LOGAN COUNTY

State Route 117 SLM 4.865
at State Route 366 (SLM 9.834)/Township Road 100 (0.00)

Completed by Mary E. Hoy, P.E.
May 24, 2023 DSRT Meeting

Purpose

The purpose of this study is to review the above referenced intersection of State Route 117 and State Route 366 in Logan County, and to determine potential countermeasure actions that can be taken to improve traffic safety. This study was initiated by a request from an area resident whose son was killed in a crash at this intersection that occurred in 2004 (see attached).

Ranking

Checked 2021 SA Ranking Lists; no rankings found.

Background

Location	● This intersection is located in Logan County north of the Village of Huntsville and east of the Village of Russells Point. ● This intersection is near Indian Lake and forms the southeast corner of state routes encircling Indian Lake. ● Land uses adjacent to the intersection are mostly agricultural with commercial in the southeast corner and residential nearby. ● The intersection is less than a mile south of a stone quarry/concrete plant and other businesses.
Functional Classification	SR 117 (north and south legs) – Rural Major Collector SR 366 (west leg) – Rural Major Collector TR 100 (east leg) – Rural Local
Speed Limit	55 mph on all approaches
History	2013 Sign upgrades were made at the intersection due to inclusion in the Systemic Safety Intersection Sign Upgrades.

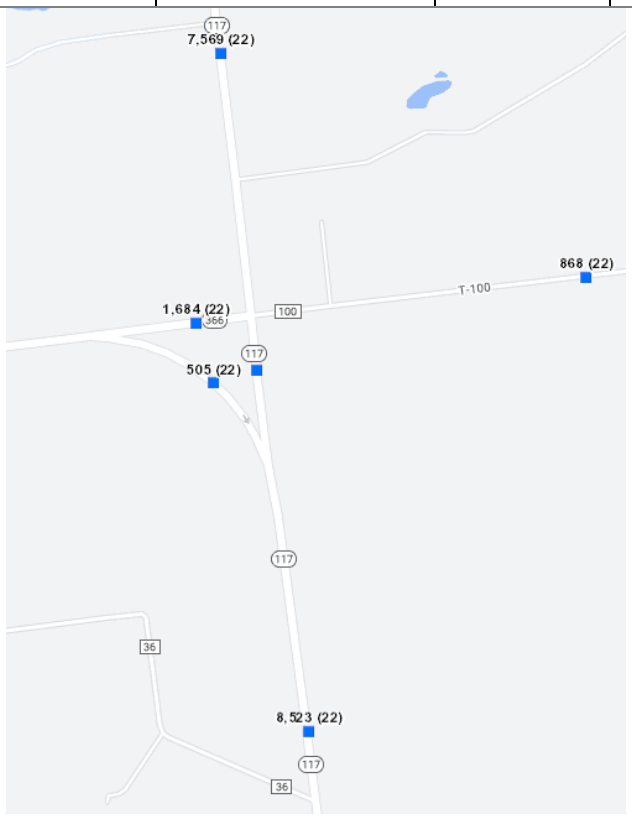
Existing Conditions

Documentation GoPro Video/Photos - recorded 4/26/2023.
(\\D07FS009\RS_Videos\GoPro\Mary\LOG\2023_4_26 LOG SR 117 and SR 366)

TMMS Count Data

COUNT LOCATION	2020 TOTAL	2020 B & C	2020 SPEED	2017 TOTAL	2017 B & C	2017 SPEED	2014 TOTAL	2014 B & C	2014 SPEED	2011 TOTAL	2011 B & C
SR 117 SLM 4.652 (ID 20946; S of SR 366)	7108	950 (13%)	59	8947	858 (10%)	58	6396	859 (13%)	63	6484	765 (12%)
SR 117 SLM 4.082 (ID 5046; N of SR 366)	7161	1013 (14%)	61	8036	1132 (14%)	62	6243	875 (14%)		4404	617 (14%)
SR 366 SLM 0.346 (ID 19946; W of SR 117)	1593	84 (5%)	53	1810	182 (10%)	53	1229	31 (3%)		1420	160 (11%)
TR 100 SLM 0.619 (ID 682590; E of SR 117)				875							

*Speed data from TMMS is the 85th percentile speed and is in miles per hour.



Screenshot from TMMS showing nearest count locations:

Turning Movement Count Data

10 hours total collected on Thursday, 5/11/23 from 6:30 to 8:30 am and 10:00am to 6pm.

SR 117 & SR 366/TR 100	Northbound (SR 117)			Southbound (SR 117)			Eastbound (SR 366)			Slip Ramp	Westbound (TR 100)			Total*
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	EB to SB	Left	Thru	Right	
AM Peak Hour (7:00-8:00am)	18	210	9	0	309	13	12	8	2	28	17	15	3	**616**
Mid-day Peak Hour (10:30-11:30am)	42	273	10	0	270	26	17	8	1	Not Counted	8	12	3	**670**
PM Peak Hour (3:45-4:45pm)	56	413	18	3	396	20	20	35	3	46	10	22	2	**998**
10 Hour Total	**398**	**3031**	**117**	**11**	**3054**	**227**	**169**	**149**	**23**	**-**	**99**	**122**	**19**	**7419**

**Total is for main intersection only and does not include slip ramp volumes.*

Site Conditions

Lane / Geometric Configuration	● This intersection has a slip ramp from EB SR 366 to SB SR 117. ● All approaches have one lane in each direction; there are no turn lanes. ● There are no significant horizontal or vertical curves at the main intersection.
Traffic Control	● The intersection has minor road stop control ● The EB and WB approaches have dual 36” Stop Ahead signs and dual 36” stop signs. ● The north and south approaches are free-flow and have dual 36” intersection warning signs on both approaches. ● The slip ramp has a Yield Ahead and a Yield sign. ● Intersection no passing zones are striped on all state route approaches; TR 100 does not have any pavement markings. ● SR 117 has edgeline and centerline rumble stripes. ● Sight distance exceeds 1000ft in either direction from both stop approaches.
Light Condition	The intersection is not lighted.

Screenshot from video on northbound SR 117 at SR 366/TR 100.

Recent and Programmed Projects

PID	C-R-S (Work Limits)	Work Description	Award Date	Completion Date	Amount
103259	LOG-SR 366-3.005 to 9.735	2019 District wide fast dry pavement marking.	3/15/2019	8/15/2019	$2.4M
102976	LOG-SR 117-0.000 to 5.832	Roadway Minor Rehab - resurfacing	6/25/2020	8/31/2020	$972K
109758	LOG-SR 366-6.030 to 9.830	Mill and fill the existing roadway with asphalt concrete (1.25”).	1/22/2024		$2.6M
107443	SHE-SR 117-0.000 to 4.820	Resurfacing existing routes in Logan County with asphalt concrete.	4/1/2025		$4.2M

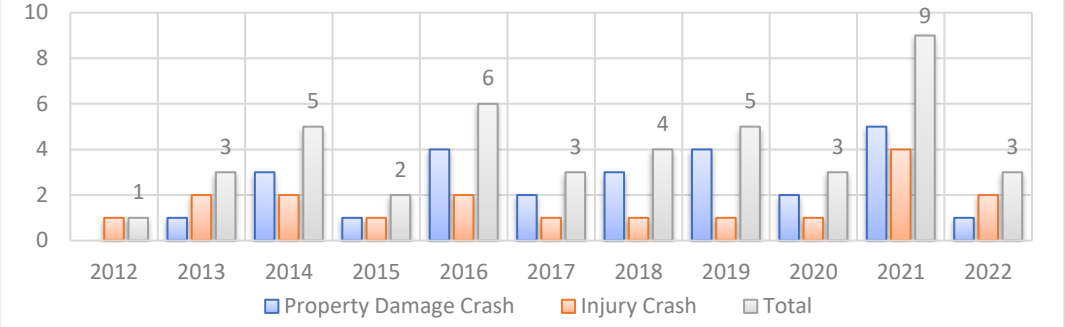
Warrant Analysis

- Evaluated using turning movement count from 5/11/2023.
- None of the traffic signal warrants are satisfied.
- Multi-way Stop Warrant was not satisfied.
- Analysis summary is attached.

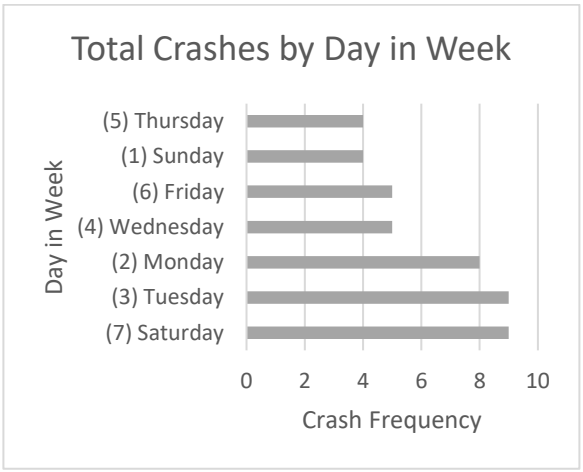
Crash Data and Analysis

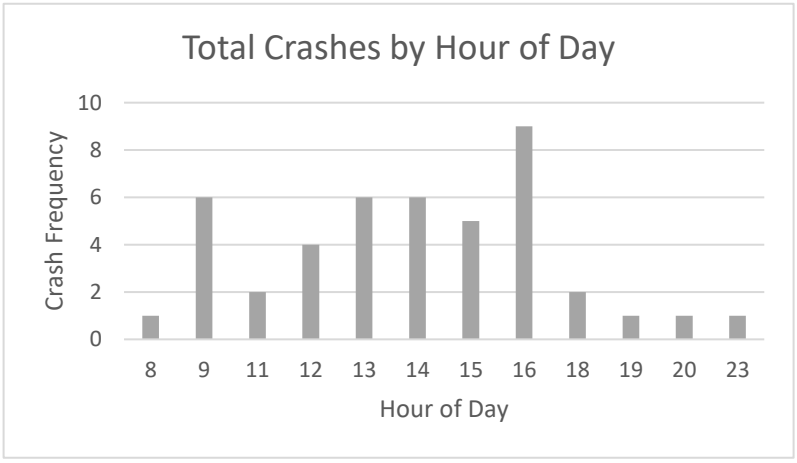
2012-2022 Crash Data (ran 4/5/2023) 44 Total Crashes

Crashes by Year



Crash Severity	Property Damage Only - 26 (59%), Injury - 18 (41%)
Crash Types	Rear End - 21 (48%), Angle - 9 (21%), Sideswipe (Passing) - 5 (11%)
Contributing Factor	Following too Close - 25 (57%), Failure to Yield - 8 (18%), Other - 4 (9%)
Action	Going Straight - 35 (80%), Overtaking/Passing - 4 (9%), Left Turn - 4 (9%)
Light Condition	Daylight - 41 (93%), Dawn/Dusk - 2 (5%), Dark/Not lighted - 1 (2%)
Road Condition	Dry - 35 (80%), Wet - 7 (16%), Ice - 1 (2%), Snow - 1 (2%)
Driver Alcohol/Drugs	One crash was alcohol related; none were indicated to be drug related.





Crash Diagram Analysis	● Of the 21 rear end crashes at this intersection, 20 occurred on the NB (SR 117) approach. ○ At least 15 of these rear-end crashes were related to a vehicle stopped or slowed to turn left onto SR 366. ○ Nearly half (9 of 20, 45%) resulted in injury. ● The four sideswipe-passing crashes and the two fixed object crashes on the NB approach were also related to or involved a NB vehicle turning left. ● Of the nine angle crashes, five were caused by a WB vehicle failing to yield.
Slip Ramp/Other Crashes *(Not included in data above or crash diagram)*	● One crash occurred on SR 117 near the merge with the slip ramp but as it involved a NB vehicle losing control in the curve just south of the merge and then going off the right side, does not seem related to the merge. No crashes were found to have occurred at the slip ramp diverge from SR 366 or on the slip ramp. ● Ten crashes, including two fatal crashes, occurred on SR 117 between the slip ramp merge and the main intersection with SR 366. ● Two additional nearby crashes were noted.
Crash Data Attachments	Crash Data, Crash Diagram, Crash Data Table

Operational Analysis

- HCS Analysis (reports attached)
  - Analyzed using raw turning movement count data collected 5/11/23 for the AM and PM peak hours.
  - Alternatives analyzed include Existing (TWSC, no geometric changes), TWSC with Left Turn Lanes on SR 117, and Roundabout (single lane). It was assumed that the roundabout alternative would be the only alternative that eliminates the slip ramp.
  - Results are summarized in the tables below.

