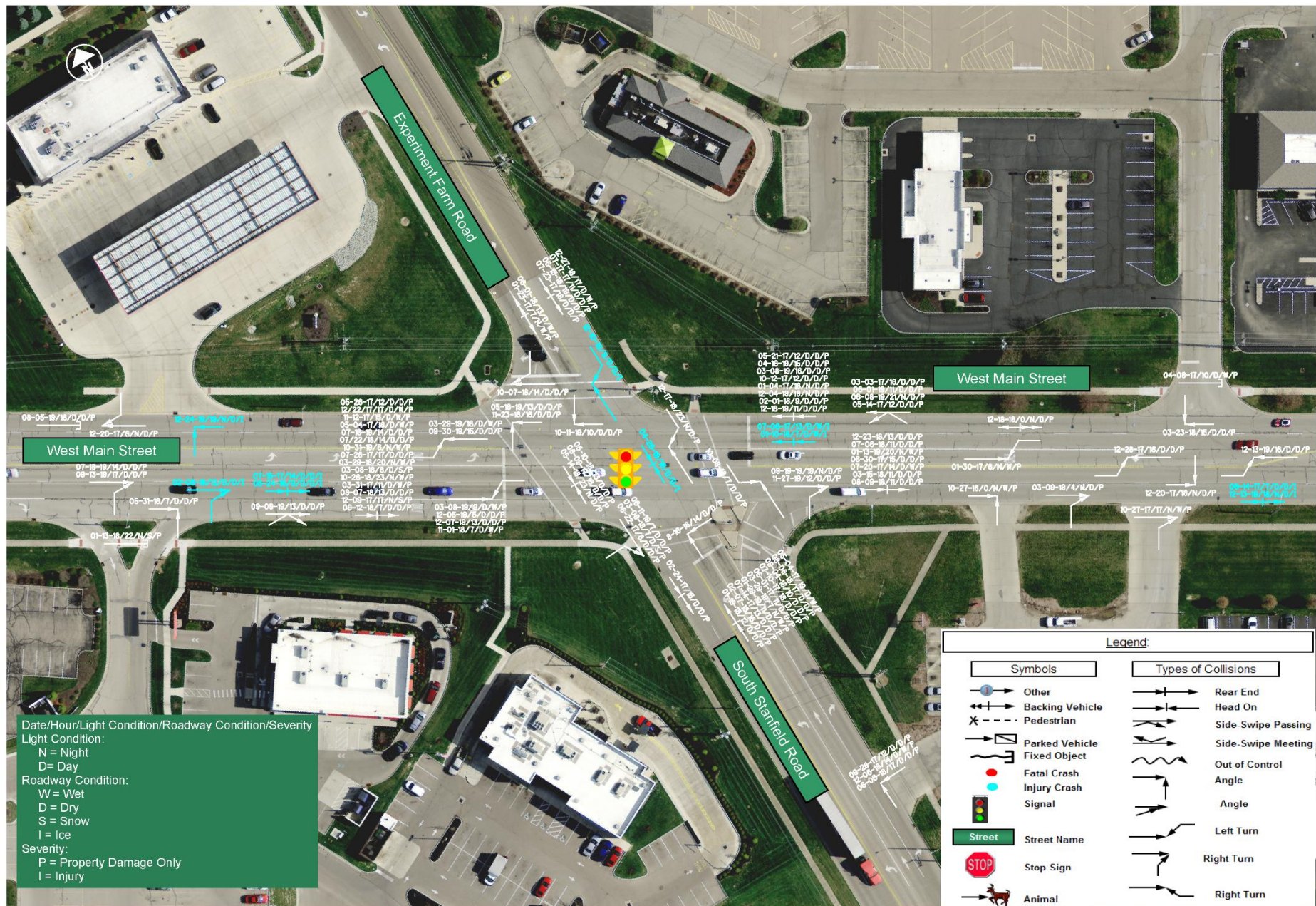


Figure 3-2 Crash Frequency by Location

HIGHLIGHTS OF REVISED SAFETY STUDY

- Congestion and closely spaced driveways.
- Skew – EB and WB left turns have to complete a 120-degree turn.
- Future bike trail will increase bikes/peds through intersection.
- Existing crosswalks are long and will grow longer with any type of widening.
- Intersection crashes – 114 total from 2017 thru 2019.



HIGHLIGHTS OF REVISED SAFETY STUDY

- New countermeasures requires (review of data standards).

ROUNDAABOUT

Reduce frequency and severity of rear end and angle type crashes at intersection.

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ACCESS MANAGEMENT

Restrict driveway accesses to RIRO near intersection by constructing splitter islands.

