



OHIO DEPARTMENT OF TRANSPORTATION

DISTRICT 1 • 1885 NORTH McCULLOUGH ST. • LIMA, OHIO 45801 • (419) 222-9055
JOHN R. KASICH, GOVERNOR • JERRY WRAY, DIRECTOR • KIRK SLUSHER, P.E., DISTRICT DEPUTY DIRECTOR

Traffic Operations Assessment Systems Tool CY23

DEF-SR 15-12.04

Intersection of SR-15 & SR-18

TOAST Rank (Score): Urban Non-Freeway Segment

District Rank #92 of 333 (79.5%)

Derrick Schierloh, P.E. 1/2/2024



Introduction

The intersection of SR-15 and SR-18 was identified as a TOAST Study candidate through discussions with ODOT Defiance County personnel and the District Safety Review Team. It is located 1.25 miles northwest of the City of Defiance and the US-24 interchange. Intersection traffic movements are conducted by way of an overhead flasher which displays a caution yellow for the through traffic on SR-15 and a stop red for eastbound SR-18 making a left turn onto northbound SR-15. The overhead flasher is the last of its kind on ODOT maintained roadways in District One. There is also a slip lane for eastbound SR-18 to continue east. The slip lane is a single lane which yields to SR-15 eastbound traffic and enters on a curve and requires traffic to look back over their left shoulder to see oncoming vehicles. There are existing conventional light poles around the intersection. CR-153 (Stever Rd.) runs north-south and intersects with SR-15 on the north side approximately 350' northwest of the intersection. There are centerline rumble stripes to the east and west of the intersection on SR-15.

Traffic Volume Summary

Year	SR-15		SR-18	
	AADT	Trucks	AADT	Trucks
2021	9061	469 (5%)	2286	154 (7%)
2018	9720	548 (6%)	2648	292 (11%)
2015	9291	516 (6%)	2792	279 (10%)
2013	8043	316 (4%)	2474	247 (10%)
2010	8400	330 (4%)	2450	250 (10%)

Countermeasures

The potential countermeasures examined in the recent feasibility study were as follows:

- Additional lighting and replacement of the overhead flasher.
- Realigning the intersection to better intersect SR-18 and install a traffic signal.
- Construct a three-leg roundabout.
- Construct a four-leg roundabout to include the intersection of CR-153 (Stever Rd.) to the north.

It was determined that the three-leg roundabout was the preferred alternative based on benefit-cost analysis and overall expected performance,

Summary

Based on the results of the feasibility study and discussions with the District Safety Review Team, the District intends to pursue the construction of a three-leg roundabout to replace the overhead flasher and slip ramp intersection. This would naturally slow traffic coming in and out of the east side of the intersection and remove the need for SR-18 eastbound traffic to look back while attempting to merge. Roundabouts have proven to be more efficient in the circulation of traffic and decrease the severity of crashes compared to traditional intersections.

TOAST Score

Overall = 79.5%

Bottlenecks (Passthrough) = 10/10

Bottlenecks (Origination) = 10/10

There are no apparent concerns of bottlenecks occurring or originating within the corridor.

Travel Time Performance = 7/10

Travel Time Index = 10/10

The percentage of time speeds are within 90% of the reference speed. The flasher at the intersection of SR-15 and SR-18 does not benefit the movement of traffic in all directions.

TSMO Safety (% Rear End) = 6/10

TSMO Safety (Crash Severity Impact) = 6/10

From 2018-2023 there have been 35 non-animal related crashes near the intersection, 12 of which were rear ends (34.3%). Eight of those crashes involved serious injury (22.9%). There is also evidence of roadway departure and rollover crashes east of the intersection from vehicles negotiating the curve at a high rate of speed.

Traffic Incident Management (Incident Clearance) = 2/10

Traffic Incident Management (Secondary Crashes) = 8/10

The incident clearance score can be attributed to the rural nature of the intersection. While the route is designated as “urban non-freeway”, it is located outside of the limits of the City of Defiance.

Traffic Volume Data (Volume Per Lane) = 6/10

Traffic Volume Data (Freight Corridors) = 9/10

SR-15 carries 4,203 vehicles per lane mile which is 48th of the 303 non-freeway segments in District One.