SR 117 & SR 366/TR 100	2023 AM Existing (TWSC, slip ramp)					SR 117 & SR 366/TR 100	2023 PM Existing (TWSC, slip ramp)				
	LOS	Delay (sec/veh)	v/c	QSR	95th %-ile Queue		LOS	Delay (sec/veh)	v/c	QSR	95th %-ile Queue
EBT	C	15.0	0.06	-	5	EBT	E	38.8	0.39	-	43
EB Approach	**C**	**15.0**	**-**	**-**	**-**	**EB Approach**	**E**	**38.8**	**-**	**-**	**-**
WBT	B	14.8	0.09	-	8	WBT	D	32.6	0.24	-	23
WB Approach	**B**	**14.8**	**-**	**-**	**-**	**WB Approach**	**D**	**32.6**	**-**	**-**	**-**
NBL	A	8.1	0.02	-	3	NBL	A	8.6	0.06	-	5
NBT	A	0.2	-	-	-	NBT	A	0.7	-	-	-
NBR	A	0.2	-	-	-	NBR	A	0.7	-	-	-
NB Approach	**A**	**0.8**	**-**	**-**	**-**	**NB Approach**	**A**	**1.6**	**-**	**-**	**-**
SBL	A	7.7	0.00	-	0	SBL	A	8.4	0.00	-	0
SBT	A	0.00	-	-	-	SBT	A	0.0	-	-	-
SBR	A	0.0	-	-	-	SBR	A	0.0	-	-	-
SB Approach	**A**	**0.0**	**-**	**-**	**-**	**SB Approach**	**A**	**0.1**	**-**	**-**	**-**
Intersection	**-**	**-**	**-**	**-**	**-**	**Intersection**	**-**	**-**	**-**	**-**	**-**

SR 117 & SR 366/TR 100	2023 AM Proposed Left Turn Lanes					SR 117 & SR 366/TR 100	2023 PM Proposed Left Turn Lanes				
	LOS	Delay (sec/veh)	v/c	QSR	95th %-ile Queue		LOS	Delay (sec/veh)	v/c	QSR	95th %-ile Queue
EBT	B	15.0	0.06	-	5	EBT	E	37.3	0.38	-	43
EB Approach	**B**	**15.0**	**-**	**-**	**-**	**EB Approach**	**E**	**37.3**	**-**	**-**	**-**
WBT	B	14.8	0.09	-	8	WBT	D	31.6	0.23	-	20
WB Approach	**B**	**14.8**	**-**	**-**	**-**	**WB Approach**	**D**	**31.6**	**-**	**-**	**-**
NBL	A	8.1	0.02	-	3	NBL	A	8.6	0.06	-	5
NB Approach	**A**	**0.6**	**-**	**-**	**-**	**NB Approach**	**A**	**1.0**	**-**	**-**	**-**
SBL	A	7.7	0.00	-	0	SBL	A	8.4	0.00	-	0
SB Approach	**A**	**0.0**	**-**	**-**	**-**	**SB Approach**	**A**	**0.1**	**-**	**-**	**-**
Intersection	**-**	**-**	**-**	**-**	**-**	**Intersection**	**-**	**-**	**-**	**-**	**-**

SR 117 & SR 366/TR 100	2023 AM Proposed Roundabout					SR 117 & SR 366/TR 100	2023 PM Proposed Roundabout				
	LOS	Delay (sec/veh)	v/c	QSR	95th %-ile Queue		LOS	Delay (sec/veh)	v/c	QSR	95th %-ile Queue
EB Right	A	5.1	0.07	-	5	EB Right	A	6.2	0.16	-	15
EB Approach	**A**	**5.1**	**-**	**-**	**-**	**EB Approach**	**A**	**6.2**	**-**	**-**	**-**
WB Right	A	3.9	0.04	-	3	WB Right	A	8.9	0.06	-	5
WB Approach	**A**	**3.9**	**-**	**-**	**-**	**WB Approach**	**A**	**5.9**	**-**	**-**	**-**
NB Right	A	5.3	0.23	-	23	NB Right	A	8.3	0.48	-	68
NB Approach	**A**	**5.3**	**-**	**-**	**-**	**NB Approach**	**A**	**8.3**	**-**	**-**	**-**
SB Right	A	6.4	0.32	-	35	SB Right	A	7.9	0.44	-	58
SB Approach	**A**	**6.4**	**-**	**-**	**-**	**SB Approach**	**A**	**7.9**	**-**	**-**	**-**
Intersection	**A**	**5.7**	**-**	**-**	**-**	**Intersection**	**A**	**7.8**	**-**	**-**	**-**

Possible Causes

- Lack of awareness of intersection for thru traffic on SR 117.
- Excessive speed
- Driver Inattention

ECAT

- ECAT Analysis was completed for the following alternatives:
  - Installing LED signs.
  - Installing Left Turn Lanes on SR 117.
  - Install LED signs and Left Turn Lanes
  - Convert to a Roundabout.
- Note that some sign/striping changes were not evaluated with ECAT.
- Results are summarized in the table below; Report and Benefit/Cost analysis for each alternative is attached.

Scenario	Predicted Crashes	Expected Crashes	Safety Benefit	B/C Ratio
Existing (no changes)	3.2194	3.4266	-	-
LED signs	-	3.1082	$187,697	5.87
Left Turn Lanes	-	1.7818	$1,422,331	0.95
LED & LT Lanes		1.6162	$1,592,568	1.02
Roundabout	-	1.4054	$2,413,326	0.97

Potential Countermeasures

- Install stopbar on the WB (TR 100) approach.
  Pro: Low cost; can be implemented quickly.
  Con: Would not address crashes related to NB left turn movements.
- Install LED Intersection Warning Signs on SR 117 (Estimated Cost $32,000)
  Pro: Low cost; can be implemented quickly. Could draw driver's attention to intersection, thereby helping to prevent pattern of crashes associated with vehicles slowing or stopped to turn. Best B/C Ratio
  Con: Reduces less than one crash per year; does not address low levels of service for side-street traffic.
- Install left turn lanes on SR 117. (Estimated Cost $1,500,000)
  Pro: Eliminates about half of the expected crashes; addresses crash pattern associated with vehicles slowing or stopped to turn.
  Con: Estimated cost is slightly higher than estimated benefit; does not adequately address low levels of service for side-street traffic.
- Convert to All-Way Stop Control. (Estimated Cost $32,000)
  Not a viable option as warrants were not satisfied.
- Install a Traffic Signal. (Estimated Cost $400,000)
  Not a viable option as warrants were not satisfied; this alternative would also be expected to increase crash frequencies.
- Convert to a roundabout. (Estimated Cost $2,500,000)
  Pro: Greatest expected crash reduction and best overall Level of Service; addresses left turn crash pattern.
  Con: High initial cost; negative benefit/cost ratio; would require additional right-of-way (limited right-of-way available). Increases delay and queues on SR 117.

Recommendations

Short Term

- Install stopbar on the Westbound (TR 100) approach.

Long Term

- Complete preliminary engineering to further consider geometric alternatives.

Hoy, Mary

From: Cherie Carmen <cheriecarmen349@gmail.com>
Sent: Friday, March 31, 2023 1:54 PM
To: Hoy, Mary
Subject: Asking for a Stoplight to be put at the intersection of St. RT.117 AND Co. Rd. 366.

Categories: Safety

Attn: Mary Hoy

I would like to put a request in for an investigation into the intersection of St.Rt. 117 and Co. Rd. 366 outside of Huntsville, Ohio.

I have a son, Sean Somers Carmen, that was killed in an accident at this intersection on Dec. 1, 2004. He was driving a Honda Civic. He was hit by a semi traveling on 117 towards Huntsville, Ohio. On coming traffic at that intersection headed toward Lima, Ohio, yielded a construction van with an attached trailer on back. When the semi hit my son it forced him into the oncoming traffic from the other direction. The construction trailer and the semi sandwiched his Honda vehicle. Sean was pronounced dead at the scene. He was only 17 and a student at Indian Lake High School at the time. It was a terrible loss for our family and one my husband could never move on from. He went to the scene and had seen it all first hand. It was a horrible tragedy for all the community.

This St. Rt. 117 has a high volume of semi traffic and other large vehicles use it well such as farm equipment being driven or hauled. The stone quarry is just down a ways from this intersection as well and the use this state route to deliver stone and such across the county as well.

I personally have driven up to this intersection on several occasions to find traffic blocked in all directions due to accidents that happen at this particular place. When there is an accident at this intersection, traffic is usually blocked both ways for several hours. This will and does back traffic up for miles as well. My son has not been the only fatality at this location.

I don't know exactly what or where to start in getting something done here. Because I have a personal experience in the loss of my child at this intersection, I am under my own conviction to bring it to others attention so no one else will lose someone so dear as I did. It has too much high volume of larger trucks and machinery not to have some sort of implementation of more safety features to ensure all the public that uses it.

My name is Cheryl (Cherie) Carmen. I am Sean's mother. I hold this issue probably more sacred because of the young son I lost here. But also, because I lost my daughter, Amanda Taylor Carmen, as well to a drunk driver on St. RT. 68 back in 2018. Logan County roadways have claimed the lives of two of my youngest children. Now my daughter has 3 children who will never see their dear mother again and that breaks my heart.

Please understand, I have an obligation to do whatever I can to make sure no other parent goes through what I have in losing my children. I am begging you for help in this matter. My personal information will be listed at the bottom of this page. Please feel free to contact me. Thank you sincerely for your time and attention to this request for action. I look forward to hearing from you.

Sincerely,
Cherie Carmen

Cherie Carmen
P.O. Box 772
Lakeview, Ohio 43331
Phone: 937-710-2944
Email: cheriecarmen349@gmail.com

Ohio Department of Transportation - Safety
1980 West Broad Street
Mail Stop 5160
Columbus, Ohio, United States 43223
+16147528099 Mary.Hoy@dot.state.oh.us
Office of Traffic Engineering

Count Name: LOG-117-4.561
Site Code:
Start Date: 05/11/2023

Turning Movement Data

Start Time	Southbound Approach Southbound					Westbound Approach Westbound					Northbound Approach Northbound					Eastbound Approach Eastbound					
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
6:30 AM	0	52	0	0	52	0	2	3	0	5	1	40	1	0	42	0	1	4	0	5	104
6:45 AM	1	63	0	0	64	0	2	1	0	3	1	37	2	0	40	0	2	3	0	5	112
Hourly Total	1	115	0	0	116	0	4	4	0	8	2	77	3	0	82	0	3	7	0	10	216
7:00 AM	2	75	0	0	77	0	6	4	0	10	3	48	2	0	53	0	1	2	0	3	143
7:15 AM	6	68	0	0	74	0	2	4	0	6	0	58	4	0	62	1	3	7	0	11	153
7:30 AM	2	90	0	0	92	3	3	4	0	10	4	52	6	0	62	1	3	1	0	5	169
7:45 AM	3	76	0	0	79	0	4	5	0	9	2	52	6	0	60	0	1	2	0	3	151
Hourly Total	13	309	0	0	322	3	15	17	0	35	9	210	18	0	237	2	8	12	0	22	616
8:00 AM	2	76	1	0	79	1	2	2	0	5	5	44	4	0	53	1	2	2	0	5	142
8:15 AM	3	64	0	0	67	1	1	2	0	4	2	59	5	0	66	0	0	3	0	3	140
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	5	140	1	0	146	2	3	4	0	9	7	103	9	0	119	1	2	5	0	8	282
10:00 AM	8	76	0	0	84	0	0	3	0	3	5	74	6	0	85	0	4	6	0	10	182
10:15 AM	8	62	0	0	70	0	1	0	0	1	1	65	7	0	73	0	4	5	0	9	153
10:30 AM	9	60	0	0	69	1	2	0	0	3	5	63	9	0	77	0	3	6	0	9	158
10:45 AM	6	69	0	0	75	0	2	2	0	4	2	65	9	0	76	0	4	4	0	8	163
Hourly Total	31	267	0	0	298	1	5	5	0	11	13	267	31	0	311	0	15	21	0	36	656
11:00 AM	5	59	0	0	64	1	4	3	0	8	1	73	14	0	88	0	0	5	0	5	165
11:15 AM	6	82	0	0	88	1	4	3	0	8	2	72	10	0	84	1	1	2	0	4	184
11:30 AM	4	57	1	0	62	3	2	1	0	6	0	61	9	0	70	1	3	3	0	7	145
11:45 AM	16	72	0	0	88	0	4	1	0	5	1	66	7	0	74	0	1	2	0	3	170
Hourly Total	31	270	1	0	302	5	14	8	0	27	4	272	40	0	316	2	5	12	0	19	664
12:00 PM	5	78	0	0	83	0	2	1	0	3	1	90	14	0	105	0	2	6	0	8	199
12:15 PM	4	82	0	0	86	1	3	2	0	6	3	79	15	0	97	0	2	5	0	7	196
12:30 PM	12	75	1	0	88	0	5	1	0	6	0	62	9	0	71	0	4	8	0	12	177
12:45 PM	8	66	0	0	74	0	1	1	0	2	2	89	13	0	104	0	3	10	0	13	193
Hourly Total	29	301	1	0	331	1	11	5	0	17	6	320	51	0	377	0	11	29	0	40	765
1:00 PM	4	75	0	0	79	1	3	0	0	4	4	83	12	0	99	0	4	3	0	7	189
1:15 PM	6	75	0	0	81	0	2	3	0	5	0	72	10	0	82	1	3	6	0	10	178
1:30 PM	7	82	0	0	89	0	4	2	0	6	7	76	7	0	90	1	2	6	0	9	194
1:45 PM	8	96	0	0	104	0	6	4	0	10	5	77	11	0	93	2	1	4	0	7	214
Hourly Total	25	328	0	0	353	1	15	9	0	25	16	308	40	0	364	4	10	19	0	33	775
2:00 PM	6	59	1	0	66	1	2	3	0	6	1	73	5	0	79	1	3	9	0	13	164
2:15 PM	10	87	0	0	97	0	4	0	0	4	4	77	12	0	93	1	2	6	0	9	203
2:30 PM	8	79	0	0	87	0	2	4	0	6	4	84	6	0	94	0	2	2	0	4	191