ROUNDAABOUT RECOMMENDATION

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ROUNDABOUT VS. SIGNAL

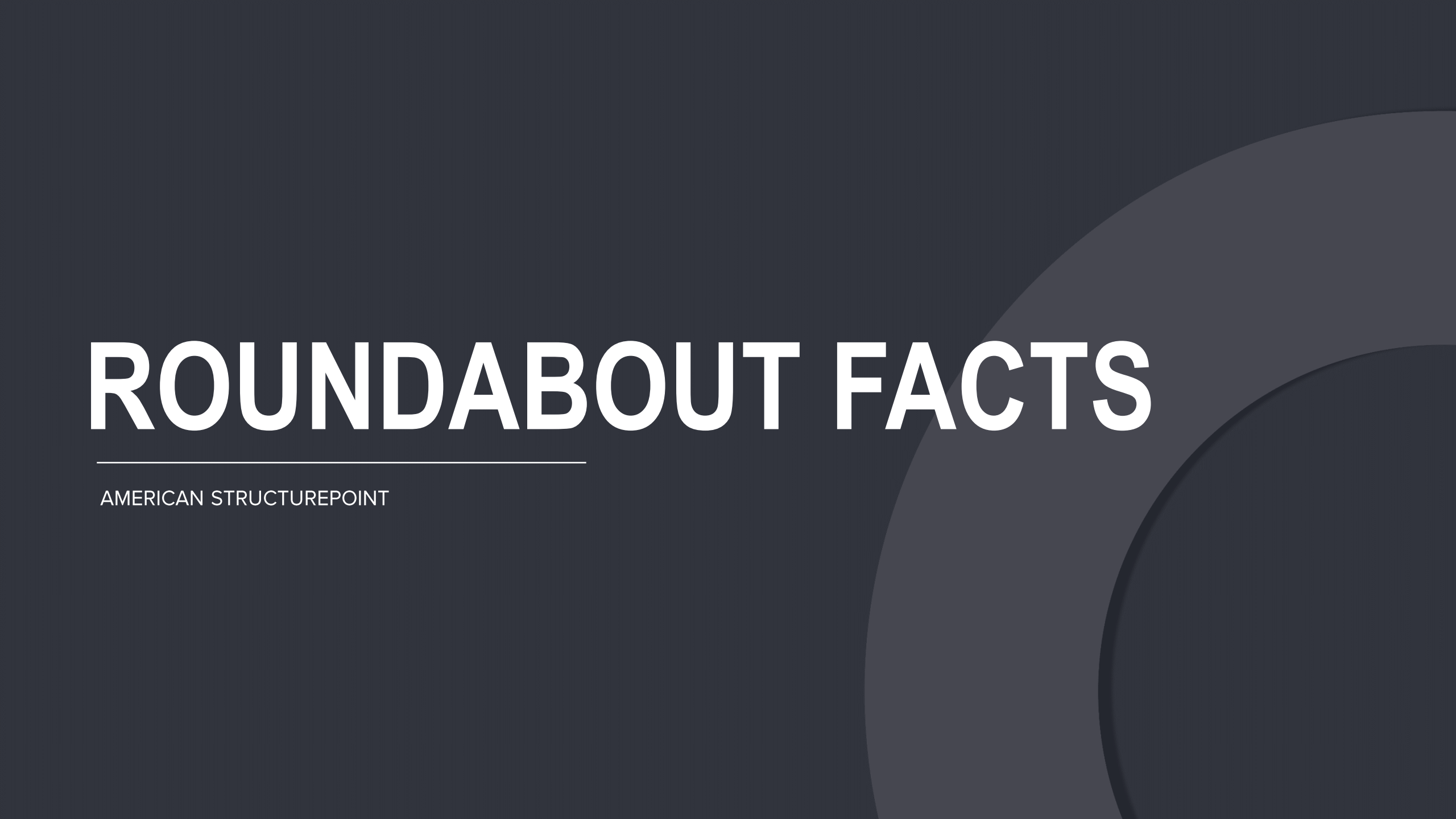
ROUNDABOUTS

- ✓ Operate more efficiently with lesser delays during AM and PM peak hours.
- ✓ Future proof with the ability to handle additional traffic volumes.
- ✓ Reduce frequency and severity of rear end and angle crashes.
- ✓ Splitter islands can be used as refuge islands on W Main Street.