2:45 PM	3	83	0	0	86	0	7	2	0	9	3	88	14	0	105	1	7	3	0	11	211
Hourly Total	27	308	1	0	336	1	15	9	0	25	12	322	37	0	371	3	14	20	0	37	769
3:00 PM	7	92	0	0	99	0	3	5	0	8	4	90	14	0	108	1	7	4	0	12	227
3:15 PM	4	83	0	0	87	1	2	7	0	10	5	94	12	0	111	2	9	3	0	14	222
3:30 PM	8	85	0	0	93	0	0	3	0	3	2	111	6	0	119	2	4	5	0	11	226
3:45 PM	8	104	1	0	113	1	3	1	0	5	5	104	12	0	121	1	4	4	0	9	248
Hourly Total	27	364	1	0	392	2	8	16	0	26	16	399	44	0	459	6	24	16	0	46	923
4:00 PM	4	78	2	0	84	1	7	6	0	14	3	80	14	0	97	1	10	4	0	15	210
4:15 PM	2	100	0	0	102	0	7	2	0	9	5	99	13	0	117	0	14	5	0	19	247
4:30 PM	6	114	0	0	120	0	5	1	0	6	5	130	17	0	152	1	7	7	0	15	293
4:45 PM	4	80	2	0	86	1	4	2	0	7	5	93	23	0	121	0	7	2	0	9	223
Hourly Total	16	372	4	0	392	2	23	11	0	36	18	402	67	0	487	2	38	18	0	58	973
5:00 PM	5	70	1	0	76	1	1	3	0	5	3	91	9	0	103	2	4	2	0	8	192
5:15 PM	4	83	0	0	87	0	0	3	0	3	7	93	19	0	119	0	5	3	0	8	217
5:30 PM	6	64	1	0	71	0	4	4	0	8	1	95	18	0	114	0	3	3	0	6	199
5:45 PM	7	63	0	0	70	0	4	1	0	5	3	72	12	0	87	1	7	2	0	10	172
Hourly Total	22	280	2	0	304	1	9	11	0	21	14	351	58	0	423	3	19	10	0	32	780
Grand Total	227	3054	11	0	3292	19	122	99	0	240	117	3031	398	0	3546	23	149	169	0	341	7419
Approach %	6.9	92.8	0.3	0.0	-	7.9	50.8	41.3	0.0	-	3.3	85.5	11.2	0.0	-	6.7	43.7	49.6	0.0	-	-
Total %	3.1	41.2	0.1	0.0	44.4	0.3	1.6	1.3	0.0	3.2	1.6	40.9	5.4	0.0	47.8	0.3	2.0	2.3	0.0	4.6	-
Lights	192	2643	10	0	2845	16	118	98	0	232	115	2585	393	0	3093	23	147	130	0	300	6470
% Lights	84.6	86.5	90.9	-	86.4	84.2	96.7	99.0	-	96.7	98.3	85.3	98.7	-	87.2	100.0	98.7	76.9	-	88.0	87.2
Buses	0	14	0	0	14	0	1	0	0	1	0	11	0	0	11	0	1	1	0	2	28
% Buses	0.0	0.5	0.0	-	0.4	0.0	0.8	0.0	-	0.4	0.0	0.4	0.0	-	0.3	0.0	0.7	0.6	-	0.6	0.4
Single-Unit Trucks	29	181	1	0	211	3	3	0	0	6	2	176	5	0	183	0	1	30	0	31	431
% Single-Unit Trucks	12.8	5.9	9.1	-	6.4	15.8	2.5	0.0	-	2.5	1.7	5.8	1.3	-	5.2	0.0	0.7	17.8	-	9.1	5.8
Articulated Trucks	6	216	0	0	222	0	0	1	0	1	0	259	0	0	259	0	0	8	0	8	490
% Articulated Trucks	2.6	7.1	0.0	-	6.7	0.0	0.0	1.0	-	0.4	0.0	8.5	0.0	-	7.3	0.0	0.0	4.7	-	2.3	6.6
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0

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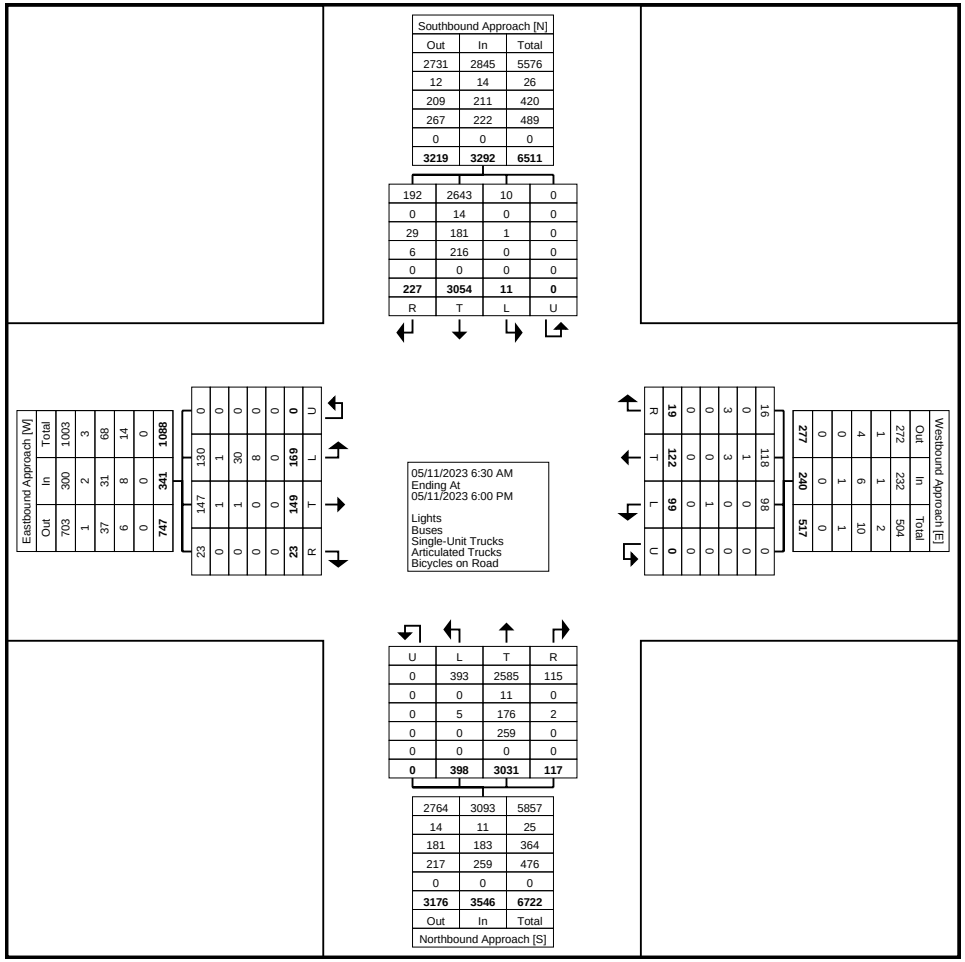
Count Name: LOG-117-4.561
Site Code:
Start Date: 05/11/2023



Turning Movement Data Plot

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Office of Traffic Engineering

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Site Code:
Start Date: 05/11/2023

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Southbound Approach					Westbound Approach					Northbound Approach					Eastbound Approach					
	Southbound					Westbound					Northbound					Eastbound					
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
7:00 AM	2	75	0	0	77	0	6	4	0	10	3	48	2	0	53	0	1	2	0	3	143
7:15 AM	6	68	0	0	74	0	2	4	0	6	0	58	4	0	62	1	3	7	0	11	153
7:30 AM	2	90	0	0	92	3	3	4	0	10	4	52	6	0	62	1	3	1	0	5	169
7:45 AM	3	76	0	0	79	0	4	5	0	9	2	52	6	0	60	0	1	2	0	3	151
Total	13	309	0	0	322	3	15	17	0	35	9	210	18	0	237	2	8	12	0	22	616
Approach %	4.0	96.0	0.0	0.0	-	8.6	42.9	48.6	0.0	-	3.8	88.6	7.6	0.0	-	9.1	36.4	54.5	0.0	-	-
Total %	2.1	50.2	0.0	0.0	52.3	0.5	2.4	2.8	0.0	5.7	1.5	34.1	2.9	0.0	38.5	0.3	1.3	1.9	0.0	3.6	-
PHF	0.542	0.858	0.000	0.000	0.875	0.250	0.625	0.850	0.000	0.875	0.563	0.905	0.750	0.000	0.956	0.500	0.667	0.429	0.000	0.500	0.911
Lights	11	255	0	0	266	3	15	17	0	35	9	167	17	0	193	2	7	11	0	20	514
% Lights	84.6	82.5	-	-	82.6	100.0	100.0	100.0	-	100.0	100.0	79.5	94.4	-	81.4	100.0	87.5	91.7	-	90.9	83.4
Buses	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Buses	0.0	0.6	-	-	0.6	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.3
Single-Unit Trucks	2	26	0	0	28	0	0	0	0	0	0	19	1	0	20	0	1	1	0	2	50
% Single-Unit Trucks	15.4	8.4	-	-	8.7	0.0	0.0	0.0	-	0.0	0.0	9.0	5.6	-	8.4	0.0	12.5	8.3	-	9.1	8.1
Articulated Trucks	0	26	0	0	26	0	0	0	0	0	0	24	0	0	24	0	0	0	0	0	50
% Articulated Trucks	0.0	8.4	-	-	8.1	0.0	0.0	0.0	-	0.0	0.0	11.4	0.0	-	10.1	0.0	0.0	0.0	-	0.0	8.1
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0

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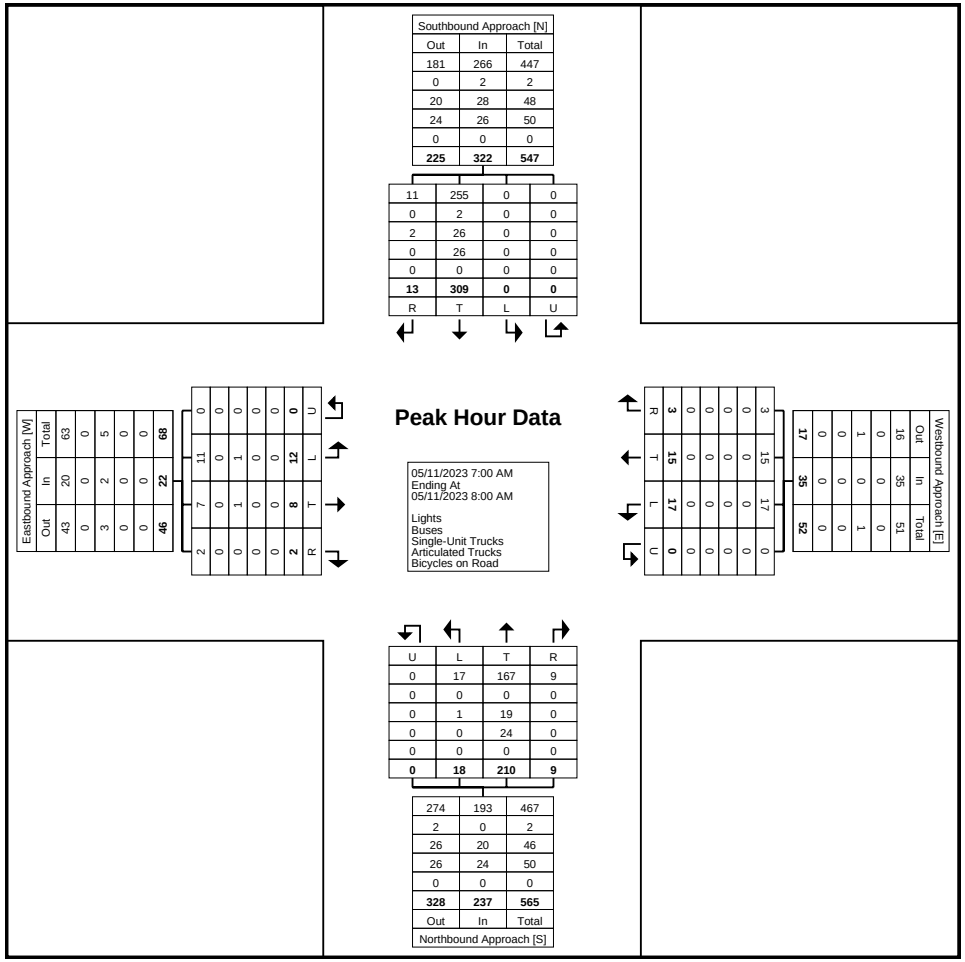