SIGNALS

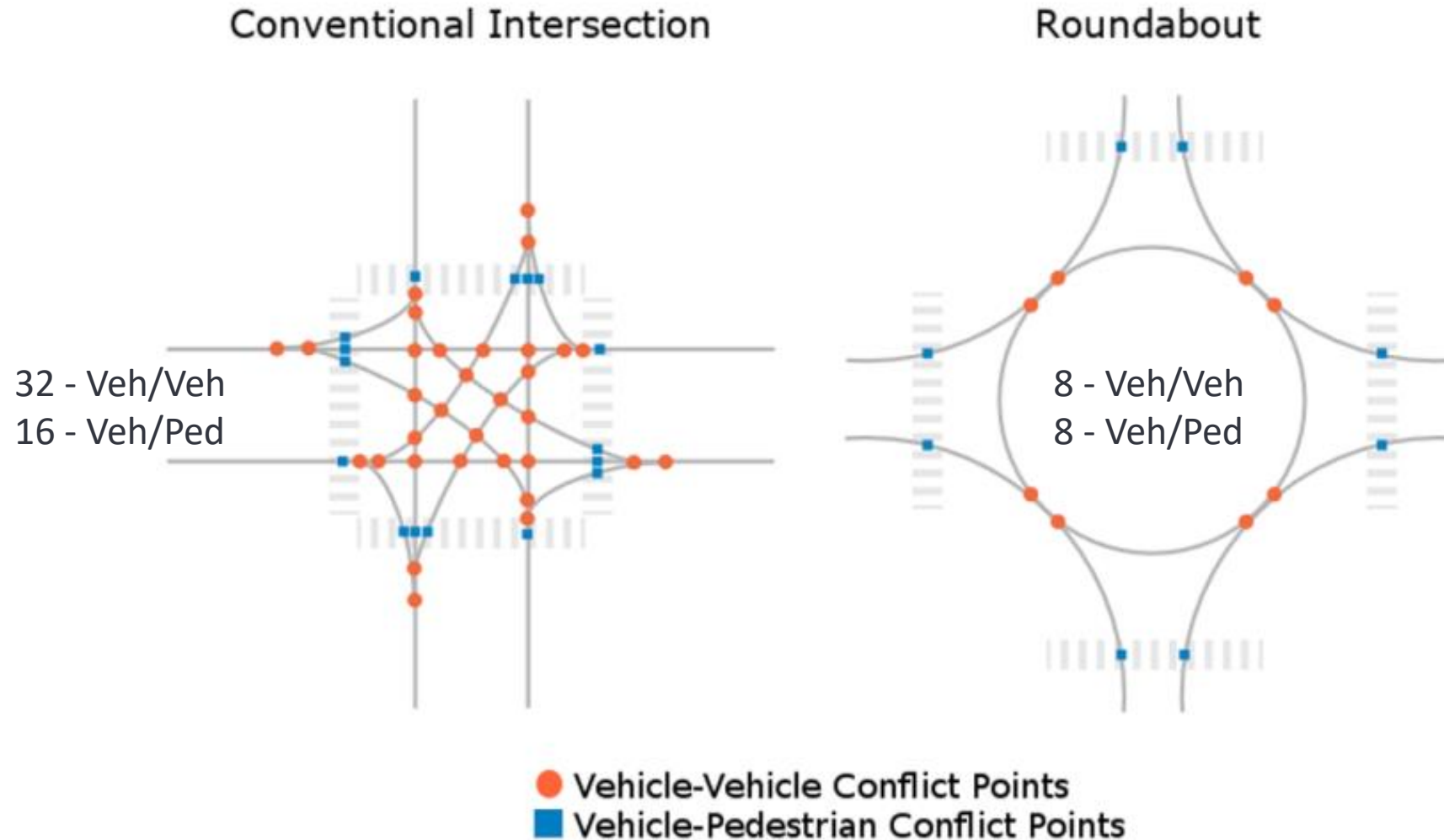
- More delay.
- Signals mean more turn lanes:
 - The proposed crosswalk would become 130 feet and pedestrian phase will be over 40 seconds long with no refuge or safe area for pedestrians.
 - More pavement to maintain.
- Equipment upgrade needed.
- Does not reduce rear end and angle crashes.

ROUNDAABOUT FACTS

The background features a dark blue-grey color with vertical stripes of varying shades. On the right side, there are large, overlapping circles in different shades of blue and grey, creating a layered effect.

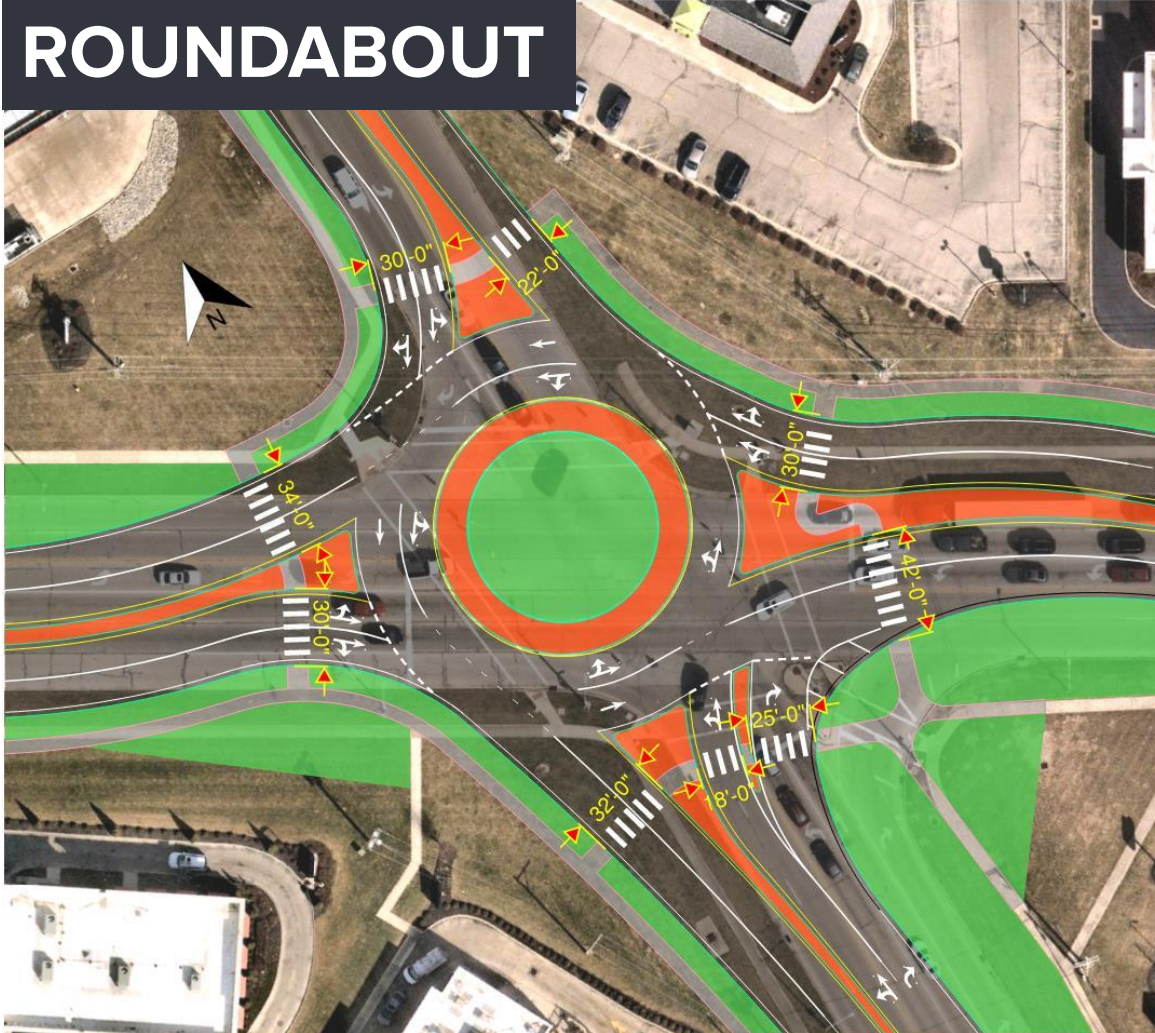
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REDUCTION OF CRASHES/CRASH POINTS