Turning Movement Peak Hour Data Plot (7:00 AM)

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Site Code:
Start Date: 05/11/2023

Turning Movement Peak Hour Data (10:30 AM)

Start Time	Southbound Approach					Westbound Approach					Northbound Approach					Eastbound Approach					
	Southbound					Westbound					Northbound					Eastbound					
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
10:30 AM	9	60	0	0	69	1	2	0	0	3	5	63	9	0	77	0	3	6	0	9	158
10:45 AM	6	69	0	0	75	0	2	2	0	4	2	65	9	0	76	0	4	4	0	8	163
11:00 AM	5	59	0	0	64	1	4	3	0	8	1	73	14	0	88	0	0	5	0	5	165
11:15 AM	6	82	0	0	88	1	4	3	0	8	2	72	10	0	84	1	1	2	0	4	184
Total	26	270	0	0	296	3	12	8	0	23	10	273	42	0	325	1	8	17	0	26	670
Approach %	8.8	91.2	0.0	0.0	-	13.0	52.2	34.8	0.0	-	3.1	84.0	12.9	0.0	-	3.8	30.8	65.4	0.0	-	-
Total %	3.9	40.3	0.0	0.0	44.2	0.4	1.8	1.2	0.0	3.4	1.5	40.7	6.3	0.0	48.5	0.1	1.2	2.5	0.0	3.9	-
PHF	0.722	0.823	0.000	0.000	0.841	0.750	0.750	0.667	0.000	0.719	0.500	0.935	0.750	0.000	0.923	0.250	0.500	0.708	0.000	0.722	0.910
Lights	18	226	0	0	244	3	10	8	0	21	9	220	42	0	271	1	8	9	0	18	554
% Lights	69.2	83.7	-	-	82.4	100.0	83.3	100.0	-	91.3	90.0	80.6	100.0	-	83.4	100.0	100.0	52.9	-	69.2	82.7
Buses	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Buses	0.0	0.4	-	-	0.3	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.1
Single-Unit Trucks	6	23	0	0	29	0	2	0	0	2	1	19	0	0	20	0	0	5	0	5	56
% Single-Unit Trucks	23.1	8.5	-	-	9.8	0.0	16.7	0.0	-	8.7	10.0	7.0	0.0	-	6.2	0.0	0.0	29.4	-	19.2	8.4
Articulated Trucks	2	20	0	0	22	0	0	0	0	0	0	34	0	0	34	0	0	3	0	3	59
% Articulated Trucks	7.7	7.4	-	-	7.4	0.0	0.0	0.0	-	0.0	0.0	12.5	0.0	-	10.5	0.0	0.0	17.6	-	11.5	8.8
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0

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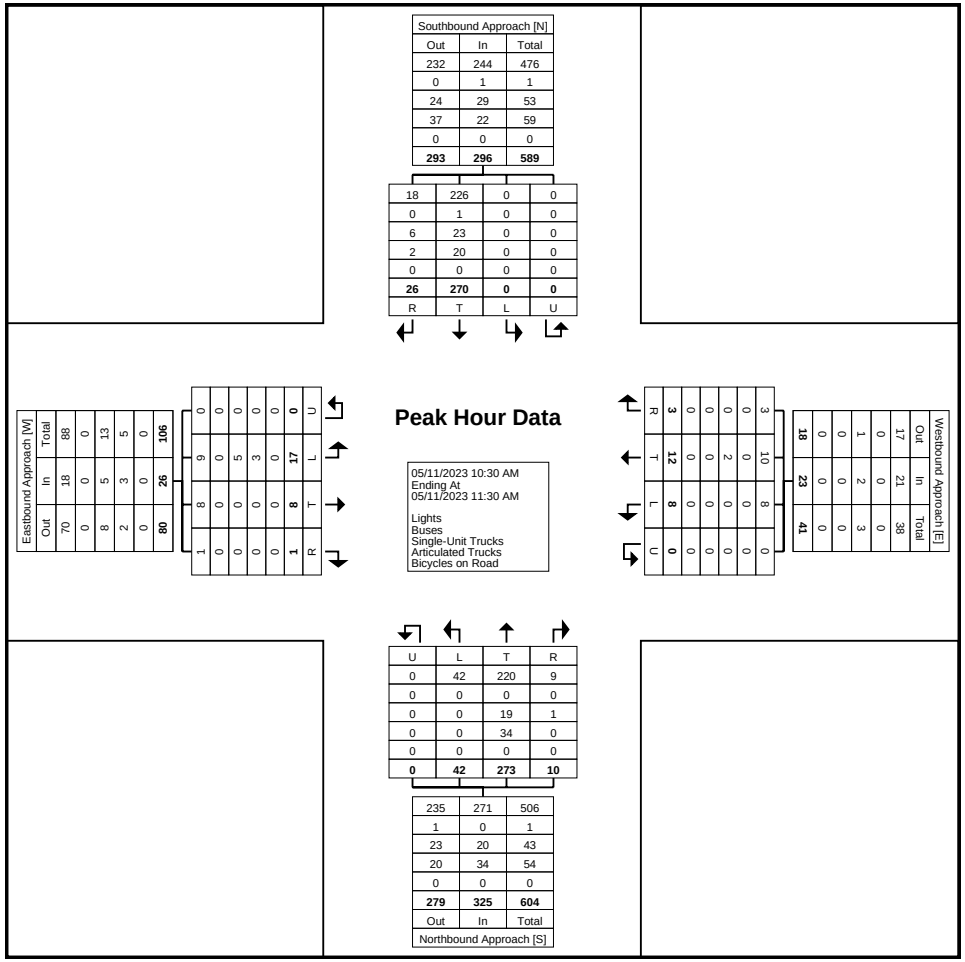

Turning Movement Peak Hour Data Plot (10:30 AM)

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Office of Traffic Engineering

Count Name: LOG-117-4.561
Site Code:
Start Date: 05/11/2023

Turning Movement Peak Hour Data (3:45 PM)

Start Time	Southbound Approach Southbound					Westbound Approach Westbound					Northbound Approach Northbound					Eastbound Approach Eastbound					
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
3:45 PM	8	104	1	0	113	1	3	1	0	5	5	104	12	0	121	1	4	4	0	9	248
4:00 PM	4	78	2	0	84	1	7	6	0	14	3	80	14	0	97	1	10	4	0	15	210
4:15 PM	2	100	0	0	102	0	7	2	0	9	5	99	13	0	117	0	14	5	0	19	247
4:30 PM	6	114	0	0	120	0	5	1	0	6	5	130	17	0	152	1	7	7	0	15	293
Total	20	396	3	0	419	2	22	10	0	34	18	413	56	0	487	3	35	20	0	58	998
Approach %	4.8	94.5	0.7	0.0	-	5.9	64.7	29.4	0.0	-	3.7	84.8	11.5	0.0	-	5.2	60.3	34.5	0.0	-	-
Total %	2.0	39.7	0.3	0.0	42.0	0.2	2.2	1.0	0.0	3.4	1.8	41.4	5.6	0.0	48.8	0.3	3.5	2.0	0.0	5.8	-
PHF	0.625	0.868	0.375	0.000	0.873	0.500	0.786	0.417	0.000	0.607	0.900	0.794	0.824	0.000	0.801	0.750	0.625	0.714	0.000	0.763	0.852
Lights	17	358	3	0	378	1	21	10	0	32	18	373	55	0	446	3	35	18	0	56	912
% Lights	85.0	90.4	100.0	-	90.2	50.0	95.5	100.0	-	94.1	100.0	90.3	98.2	-	91.6	100.0	100.0	90.0	-	96.6	91.4
Buses	0	3	0	0	3	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	6
% Buses	0.0	0.8	0.0	-	0.7	0.0	4.5	0.0	-	2.9	0.0	0.5	0.0	-	0.4	0.0	0.0	0.0	-	0.0	0.6
Single-Unit Trucks	2	22	0	0	24	1	0	0	0	1	0	14	1	0	15	0	0	2	0	2	42
% Single-Unit Trucks	10.0	5.6	0.0	-	5.7	50.0	0.0	0.0	-	2.9	0.0	3.4	1.8	-	3.1	0.0	0.0	10.0	-	3.4	4.2
Articulated Trucks	1	13	0	0	14	0	0	0	0	0	0	24	0	0	24	0	0	0	0	0	38
% Articulated Trucks	5.0	3.3	0.0	-	3.3	0.0	0.0	0.0	-	0.0	0.0	5.8	0.0	-	4.9	0.0	0.0	0.0	-	0.0	3.8
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0

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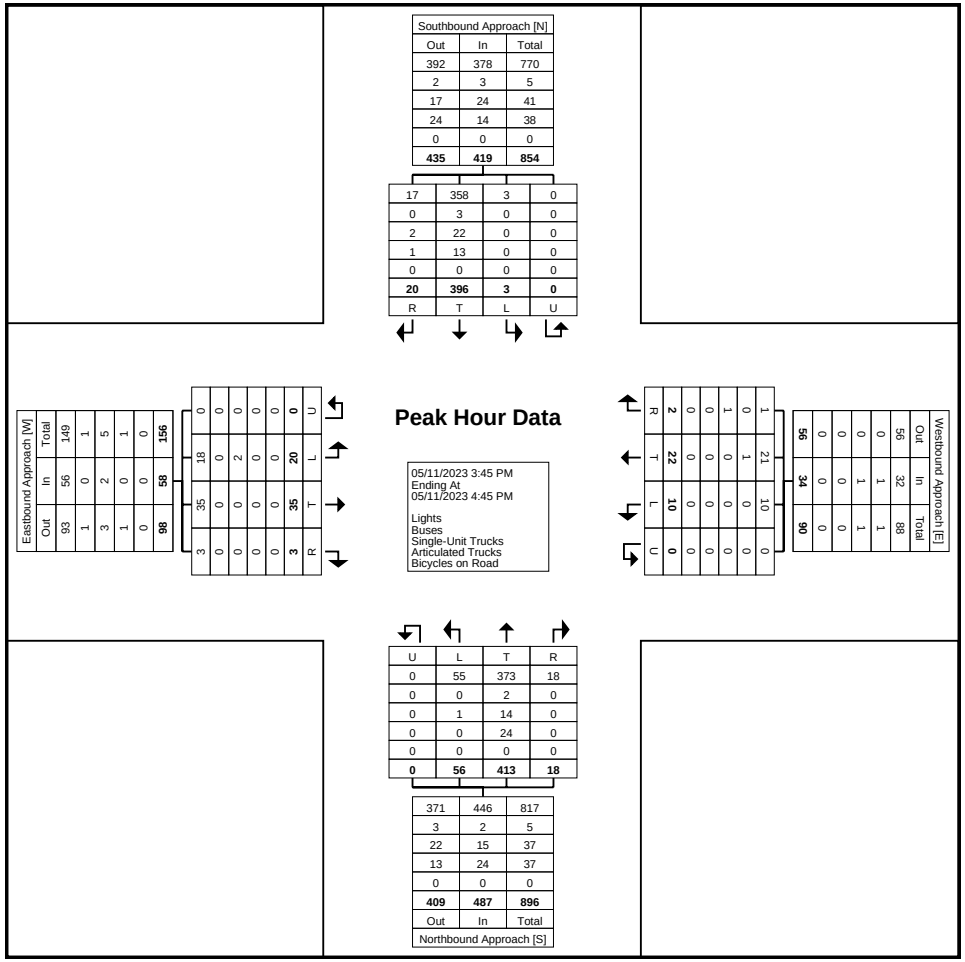


Turning Movement Peak Hour Data Plot (3:45 PM)

LOG-US 117 and SR 366

Slip Ramp Volumes from video recorded 5/11/2023
Counted by Eric Schmidt

Time:	2 axle:	2 or more axle:	Total:	
6:30 - 6:45	4	0	4	
6:45 - 7:00	6	0	6	
7:00 - 7:15	7	0	7	
7:15 - 7:30	5	3	8	AM Peak Hour Total: 28
7:30 - 7:45	6	0	6	
7:45 - 8:00	6	1	7	
8:00 - 8:15	9	0	9	
8:15 - 8:30	4	1	5	
3:00 - 3:15	4	1	5	
3:15 - 3:30	7	1	8	
3:30 - 3:45	7	1	8	
3:45 - 4:00	14	0	14	
4:00 - 4:15	13	0	13	PM Peak Hour Total: 46
4:15 - 4:30	9	0	9	
4:30 - 4:45	9	1	10	
4:45 - 5:00	9	0	9	
5:00 - 5:15	7	1	8	
5:15 - 5:30	12	0	12	
5:30 - 5:45	3	0	3	
5:45 - 6:00	7	0	7	

STUDY AND ANALYSIS INFORMATION

Municipality:		**Traffic Volumes Obtained By:**	ODOT District 7
County:	Logan	**Analysis Date:**	5/18/2023
ODOT Engineering District:	7	**Agency/ Company Name Performing Warrant Analysis:**	ODOT District 7
Google map link:	Map		

Analysis Information

Data Collection Date: 5/11/2023

Day of the Week: Thursday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Existing Traffic Signal at intersection: No

Total Number of Approaches at Intersection: 4

Major Street Information

Major Street Name and Route Number: SR 117

Major Street Approach Direction: N-Bound / S-Bound

Number of Thru Lanes on Each Major Street Approach: 1 **LANE(S)**

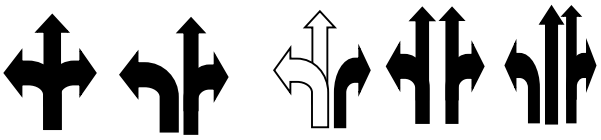
Speed Limit or 85th Percentile Speed on the Major Street*: 55 **MPH**

*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number: SR 366/TR 100

Minor Street Approach Configuration: 1 E-Bound / 1 W-Bound



1 2 3 4 5

Number of Thru Lanes on Each Minor Street Approach: 1 **LANE(S)**

Apply Right Turn Lane Reduction*: Yes

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Satisfied?	Notes and Comments:	
Warrant 1, Eight-Hour Vehicular Volume	Yes	**No**		
Warrant 2, Four-Hour Vehicular Volume	Yes	**No**		
Warrant 3, Peak Hour	Yes	**No**	Signals installed under Warrant 3 should be traffic actuated.	**Peak Hour** 3:45 PM 4:45 PM
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)				
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD.	**Peak Hour** 3:45 PM 4:45 PM
Warrant 5, School Crossing	No		N/A	
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 7, Crash Experience	Yes	**No**	If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.	
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9	
Multi-Way Stop Warrant	Yes	**No**	May be used as an interim measure if traffic signal warrants are satisfied.	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:

1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The **Modeling and Forecasting Section** should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. **Please fill inputs on PHB Score Sheet and submit to ODOT.**

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion:

Notes:

LOG-SR 117 & SR 366 Intersection

2012-2022 Crash Data, run 4/5/2023

	Number
Total	**44**

CRASH_SEVERITY	Number	%
Injury Crash	**18**	40.9%
Property Damage Crash	**26**	59.1%
Grand Total	**44**	**100.0%**

TRAFFIC_CRASH_YEAR	Number	%
2012	**1**	2.3%
2013	**3**	6.8%
2014	**5**	11.4%
2015	**2**	4.5%
2016	**6**	13.6%
2017	**3**	6.8%
2018	**4**	9.1%
2019	**5**	11.4%
2020	**3**	6.8%
2021	**9**	20.5%
2022	**3**	6.8%
Grand Total	**44**	**100.0%**

DAY_OF_WEEK	Number	%
(7) Saturday	**9**	20.5%
(3) Tuesday	**9**	20.5%
(2) Monday	**8**	18.2%
(4) Wednesday	**5**	11.4%
(6) Friday	**5**	11.4%
(1) Sunday	**4**	9.1%
(5) Thursday	**4**	9.1%
Grand Total	**44**	**100.0%**

HOUR_OF_DAY	Number	%
8	**1**	2.3%
9	**6**	13.6%
11	**2**	4.5%
12	**4**	9.1%
13	**6**	13.6%
14	**6**	13.6%
15	**5**	11.4%
16	**9**	20.5%
18	**2**	4.5%
19	**1**	2.3%
20	**1**	2.3%
23	**1**	2.3%
Grand Total	**44**	**100.0%**

TYPE_OF_CRASH	Number	%
Rear End	**21**	47.7%
Angle	**9**	20.5%
Sideswipe - Passing	**5**	11.4%
Fixed Object	**5**	11.4%
Left Turn	**2**	4.5%
Head On	**1**	2.3%
Right Turn	**1**	2.3%
Grand Total	**44**	**100.0%**

LOG-SR 117 & SR 366 Intersection

WEATHER_CONDITION	Number	%
Clear	33	75.0%
Cloudy	7	15.9%
Rain	3	6.8%
Fog, Smog, Smoke	1	2.3%
Grand Total	**44**	**100.0%**

ROAD_CONDITION	Number	%
Dry	35	79.5%
Wet	7	15.9%
Ice	1	2.3%
Snow	1	2.3%
Grand Total	**44**	**100.0%**

LIGHT_CONDITION	Number	%
Daylight	41	93.2%
Dawn/Dusk	2	4.5%
Dark - Roadway Not Lighted	1	2.3%
Grand Total	**44**	**100.0%**

NUMBER_OF_VEHICLES	Number	%
1	5	11.4%
2	35	79.5%
3	4	9.1%
Grand Total	**44**	**100.0%**

LOCATION	Number	%
Four-Way Intersection	37	84.1%
Not An Intersection	5	11.4%
Data Not Valid or Not Provided	1	2.3%
T-Intersection	1	2.3%
Grand Total	**44**	**100.0%**

CRASH_MONTH_NBR	Number	%
1	3	6.8%
2	1	2.3%
3	6	13.6%
4	4	9.1%
6	5	11.4%
7	9	20.5%
8	4	9.1%
9	3	6.8%
10	2	4.5%
11	3	6.8%
12	4	9.1%
Grand Total	**44**	**100.0%**

ROAD_CONTOUR	Number	%
Straight Level	32	72.7%
Straight Grade	12	27.3%
Grand Total	**44**	**100.0%**

SPECIAL_AREA	Number	%
(blank)	44	100.0%
Grand Total	**44**	**100.0%**

ANIMAL_TYPE	Number	%
(blank)	44	100.0%
Grand Total	**44**	**100.0%**

LOG-SR 117 & SR 366 Intersection

ACTION1	Number	%
Straight Ahead	**35**	79.5%
Overtaking/Passing	**4**	9.1%
Making Left Turn	**4**	9.1%
Making Right Turn	**1**	2.3%
Grand Total	**44**	**100.0%**

CONTRIBUTING_FACTOR1	Number	%
Following Too Closely/ACDA	**25**	56.8%
Failure to Yield	**8**	18.2%
Other Improper Action	**4**	9.1%
Improper Passing	**3**	6.8%
None	**3**	6.8%
Improper Lane Change	**1**	2.3%
Grand Total	**44**	**100.0%**

	Number	%
Total	**44**	**100.0%**

TRAFFIC_CONTROL1	Number	%
No Control	**34**	77.3%
Stop Sign	**10**	22.7%
Grand Total	**44**	**100.0%**

DRIVER_ALCOHOL1	Number	%
No	**43**	97.7%
Yes	**1**	2.3%
Grand Total	**44**	**100.0%**

DRIVER_DRUGS1	Number	%
No	**44**	100.0%
Grand Total	**44**	**100.0%**

LOG-SR 117 & SR 366 Intersection

DIRECTION_FROM1	Number	%
South	**28**	63.6%
East	**6**	13.6%
North	**5**	11.4%
West	**3**	6.8%
Southeast	**2**	4.5%
Grand Total	**44**	**100.0%**

DIRECTION_TO1	Number	%
North	**28**	63.6%
South	**7**	15.9%
West	**5**	11.4%
East	**2**	4.5%
Northwest	**1**	2.3%
Unknown	**1**	2.3%
Grand Total	**44**	**100.0%**

POSTED_SPEED1	Number	%
55	**43**	97.7%
0	**1**	2.3%
Grand Total	**44**	**100.0%**

ESTIMATED_SPEED1	Number	%
55	**13**	29.5%
50	**10**	22.7%
5	**5**	11.4%
15	**4**	9.1%
45	**3**	6.8%
20	**2**	4.5%
40	**2**	4.5%
30	**2**	4.5%
0	**1**	2.3%
60	**1**	2.3%
10	**1**	2.3%
Grand Total	**44**	**100.0%**

VEHICLE_TYPE1	Number	%
Passenger Car	**22**	50.0%
Sport Utility Vehicle	**7**	15.9%
Pick up	**7**	15.9%
Passenger Van (minivan)	**5**	11.4%
Semi-Tractor	**1**	2.3%
Bus (16+ Passengers)	**1**	2.3%
Motorcycle 2 Wheeled	**1**	2.3%
Grand Total	**44**	**100.0%**

VEHICLE_TYPE2	Number	%
Passenger Car	**20**	45.5%
Sport Utility Vehicle	**8**	18.2%
Pick up	**6**	13.6%
	5	11.4%
Passenger Van (minivan)	**2**	4.5%
Semi-Tractor	**2**	4.5%
Cargo Van	**1**	2.3%
Grand Total	**44**	**100.0%**

LOG-SR 117 & SR 366 Intersection

ACTION2	Number	%
Slowing or Stopped In Traffic	16	36.4%
Straight Ahead	14	31.8%
Making Left Turn	7	15.9%
	5	11.4%
Entering Traffic Lane	1	2.3%
Making Right Turn	1	2.3%
Grand Total	**44**	**100.0%**

CONTRIBUTING_FACTOR2	Number	%
None	39	88.6%
	5	11.4%
Grand Total	**44**	**100.0%**

DIRECTION_FROM2	Number	%
South	27	61.4%
North	7	15.9%
	5	11.4%
West	4	9.1%
Southeast	1	2.3%
Grand Total	**44**	**100.0%**

DIRECTION_TO2	Number	%
North	19	43.2%
West	7	15.9%
South	7	15.9%
	5	11.4%
East	5	11.4%
Southwest	1	2.3%
Grand Total	**44**	**100.0%**

DRIVER_ALCOHOL2	Number	%
(blank)	44	100.0%
Grand Total	**44**	**100.0%**

DRIVER_DRUGS2	Number	%
(blank)	44	100.0%
Grand Total	**44**	**100.0%**

LOG-SR 117 & SR 366 Intersection

SEVERITY	CRASH_SEVERITY	
TRAFFIC_CRASH_YEAR	Property Damage Crash	Injury Crash
2012	0	1
2013	1	2
2014	3	2
2015	1	1
2016	4	2
2017	2	1
2018	3	1
2019	4	1
2020	2	1
2021	5	4
2022	1	2
Grand Total	**26**	**18**

TRAFFIC_CRASH_YEAR	Fatalities	Incapacitating Injuries
2012	0	0
2013	0	0
2014	0	2
2015	0	0
2016	0	0
2017	0	0
2018	0	0
2019	0	0
2020	0	0
2021	0	0
2022	0	0
Grand Total	**0**	**2**

TRAFFIC_CRASH_YEAR	INJ_TYPE2_SERIOUS_VISIBLE	INJ_TYPE3_MINOR_VISIBLE	INJ_TYPE4_NO_VISIBLE
2012	0	1	0
2013	0	2	3
2014	2	2	0
2015	0	0	1
2016	0	4	16
2017	0	1	0
2018	0	1	0
2019	0	0	1
2020	0	0	1
2021	0	8	1
2022	0	2	2
Grand Total	**2**	**21**	**25**

COLLISION DIAGRAM

LOG-SR 177 & SR 366 Intersection

2012-2022 Crash Data, run 4/5/203

Legend:

Symbols	Types of Collisions
Other	Rear End
Backing Vehicle	Head On
Pedestrian	Side-Swipe Passing
Parked Vehicle	Side-Swipe Meeting
Fixed Object	Out-of-Control
Fatal Crash	Angle
Injury Crash	Angle
Signal	Left Turn
Street — Street Name	Right Turn
STOP — Stop Sign	Right Turn
Animal	

Same location as #16:

37 38 43

Same location as #1:

25 40

Same location as #2:

4 6 8 9 11 12 13 15 17

18 22 29 30 31 33 34 39

Legend, Cont.:

Light Condition	Road Condition	Other
Nighttime	Wet	Highlight indicates at- fault vehicle.
Dusk	Snow/Ice	• Red highlight - Ran Stop Sign/Light
Dawn		• Green highlight - Failure to Yield
		• Aqua highlight - Following too Closely/ACDA
		• Purple highlight - Other cause or unknown

Google

LOG-SR 117 and SR 366 Intersection 2012 to 2022 Crash Data (run 4/5/2023)