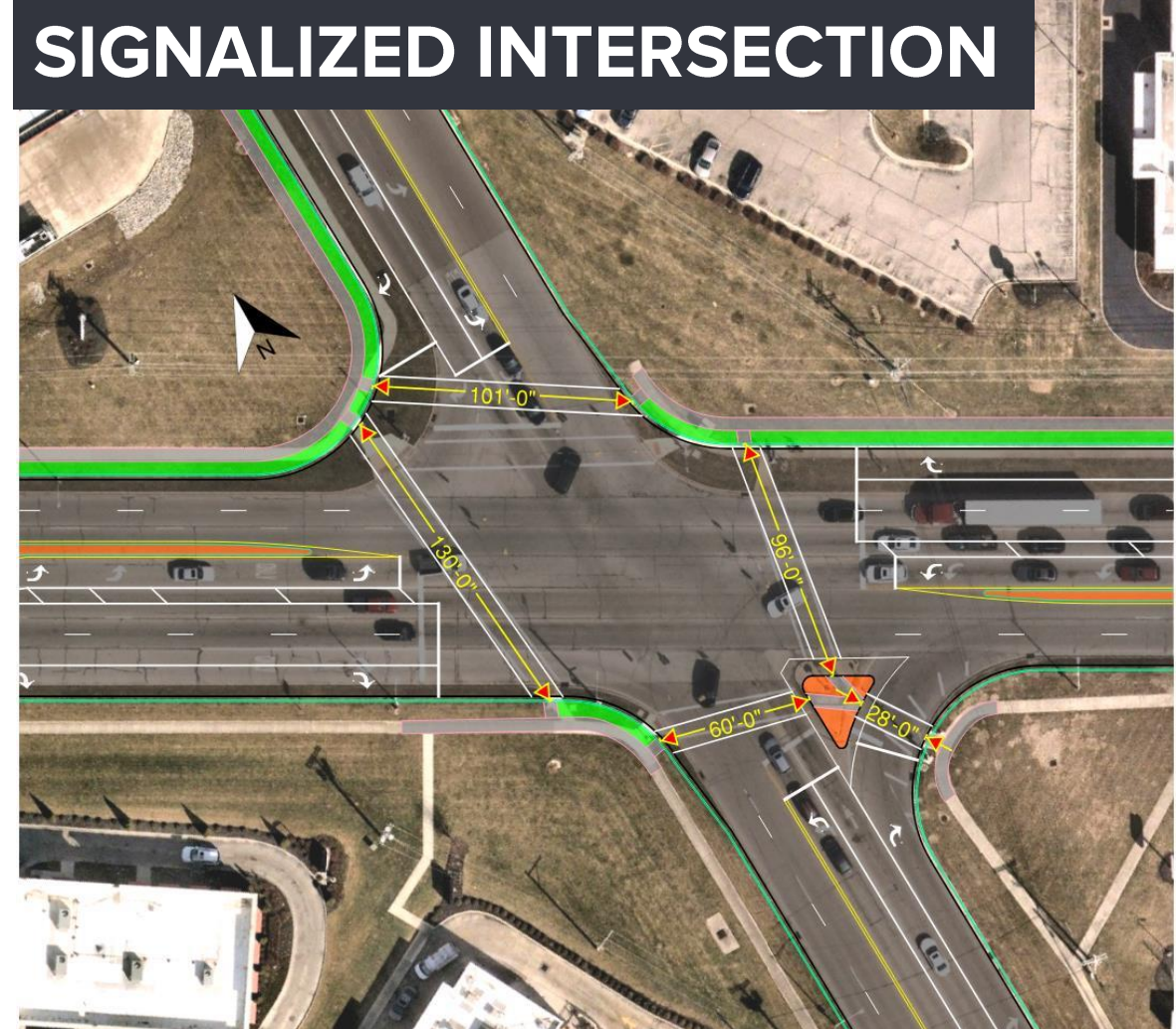


PEDESTRIAN CROSSING MOVEMENTS

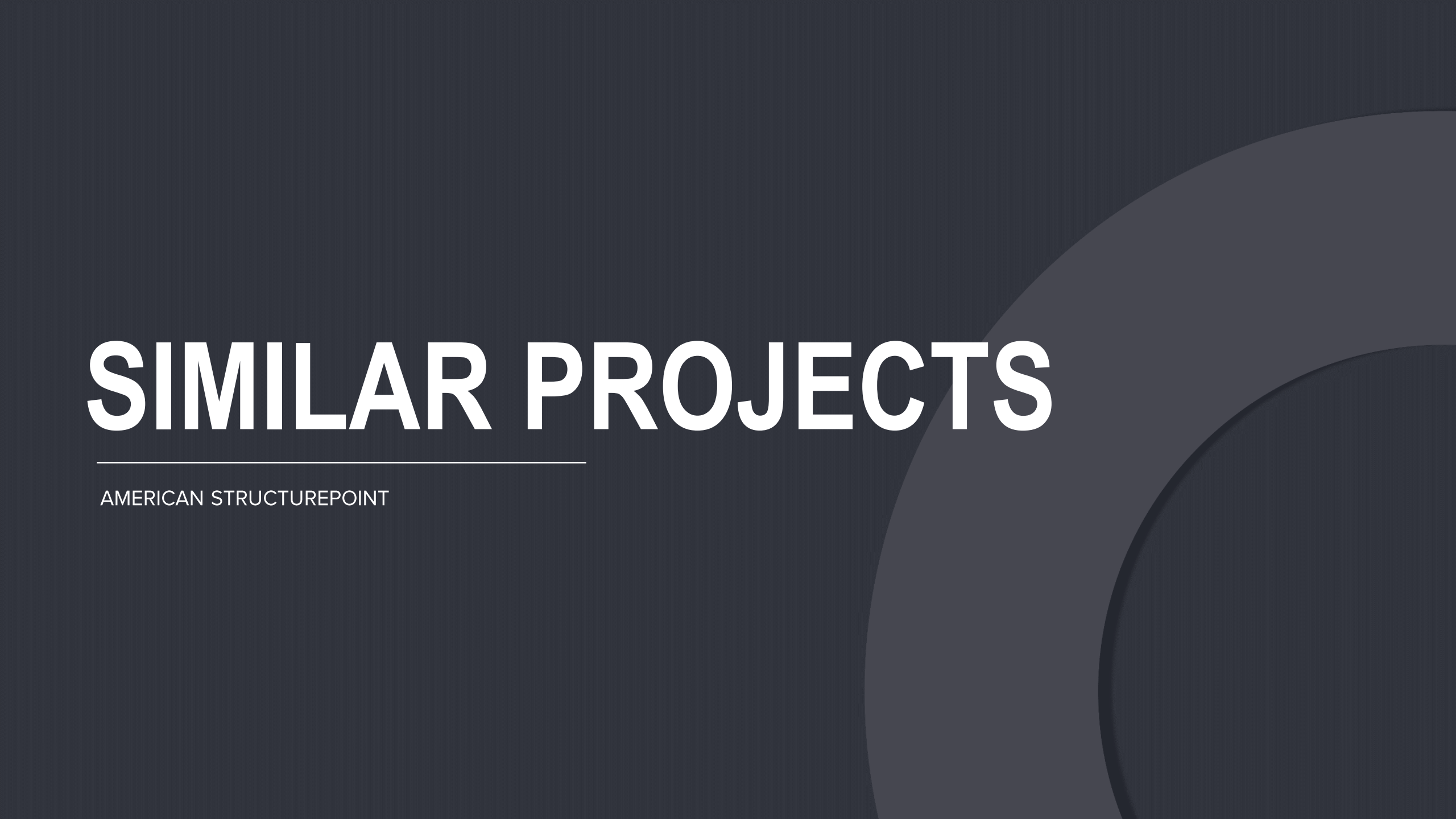
ROUNDABOUT



SIGNALIZED INTERSECTION

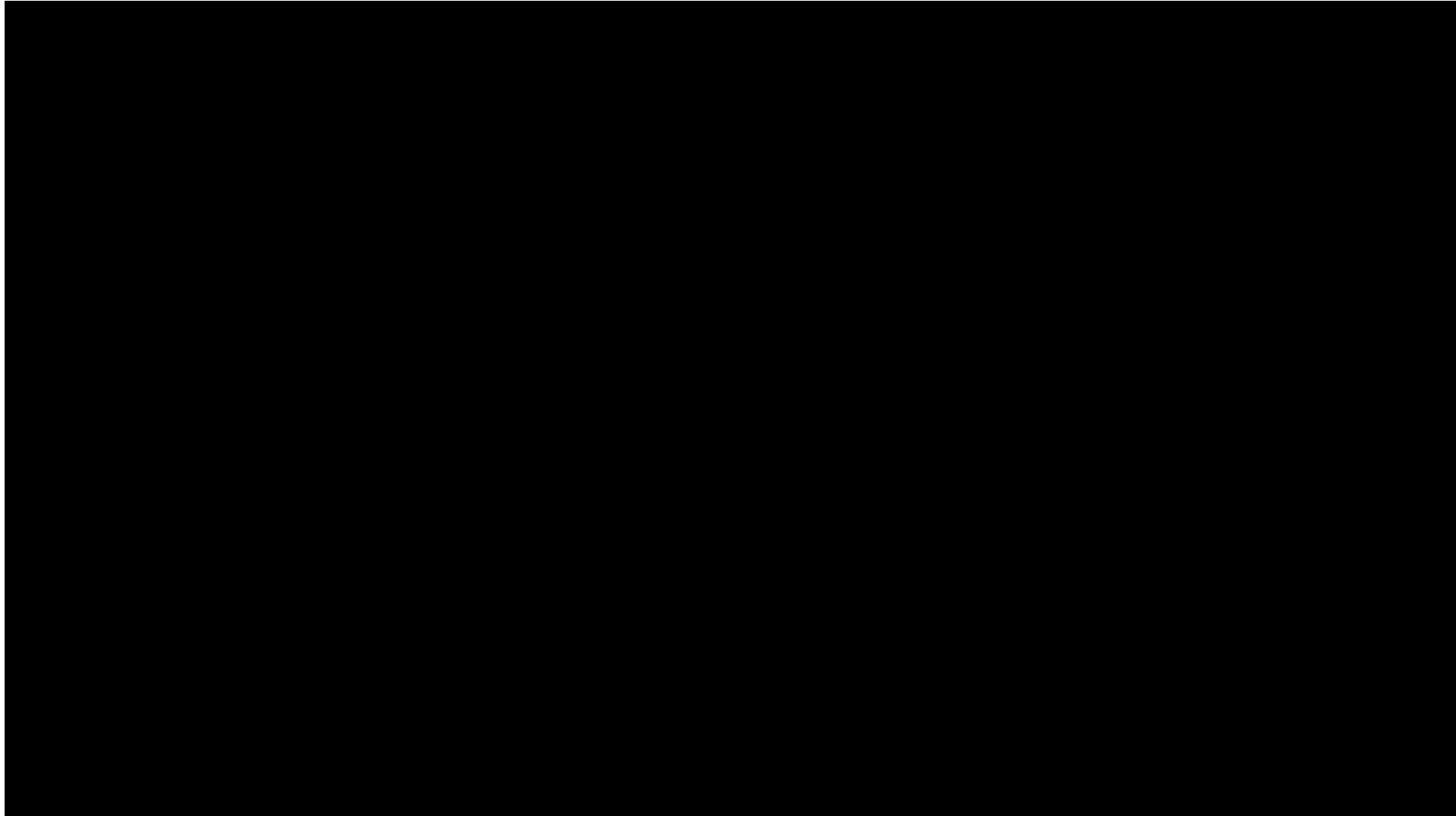