				SEVERITY						WHEN OCCURRED			CONDITIONS			UNIT 1					UNIT 2			UNIT TYPE	
ID	Document Number	Crash Type	# of Units	Severity	F	SV	MV	NV	No Injuries	Day	Date	Hour	Light	Weather	Road	At Fault?	Speed (mph)	Precrash Action	Primary Contributing Circumstance	Age	Speed (mph)	Precrash Action	Age	Unit 1 / Unit 2 / Unit 3	NOTES
1	20128150040	Sideswipe - Passing	2	Minor Injury Suspected	0	0	1	0	2	Wed	11/21/2012	12	Daylight	Clear	Dry	Yes	50	Overtaking/ Passing	Following Too Closely/ACDA	22	4	Making Left Turn	56	Pick up / Passenger Car	Car was stopped waiting to turn left; following pickup was unable to stop and went into NB lane but struck car as it was turning. Unit 1 Object Struck - Ditch
2	20136626625	Rear End	2	Minor Injury Suspected	0	0	1	1	1	Wed	4/10/2013	12	Daylight	Clear	Dry	Yes	55	Straight Ahead	Following Too Closely/ACDA	18	40	Making Left Turn	74	Passenger Car / Passenger Car	Car in front was slowed to turn left; Unit 1 Driver distracted by "other activity with an electronic device".
3	20137029425	Right Turn	2	Minor Injury Suspected	0	0	1	2	1	Fri	6/21/2013	20	Daylight	Clear	Dry	Yes	5	Making Right Turn	Failure to Yield	61	58	Straight Ahead	63	SUV / Passenger Car	Speed Related
4	20134043624	Rear End	2	PDO/No Injury					3	Fri	7/5/2013	13	Daylight	Clear	Dry	Yes	5	Straight Ahead	Following Too Closely/ACDA	25		Straight Ahead	28	Passenger Car / SUV	Both vehicles were slowing for traffic.
5	20147005695	Fixed Object	1	PDO/No Injury					1	Sun	1/19/2014	16	Daylight	Clear	Snow	Yes	50	Straight Ahead	Other Improper Action	21				Passenger Car /	Roadway Departure Crash; SB vehicle lost control, went off left side and struck truck prohibition sign. Unit 1 Object Struck - Traffic Sign Post
6	20147067064	Rear End	2	Serious Injury Suspected	0	1	2	0	0	Sat	11/1/2014	13	Daylight	Clear	Dry	Yes	55	Straight Ahead	Following Too Closely/ACDA	31		Slowing or Stopped In Traffic	66	Minivan / Minivan	Vehicle in front was stopped waiting to turn left; Unit 1 Driver distracted by "manually operating an electronic communication device (texting, typing, dialing)".
7	20147071497	Head On	2	Serious Injury Suspected	0	1	0	0	1	Tue	11/18/2014	9	Daylight	Clear	Ice	Yes	40	Straight Ahead	Other Improper Action	21	40	Straight Ahead	29	SUV / Semi-Tractor	NB vehicle was slowing for intersection when lost control on icy road, went left of center and struck SB semi head-on; 1 Unrestrained Occupant; Unit 1,2 Object Struck - Ditch
8	20147080950	Rear End	2	PDO/No Injury					3	Tue	12/16/2014	16	Dusk	Rain	Wet	Yes	55	Straight Ahead	Following Too Closely/ACDA	60		Slowing or Stopped In Traffic	37	Passenger Car / Passenger Car	Vehicle in front was stopped waiting to turn left.
9	20147080946	Rear End	2	PDO/No Injury					4	Mon	12/29/2014	14	Daylight	Clear	Dry	Yes	55	Straight Ahead	Following Too Closely/ACDA	17		Straight Ahead	34	SUV / SUV	Vehicle in front was stopped waiting for traffic ahead.
10	20157043697	Fixed Object	1	PDO/No Injury					1	Mon	6/15/2015	15	Daylight	Cloudy	Dry	No	50	Straight Ahead	None	61				Pick up /	Roadway Departure Crash; SB vehicle went off right side; driver reported he did so to avoid NB semi that had crossed into SB lane, this statement was supported by skidmarks observed at the scene; Unit 1 Objects Struck - Other post/pole/support, ditch
11	20157048543	Rear End	2	Injury Possible	0	0	0	1	3	Tue	6/23/2015	14	Daylight	Clear	Dry	Yes	50	Straight Ahead	Following Too Closely/ACDA	17	20	Making Right Turn	19	Pick up / Passenger Car	Vehicle in front was slowed to turn right.
12	20166009032	Rear End	2	PDO/No Injury					6	Mon	1/18/2016	11	Daylight	Clear	Dry	Yes	55	Straight Ahead	Following Too Closely/ACDA	29	20	Slowing or Stopped In Traffic	65	Passenger Car / Passenger Car	Vehicle in front slowed to turn left.
13	20166043958	Rear End	3	Minor Injury Suspected	0	0	4	14	24	Thu	3/31/2016	16	Daylight	Cloudy	Dry	Yes	50	Straight Ahead	Following Too Closely/ACDA	54		Slowing or Stopped In Traffic	47	Bus (16+ Passengers, Charter/Tour) / Semi-Tractor / Passenger Car	Vehicle in front (Unit 3) was stopped. Unit 3 Precrash Action - Slowing or Stopped in Traffic
14	20167020452	Angle	2	PDO/No Injury					4	Sun	4/10/2016	18	Daylight	Clear	Wet	Yes	15	Making Left Turn	Failure to Yield	63	15	Making Left Turn	43	Passenger Car / Passenger Car	EB vehicle was turning left to go north on SR 117; NB vehicle was turning left to go west on SR 366; 1 Unrestrained Occupant
15	20166050928	Rear End	2	Injury Possible	0	0	0	2	0	Mon	4/18/2016	16	Daylight	Clear	Dry	Yes	55	Straight Ahead	Following Too Closely/ACDA	22	5	Slowing or Stopped In Traffic	56	SUV / SUV	Vehicle in front slowed to turn left; Unit 1 Driver distracted by "Other distraction outside the vehicle". Unit 1 Object Struck - other post/pole/support
16	20164020060	Angle	2	PDO/No Injury					4	Tue	7/12/2016	15	Daylight	Clear	Dry	Yes	15	Straight Ahead	Failure to Yield	20	55	Straight Ahead	34	Pick up / Minivan	Unit 2 Objects Struck - Traffic Sign Post, Other Fixed Object
17	20166131576	Rear End	2	PDO/No Injury					3	Wed	9/28/2016	15	Daylight	Cloudy	Wet	Yes	50	Straight Ahead	Following Too Closely/ACDA	78	10	Straight Ahead	50	Passenger Car / Passenger Car	Vehicle in front slowed to turn left.
18	20176034542	Rear End	3	Minor Injury Suspected	0	0	1	0	3	Mon	3/13/2017	9	Daylight	Clear	Dry	Yes	50	Straight Ahead	Following Too Closely/ACDA	39		Slowing or Stopped In Traffic	70	Minivan / Pick up / Passenger Car	Car in front (Unit 3) was stopped waiting to make a left turn; 1 Unrestrained Occupant; Unit 3 Precrash Action - Making Left Turn
19	20176039270	Fixed Object	1	PDO/No Injury					1	Tue	3/21/2017	9	Daylight	Fog, Smog, Smoke	Wet	Yes	50	Straight Ahead	Improper Lane Change	63				Semi-Tractor	Roadway Departure Crash; NB semi began braking for traffic stopped waiting to turn left onto SR 366, overcorrected and went off right side. Unit 1 Objects Struck - Other Fixed Object, Fence, Traffic Sign Post
20	20176113519	Left Turn	2	PDO/No Injury					5	Sat	8/5/2017	15	Daylight	Clear	Dry	No	10	Making Left Turn	None	20	10	Straight Ahead	26	Pick up / SUV	Both proceeded from stop simultaneously; neither was cited.
21	20186047851	Angle	2	PDO/No Injury					2	Sat	3/17/2018	19	Dusk	Rain	Wet	Yes	0	Straight Ahead	Other Improper Action	0	3	Entering Traffic Lane	61	Passenger Car / Cargo Van	Unsolved Hit/Skip; SB car was travelling at dusk without headlights on and was not seen by EB van.
22	20186066913	Rear End	2	Minor Injury Suspected	0	0	1	0	1	Thu	4/26/2018	11	Daylight	Clear	Dry	Yes	40	Straight Ahead	Following Too Closely/ACDA	60	2	Slowing or Stopped In Traffic	93	SUV / Passenger Car	SUV rear-ended car making a left turn.
23	20186107925	Rear End	2	PDO/No Injury					4	Sat	7/7/2018	18	Daylight	Clear	Dry	Yes	55	Straight Ahead	Following Too Closely/ACDA	17	2	Slowing or Stopped In Traffic	65	Passenger Car / Passenger Car	Vehicle ahead was slowed in traffic.
24	20186136022	Fixed Object	1	PDO/No Injury					2	Mon	8/13/2018	8	Daylight	Clear	Dry	Yes	55	Straight Ahead	Other Improper Action	26				Minivan /	Roadway Departure Crash; SB vehicle went off left side of road and across TR 100 before striking utility pole. Unit 1 Objects Struck - Ditch, Utility Pole

LOG-SR 117 and SR 366 Intersection 2012 to 2022 Crash Data (run 4/5/2023)

				SEVERITY						WHEN OCCURRED			CONDITIONS			UNIT 1					UNIT 2			UNIT TYPE	
ID	Document Number	Crash Type	# of Units	Severity	F	SV	MV	NV	No Injuries	Day	Date	Hour	Light	Weather	Road	At Fault?	Speed (mph)	Precrash Action	Primary Contributing Circumstance	Age	Speed (mph)	Precrash Action	Age	Unit 1 / Unit 2 / Unit 3	NOTES
25	20193044074	Sideswipe - Passing	2	PDO/No Injury					2	Wed	2/13/2019	9	Daylight	Cloudy	Dry	Yes	45	Overtaking/ Passing	Improper Passing	57	15	Making Left Turn	36	Pick up / Passenger Car	Pickup in front was using a spare tire and was going slower; both vehicles behind were passing when pickup started to turn left, resulting in the pickup colliding with the trailer of the second passing car.
26	20193130372	Fixed Object	1	PDO/No Injury					3	Sat	7/6/2019	14	Daylight	Clear	Dry	Yes	55	Straight Ahead	Following Too Closely/ACDA	27				Passenger Car /	Roadway Departure Crash; NB car went off right side to avoid rear-ending vehicle stopped waiting to turn left; driver of car was distracted by outside scenery. Unit 1 Driver distracted by "other distraction outside the vehicle". Unit 1 Objects Struck - Ditch, Other Post/Pole/Support
27	20193145473	Angle	2	PDO/No Injury					3	Thu	7/18/2019	12	Daylight	Clear	Dry	Yes	20	Making Left Turn	Failure to Yield	61	57	Straight Ahead	21	Passenger Car / Passenger Car	Speed Related; WB vehicle was going to tur left to go south on SR 117.
28	20193179968	Left Turn	3	Injury Possible	0	0	0	1	2	Wed	8/21/2019	16	Daylight	Clear	Dry	Yes	5	Making Left Turn	Failure to Yield	79	55	Straight Ahead	20	Minivan / Passenger Car / Pick up	Roadway Departure Crash; Unit 3 Precrash Action - Slowing or Stopped in Traffic
29	20193288540	Rear End	2	PDO/No Injury					3	Fri	12/20/2019	13	Daylight	Clear	Dry	Yes	45	Straight Ahead	Following Too Closely/ACDA	19		Slowing or Stopped In Traffic	21	Passenger Car / Passenger Car	Vehicle struck was stopped waiting for car ahead to turn.
30	20203058992	Rear End	2	Injury Possible	0	0	0	1	7	Sat	3/28/2020	16	Daylight	Cloudy	Wet	Yes	20	Straight Ahead	Following Too Closely/ACDA	37	30	Making Left Turn	25	Passenger Car / SUV	Alcohol Related; Vehicle in front was struck while making left turn onto SR 366.
31	20205148395	Rear End	2	PDO/No Injury					3	Tue	9/1/2020	13	Daylight	Cloudy	Dry	Yes	55	Straight Ahead	Following Too Closely/ACDA	23	0	Slowing or Stopped In Traffic	65	Minivan / SUV	Vehicle in front was stopped waiting to turn left.
32	20203157841	Rear End	2	PDO/No Injury					5	Mon	9/7/2020	16	Daylight	Rain	Wet	Yes	30	Straight Ahead	Following Too Closely/ACDA	61		Slowing or Stopped In Traffic	50	Passenger Car / Passenger Car	Vehicle in front was stopped in traffic.
33	20213040466	Sideswipe - Passing	2	PDO/No Injury					3	Fri	3/12/2021	16	Daylight	Clear	Dry	Yes	50	Straight Ahead	Following Too Closely/ACDA	85		Slowing or Stopped In Traffic	68	SUV / Passenger Car	Vehicle in front was stopped waiting to turn left.
34	20215099204	Rear End	2	PDO/No Injury					5	Tue	6/8/2021	14	Daylight	Clear	Dry	Yes	45	Straight Ahead	Following Too Closely/ACDA	19	5	Making Left Turn	26	Passenger Car / SUV	Vehicle in front slowed to turn left; Unit 2 Object Struck - Utility Pole
35	20215103115	Angle	2	PDO/No Injury					3	Sun	6/13/2021	13	Daylight	Clear	Dry	Yes	50	Overtaking/ Passing	Improper Passing	36	2	Straight Ahead	79	Motorcycle / Pick up	SB motorcycles were passing several vehicles as they approached intersection resulting in one of the motorcycles being struck by EB vehicle.
36	20215131875	Rear End	2	Minor Injury Suspected	0	0	1	0	1	Mon	7/19/2021	9	Daylight	Clear	Dry	Yes	55	Straight Ahead	Following Too Closely/ACDA	49		Slowing or Stopped In Traffic	44	Passenger Car / Pick up	Vehicle in front was stopped in traffic; 1 Unrestrained Occupant; Unit 1 Driver distracted by "other distraction inside the vehicle".
37	20213156335	Angle	2	Minor Injury Suspected	0	0	3	0	0	Sat	7/31/2021	23	Dark - Not Lighted	Clear	Dry	Yes	15	Straight Ahead	Failure to Yield	17	55	Straight Ahead	68	Passenger Car / Passenger Car	
38	20213156343	Angle	2	Minor Injury Suspected	0	0	3	0	2	Thu	8/12/2021	16	Daylight	Clear	Dry	Yes	5	Straight Ahead	Failure to Yield	43	57	Straight Ahead	56	Passenger Car / Passenger Car	Roadway Departure Crash; Speed Related; 1 Unrestrained Occupant
39	20213219997	Rear End	2	PDO/No Injury					3	Fri	10/8/2021	15	Daylight	Clear	Dry	Yes	60	Straight Ahead	Following Too Closely/ACDA	23		Slowing or Stopped In Traffic	68	Passenger Car / Pick up	Speed Related; Vehicle in front was stopped waiting to turn left; Unit 1 Driver distracted by "passenger".
40	20213220022	Sideswipe - Passing	2	PDO/No Injury					2	Sat	10/23/2021	13	Daylight	Cloudy	Dry	Yes	55	Overtaking/ Passing	Improper Passing	20	5	Making Left Turn	49	Passenger Car / Passenger Car	Car behind did not realize car in front was turning left and attempted to pass. Unit 1 Object Struck - Ditch
41	20215257064	Angle	2	Minor Injury Suspected	0	0	1	1	0	Tue	12/21/2021	9	Daylight	Clear	Dry	Yes	30	Straight Ahead	None	22	55	Straight Ahead	64	Passenger Car / Pick up	Unsolved Hit/Skip; SB vehicle was travelling at dusk without headlights on and was not seen by EB vehicle. Unit 1 Object Struck - Other Fixed Object
42	20223012899	Sideswipe - Passing	2	Injury Possible	0	0	0	1	2	Tue	1/18/2022	14	Daylight	Clear	Dry	Yes	55	Straight Ahead	Following Too Closely/ACDA	26		Slowing or Stopped In Traffic	75	Pick up (Towing) / Passenger Car	
43	20223128363	Angle	3	Minor Injury Suspected	0	0	2	1	2	Sat	7/9/2022	14	Daylight	Clear	Dry	Yes	15	Straight Ahead	Failure to Yield	20	55	Straight Ahead	73	Passenger Car / SUV / Pick up	Unit 3 Precrash Action - Slowing or Stopped in Traffic
44	20223166647	Rear End	2	PDO/No Injury					3	Sun	7/31/2022	12	Daylight	Clear	Dry	Yes	5	Straight Ahead	Following Too Closely/ACDA	23		Slowing or Stopped In Traffic	71	SUV / Pick up	

F=Fatalities, SV = Serious Injury Suspected (Serious Visible), MV = Minor Injury Suspected (Minor Visible), NV = Injury Possible (No Visible)

LOG-SR 117 and SR 366 Intersection 2012 to 2022 Crash Data (run 4/5/2023)

				SEVERITY						WHEN OCCURRED			CONDITIONS			UNIT 1					UNIT 2			UNIT TYPE	
ID	Document Number	Crash Type	# of Units	Severity	F	SV	MV	NV	No Injuries	Day	Date	Hour	Light	Weather	Road	At Fault?	Speed (mph)	Precrash Action	Primary Contributing Circumstance	Age	Speed (mph)	Precrash Action	Age	Unit 1 / Unit 2 / Unit 3	NOTES
	20146006180	Fixed Object	1	PDO/No Injury					1	Fri	1/17/2014	21	Dark - Not Lighted	Clear	Slush	Yes	70	Negotiating a Curve	Unsafe Speed	18				Passenger Car /	Roadway Departure Crash; Speed Related; Road Contour - Curve-Grade; Private drive crash near slip ramp merge; Unit 1 Object Struck - Other Fixed Object
	20144011091	Rear End	2	Injury Possible	0	0	0	4	0	Tue	3/4/2014	16	Daylight	Clear	Dry	Yes	55	Straight Ahead	Following Too Closely/ACDA	29		Slowing or Stopped In Traffic	53	Passenger Car / SUV	intersection not shown on diagram
	20157018156	Rear End	2	PDO/No Injury					2	Mon	3/23/2015	17	Daylight	Snow	Snow	Yes	40	Straight Ahead	Following Too Closely/ACDA	26	5	Slowing or Stopped In Traffic	39	Passenger Car / SUV	at 8140, between main int and slip ramp
	20154036556	Angle	2	Fatal	1	0	1	0	0	Tue	12/8/2015	14	Daylight	Clear	Dry	Yes	55	Making Right Turn	Failure to Yield	89	55	Straight Ahead	86	Passenger Car / Passenger Car	at 8140, between main int and slip ramp; Unit 1 Object Struck - Ditch
	20156156893	Left Turn	2	Minor Injury Suspected	0	0	1	0	2	Tue	12/8/2015	14	Daylight	Cloudy	Dry	Yes	2	Entering Traffic Lane	Failure to Yield	55	40	Straight Ahead	27	Passenger Car / Passenger Car	Unit 1 was making a left turn at private drive; Unit 1 Object Struck - Ditch
	20176056371	Fixed Object	1	Minor Injury Suspected	0	0	1	0	0	Thu	4/20/2017	3	Dark - Not Lighted	Clear	Dry	Yes	55	Straight Ahead	Other Improper Action	50				Passenger Car /	Roadway Departure Crash; at 8140, between main int and slip ramp; Unit 1 Objects Struck - Trees
	20176189507	Sideswipe - Passing	2	Minor Injury Suspected	0	0	2	0	1	Tue	12/5/2017	17	Dark - Lighted	Clear	Dry	Yes	10	Making U-Turn	Other Improper Action	73	40	Straight Ahead	30	SUV / Passenger Car	Roadway Departure Crash; intersection in diagram; occurred N of main intersection
	20186010462	Rear End	2	PDO/No Injury					3	Thu	1/18/2018	13	Daylight	Cloudy	Ice	Yes	50	Slowing or Stopped In Traffic	Following Too Closely/ACDA	22		Slowing or Stopped In Traffic	29	Passenger Car / SUV	intersection not shown on diagram
	20186087996	Parked Vehicle	5	Minor Injury Suspected	0	0	1	0	0	Thu	5/31/2018	23	Dark - Not Lighted	Clear	Dry	Yes	35	Straight Ahead	None	45		Parked		Pick up / SUV / SUV	Alcohol Related; Roadway Departure Crash; Designated as Intersection Related; Unit 1 Driver distracted by "other distraction outside the vehicle"; 1 Unrestrained Occupant; Unit 1 Objects Struck - Traffic Sign Post, Other Post/Pole/Support, Fence, Parked Motor Vehicles
	20186107765	Head On	2	Fatal	1	1	0	0	0	Sat	6/30/2018	17	Daylight	Clear	Dry	Yes	51	Straight Ahead	Left of Center	56	55	Straight Ahead	62	Passenger Car / Motorcycle	Alcohol/Drug Related; Roadway Departure Crash; intersection not shown on diagram; Unit 1 Object Struck - Ditch
	20203202712	Fixed Object	1	PDO/No Injury					1	Wed	10/14/2020	0	Daylight	Clear	Dry	Yes	60	Straight Ahead	Drove off Road	19				Passenger Car /	Roadway Departure Crash; Speed Related; at 7873, just south of slip ramp; Road Contour - Curve-Level; Unit 1 Objects Struck - Building, Mailbox
	20213156355	Rear End	3	PDO/No Injury					4	Sun	8/22/2021	16	Daylight	Clear	Dry	Yes	57	Straight Ahead	Following Too Closely/ACDA	24	55	Slowing or Stopped In Traffic	18	Passenger Car / Passenger Car / Passenger Car	Speed Related; on 117 between main int and slip ramp; Unit 3 Precrash Action - Slowing or Stopped in Traffic
	20215219362	Sideswipe - Passing	2	Injury Possible	0	0	0	1	1	Mon	11/8/2021	7	Daylight	Clear	Dry	Yes	55	Straight Ahead	Following Too Closely/ACDA	33	15	Making Left Turn	31	SUV / Passenger Car	Roadway Departure Crash; at private drive

F=Fatalities, SV = Serious Injury Suspected (Serious Visible), MV = Minor Injury Suspected (Minor Visible), NV = Injury Possible (No Visible)

Green background indicates crash occurred between slip ramp and main intersection on SR 117.

HCS Two-Way Stop-Control Report

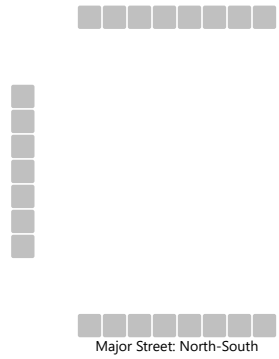
General Information

Analyst	MEH
Agency/Co.	ODOT District 7
Date Performed	5/18/2023
Analysis Year	2023
Time Analyzed	AM Peak Hour
Intersection Orientation	North-South
Project Description	Existing Conditions

Site Information

Intersection	LOG-SR 117 and SR 366
Jurisdiction	Logan County
East/West Street	SR 366/TR 100
North/South Street	SR 117
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		12	8	2		17	15	3		18	210	9		0	309	13
Percent Heavy Vehicles (%)		8	13	0		0	0	0		6				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.18	6.63	6.20		7.10	6.50	6.20		4.16				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.57	4.12	3.30		3.50	4.00	3.30		2.25				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			24				38			20				0		
Capacity, c (veh/h)			384				405			1183				1338		
v/c Ratio			0.06				0.09			0.02				0.00		
95% Queue Length, Q_{95} (veh)			0.2				0.3			0.1				0.0		
Control Delay (s/veh)			15.0				14.8			8.1	0.2	0.2		7.7	0.0	0.0
Level of Service (LOS)			C				B			A	A	A		A	A	A
Approach Delay (s/veh)	15.0				14.8				0.8				0.0			
Approach LOS	C				B				A				A			

HCS Two-Way Stop-Control Report

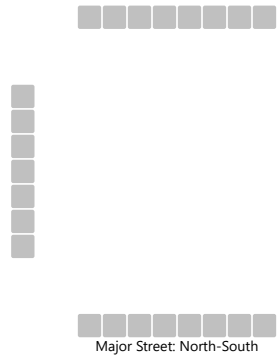
General Information

Analyst	MEH
Agency/Co.	ODOT District 7
Date Performed	5/18/2023
Analysis Year	2023
Time Analyzed	PM Peak Hour
Intersection Orientation	North-South
Project Description	Existing Conditions

Site Information

Intersection	LOG-SR 117 and SR 366
Jurisdiction	Logan County
East/West Street	SR 366/TR 100
North/South Street	SR 117
Peak Hour Factor	0.85
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		20	35	3		10	22	2		56	413	18		3	396	20
Percent Heavy Vehicles (%)		10	0	0		0	5	50		2				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.20	6.50	6.20		7.10	6.55	6.70		4.12				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.59	4.00	3.30		3.50	4.05	3.75		2.22				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			68				40			66				4		
Capacity, c (veh/h)			173				170			1074				1068		
v/c Ratio			0.39				0.24			0.06				0.00		
95% Queue Length, Q_{95} (veh)			1.7				0.9			0.2				0.0		
Control Delay (s/veh)			38.8				32.6			8.6	0.7	0.7		8.4	0.0	0.0
Level of Service (LOS)			E				D			A	A	A		A	A	A
Approach Delay (s/veh)	38.8				32.6				1.6				0.1			
Approach LOS	E				D				A				A			

HCS Two-Way Stop-Control Report

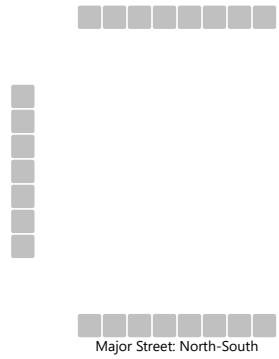
General Information

Analyst	MEH
Agency/Co.	ODOT District 7
Date Performed	5/18/2023
Analysis Year	2023
Time Analyzed	AM Peak Hour
Intersection Orientation	North-South
Project Description	Proposed Left Turn Lanes