SIMILAR PROJECTS

The background features a dark blue-grey color with a series of vertical stripes of varying widths. On the right side, there are two large, overlapping circles in a lighter shade of blue-grey, creating a modern, geometric aesthetic.

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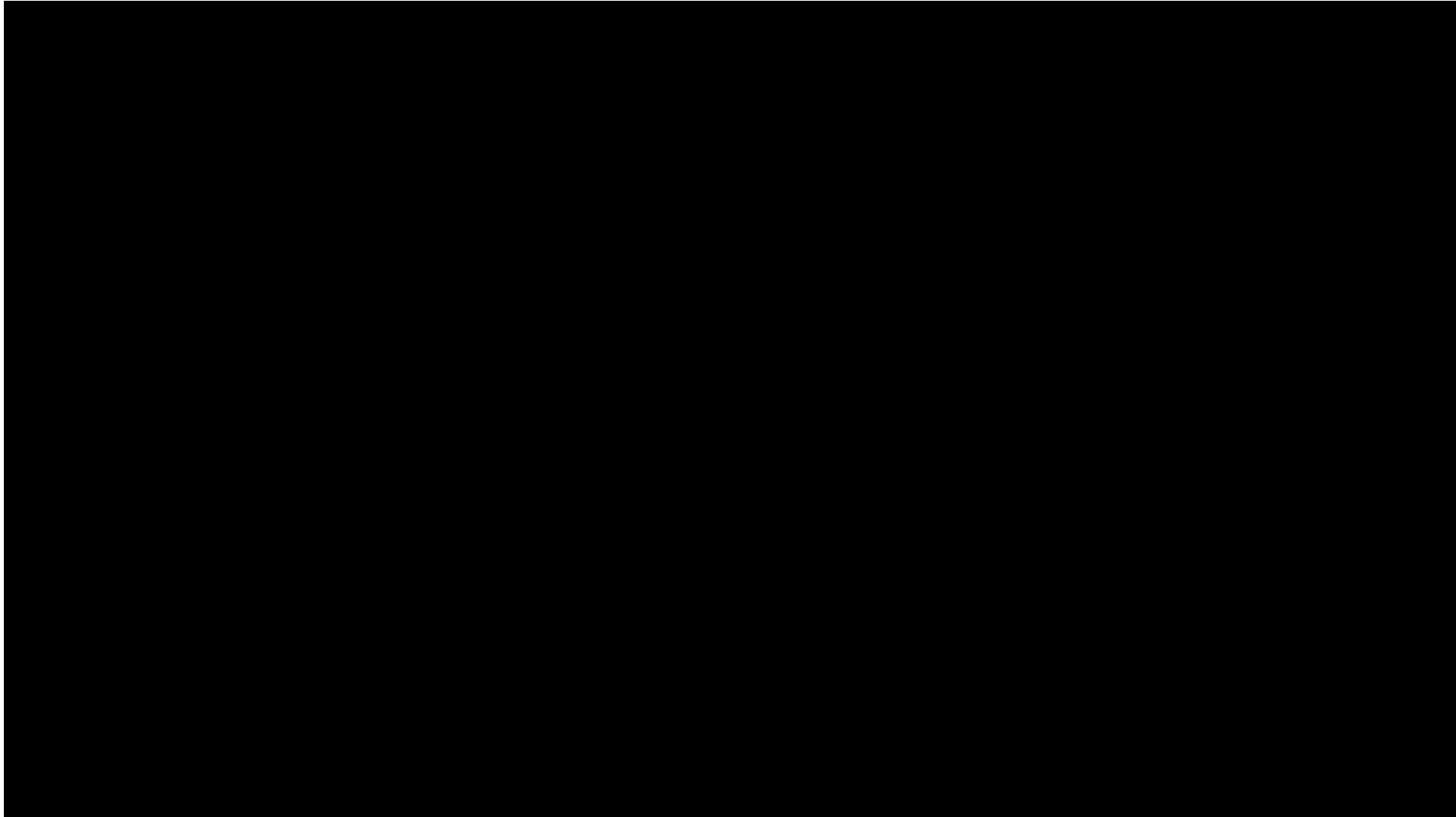
EXISTING 2X2 ROUNDABOUT - **BLUE ASH**



EXISTING 2X2 ROUNDABOUT - BLUE ASH



EXISTING 2X2 ROUNDABOUT - THE HUB (GREEN)



EXISTING 2X2 ROUNDABOUT - **THE HUB (GREEN)**



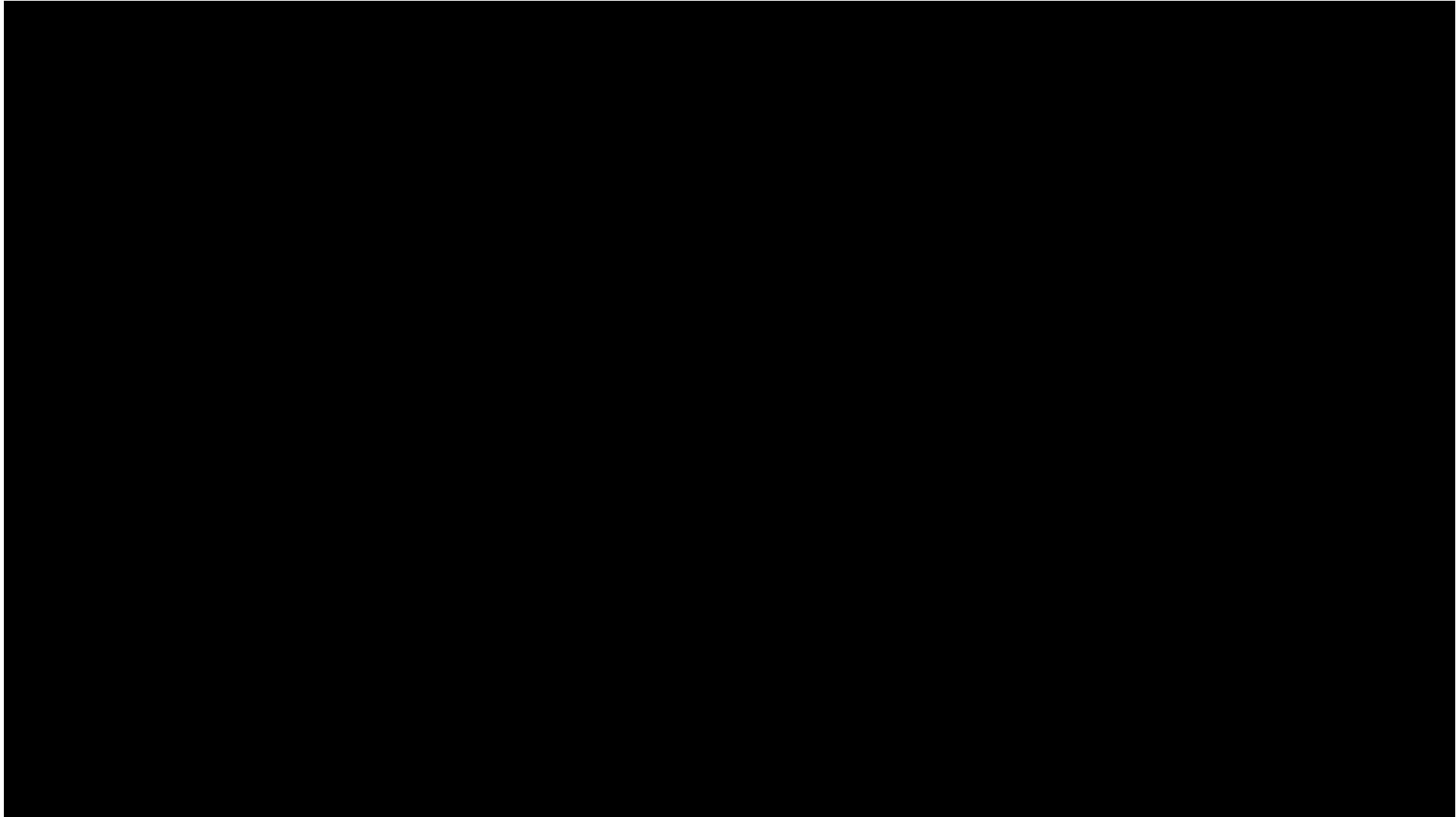
EXISTING 2X2 ROUNDABOUT - CARMEL, INDIANA



REVIEW FINDINGS

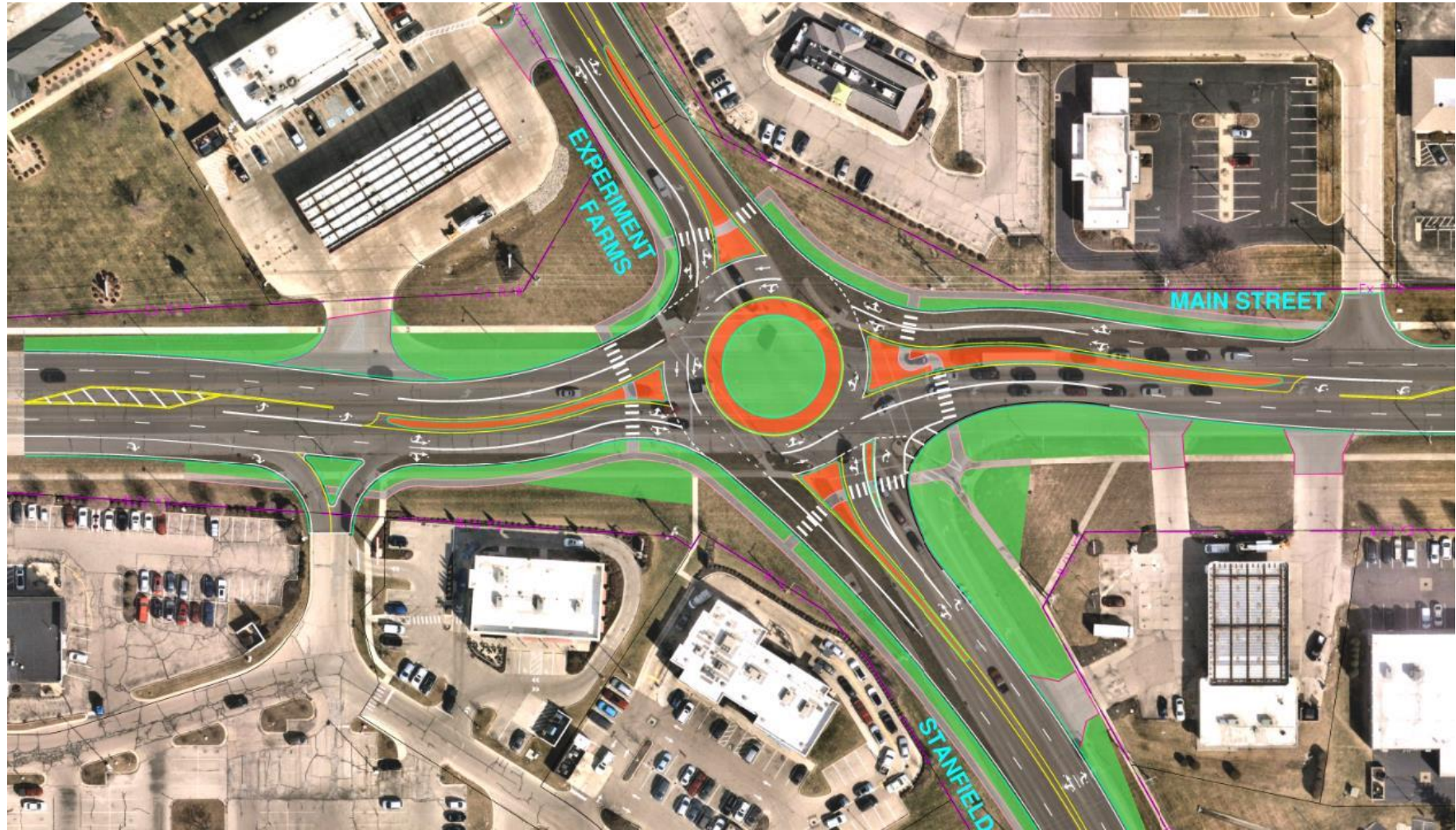
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PROPOSED 2X2 ROUNDABOUT - TROY, OHIO



BENEFITS OF ROUNDABOUT SOLUTION

- Significant reduction in crashes.
- Cost.
 - No right-of-way cost.
- Improvement access management.
- Pedestrian/bike trail tie-ins.
- Minimal future maintenance costs.
- Minimize user delay cost for the traveling public



NEXT STEPS

INITIAL TO-DO'S ONCE UNDER CONTRACT:

- Field survey.
- Public involvement.
- Detailed design.

QUESTIONS?

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THANK YOU!

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