Site Information

Intersection	LOG-SR 117 and SR 366
Jurisdiction	Logan County
East/West Street	SR 366/TR 100
North/South Street	SR 117
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	1	0	0	1	1	0
Configuration			LTR				LTR			L		TR		L		TR
Volume (veh/h)		12	8	2		17	15	3		18	210	9		0	309	13
Percent Heavy Vehicles (%)		8	13	0		0	0	0		6				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.18	6.63	6.20		7.10	6.50	6.20		4.16				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.57	4.12	3.30		3.50	4.00	3.30		2.25				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			24				38			20				0		
Capacity, c (veh/h)			385				406			1183				1338		
v/c Ratio			0.06				0.09			0.02				0.00		
95% Queue Length, Q_{95} (veh)			0.2				0.3			0.1				0.0		
Control Delay (s/veh)			15.0				14.8			8.1				7.7		
Level of Service (LOS)			B				B			A				A		
Approach Delay (s/veh)	15.0				14.8				0.6				0.0			
Approach LOS	B				B				A				A			

HCS Two-Way Stop-Control Report

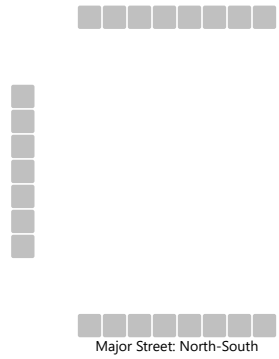
General Information

Analyst	MEH
Agency/Co.	ODOT District 7
Date Performed	5/18/2023
Analysis Year	2023
Time Analyzed	PM Peak Hour
Intersection Orientation	North-South
Project Description	Proposed Left Turn Lanes

Site Information

Intersection	LOG-SR 117 and SR 366
Jurisdiction	Logan County
East/West Street	SR 366/TR 100
North/South Street	SR 117
Peak Hour Factor	0.85
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	1	0	0	1	1	0
Configuration			LTR				LTR			L		TR		L		TR
Volume (veh/h)		20	35	3		10	22	2		56	413	18		3	396	20
Percent Heavy Vehicles (%)		10	0	0		0	5	50		2				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.20	6.50	6.20		7.10	6.55	6.70		4.12				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.59	4.00	3.30		3.50	4.05	3.75		2.22				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			68				40			66				4		
Capacity, c (veh/h)			178				175			1074				1068		
v/c Ratio			0.38				0.23			0.06				0.00		
95% Queue Length, Q_{95} (veh)			1.7				0.8			0.2				0.0		
Control Delay (s/veh)			37.3				31.6			8.6				8.4		
Level of Service (LOS)			E				D			A				A		
Approach Delay (s/veh)	37.3				31.6				1.0				0.1			
Approach LOS	E				D				A				A			

HCS Roundabouts Report

General Information

Analyst	MEH
Agency or Co.	ODOT District 7
Date Performed	5/18/2023
Analysis Year	2023
Time Analyzed	AM Peak Hour
Project Description	Proposed Roundabout

Site Information

Intersection	LOG-SR 117 and SR 366
E/W Street Name	SR 366/TR 100
N/S Street Name	SR 117
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.91
Jurisdiction	Logan County

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	12	8	30	0	17	15	3	0	18	210	9	0	0	309	13
Percent Heavy Vehicles, %	3	8	13	13	3	0	0	0	3	6	21	0	3	0	18	15
Flow Rate (v_{PCE}), pc/h	0	14	10	37	0	19	16	3	0	21	279	10	0	0	401	16
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		61			38			310			417	
Entry Volume, veh/h		55			38			260			354	
Circulating Flow (v_c), pc/h	420			314			24			56		
Exiting Flow (v_{ex}), pc/h	20			53			296			457		
Capacity (c_{pce}), pc/h		899			1002			1347			1303	
Capacity (c), veh/h		804			1002			1131			1106	
v/c Ratio (x)		0.07			0.04			0.23			0.32	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		5.1			3.9			5.3			6.4	
Lane LOS		A			A			A			A	
95% Queue, veh		0.2			0.1			0.9			1.4	
Approach Delay, s/veh | LOS	5.1	A		3.9	A		5.3	A		6.4	A	
Intersection Delay, s/veh | LOS	5.7						A					

HCS Roundabouts Report

General Information

Analyst	MEH
Agency or Co.	ODOT District 7
Date Performed	5/18/2023
Analysis Year	2023
Time Analyzed	PM Peak Hour
Project Description	Proposed Roundabout

Site Information

Intersection	LOG-SR 117 and SR 366
E/W Street Name	SR 366/TR 100
N/S Street Name	SR 117
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.85
Jurisdiction	Logan County

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	20	35	49	0	10	22	2	0	56	413	18	0	3	396	20
Percent Heavy Vehicles, %	3	10	0	2	3	0	5	50	3	2	10	0	3	0	10	15
Flow Rate (v_{PCE}), pc/h	0	26	41	59	0	12	27	4	0	67	534	21	0	4	512	27
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		126			43			622			543	
Entry Volume, veh/h		122			40			572			493	
Circulating Flow (v_c), pc/h	528			627			71			106		
Exiting Flow (v_{ex}), pc/h	66			121			564			583		
Capacity (c_{pce}), pc/h		805			728			1284			1239	
Capacity (c), veh/h		783			684			1181			1124	
v/c Ratio (x)		0.16			0.06			0.48			0.44	

Delay and Level of Service

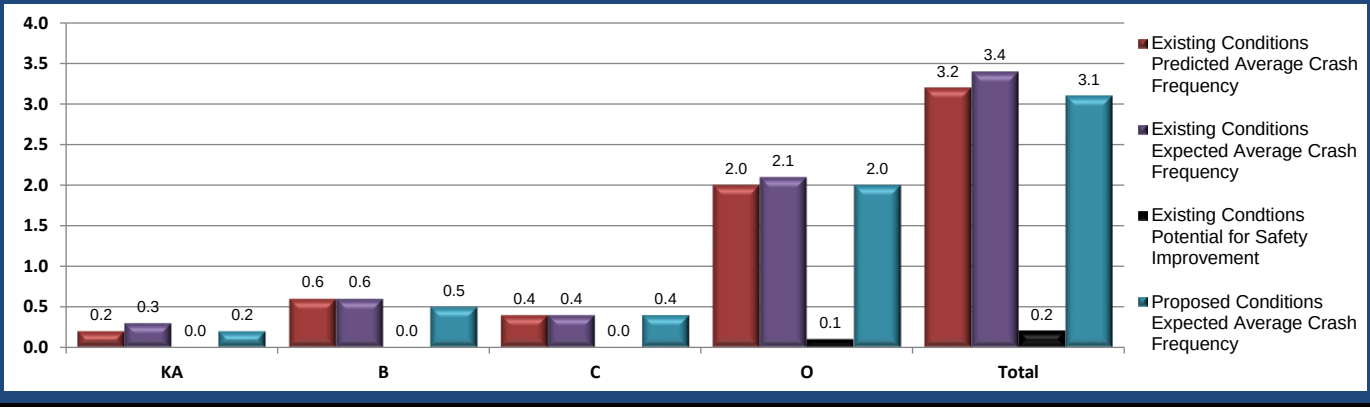
Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		6.2			5.9			8.3			7.9	
Lane LOS		A			A			A			A	
95% Queue, veh		0.6			0.2			2.7			2.3	
Approach Delay, s/veh | LOS	6.2	A		5.9	A		8.3	A		7.9	A	
Intersection Delay, s/veh | LOS	7.8						A					

Project Safety Performance Report

General Information

Project Name	SR 117 & SR 366 Intersection	Contact Email	Mary.Hoy@dot.ohio.gov
Project Description	Proposed LED signs	Contact Phone	937-497-6838
Reference Number		Date Performed	5/18/2023
Analyst	MEH	Analysis Year	2045
Agency/Company	ODOT District 7		

Summary of Anticipated Safety Performance of the Project (average crashes/year)



Project Summary Results (Without Animal Crashes)

	KA	B	C	O	Total
$N_{predicted}$ - Existing Conditions	0.2350	0.5691	0.3787	2.0366	3.2194
$N_{expected}$ - Existing Conditions	0.2546	0.6172	0.4109	2.1439	3.4266
$N_{potential\ for\ improvement}$ - Existing Conditions	**0.0196**	**0.0481**	**0.0322**	**0.1073**	**0.2072**
$N_{expected}$ - Proposed Conditions	0.2251	0.5479	0.3667	1.9685	3.1082

Existing Conditions Project Element Predicted Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
SR117: 4.865	LOG SR 117 and SR 366	0.235	0.5691	0.3787	2.0366	3.2194

Existing Conditions Project Element Expected Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
SR117: 4.865	LOG SR 117 and SR 366	0.2546	0.6172	0.4109	2.1439	3.4266

Existing Conditions Project Element Potential for Safety Improvement Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
SR117: 4.865	LOG SR 117 and SR 366	**0.0196**	**0.0481**	**0.0322**	**0.1073**	**0.2072**

Proposed Conditions Project Element Expected Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
SR117: 4.865	LOG SR 117 and SR 366	0.2251	0.5479	0.3667	1.9685	3.1082

Project Safety Performance Report

General Information

Project Name	SR 117 & SR 366 Intersection	Contact Email	Mary.Hoy@dot.ohio.gov
Project Description	Proposed LED signs	Contact Phone	937-497-6838
Reference Number		Date Performed	5/18/2023
Analyst	MEH	Analysis Year	2045
Agency/Company	ODOT District 7		

Summary by Crash Type

Crash Type	Existing			Proposed
	Predicted Crash Frequency	Expected Crash Frequency	PSI	Expected Crash Frequency
Unknown	0.0126	0.0134	**0.0008**	0.0070
Head On	0.0277	0.0297	**0.0020**	0.0154
Rear End	0.6880	0.7311	**0.0431**	0.3802
Backing	0.1295	0.1365	**0.0070**	0.0710
Sideswipe - Meeting	0.0935	0.0996	**0.0061**	0.0518
Sideswipe - Passing	0.1456	0.1542	**0.0086**	0.0802
Angle	1.2286	1.3123	**0.0837**	0.6824
Parked Vehicle	0.1145	0.1209	**0.0064**	0.0629
Pedestrian	0.0157	0.0170	**0.0013**	0.0088
Animal	0.0000	0.0000	0.0000	0.0000
Train	0.0006	0.0006	0.0000	0.0003
Pedalcycles	0.0118	0.0126	**0.0008**	0.0066
Other Non-Vehicle	0.0002	0.0003	**0.0001**	0.0002
Fixed Object	0.5399	0.5735	**0.0336**	0.2982
Other Object	0.0189	0.0199	**0.0010**	0.0103
Overturning	0.0326	0.0350	**0.0024**	0.0182
Other Non-Collision	0.0427	0.0451	**0.0024**	0.0235
Left Turn	0.1170	0.1249	**0.0079**	0.0649
Right Turn	0.0000	0.0000	0.0000	0.0000

Safety Benefit - Cost Analysis

General Information

Project Name	SR 117 & SR 366 Intersection	Contact Email	Mary.Hoy@dot.ohio.gov
Project Description	Proposed LED signs	Contact Phone	937-497-6838
Reference Number		Date Performed	5/18/2023
Analyst	MEH	Analysis Year	2045
Agency/Company	ODOT District 7		

Select Site Types to be used in Benefit-Cost Analysis:

All Sites

Comments:

Countermeasure Service Lives, Costs, and Safety Benefits

Countermeasures	Service Life (Years)	Initial Cost of Countermeasure	Annual Maintenance & Energy Costs	Salvage Value	Net Present Cost of Countermeasure	Total Cost of Countermeasures	Summary of Annual Crash Modifications	Net Present Value of Safety Benefits
Site Characteristic Improvements (Please add description about improvements i.e. Lane widening)					$0.00	$0.00	0.000	$0
Site Characteristic Improvements (Please add description about improvements i.e. Lighting)					$0.00	$0.00		
Site Characteristic Improvements (Please add description about improvements i.e. Signal Phasing)					$0.00	$0.00		
Site Characteristic Improvements (Please add description about improvements i.e. Added Right Turn Lane)					$0.00	$0.00		
CMF 1 - Provide flashing beacons at stop controlled intersections	10	$32,000.00			$32,000.00	$32,000.00	-0.318	$187,697
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
Totals		**$32,000.00**	**$0.00**	**$0.00**	**$32,000.00**	**$32,000.00**	**-0.318**	**$187,697**

Safety Benefit - Cost Analysis

General Information

Project Name	SR 117 & SR 366 Intersection	Contact Email	Mary.Hoy@dot.ohio.gov
Project Description	Proposed LED signs	Contact Phone	937-497-6838
Reference Number		Date Performed	5/18/2023
Analyst	MEH	Analysis Year	2045
Agency/Company	ODOT District 7		

Benefit - Cost Calculator

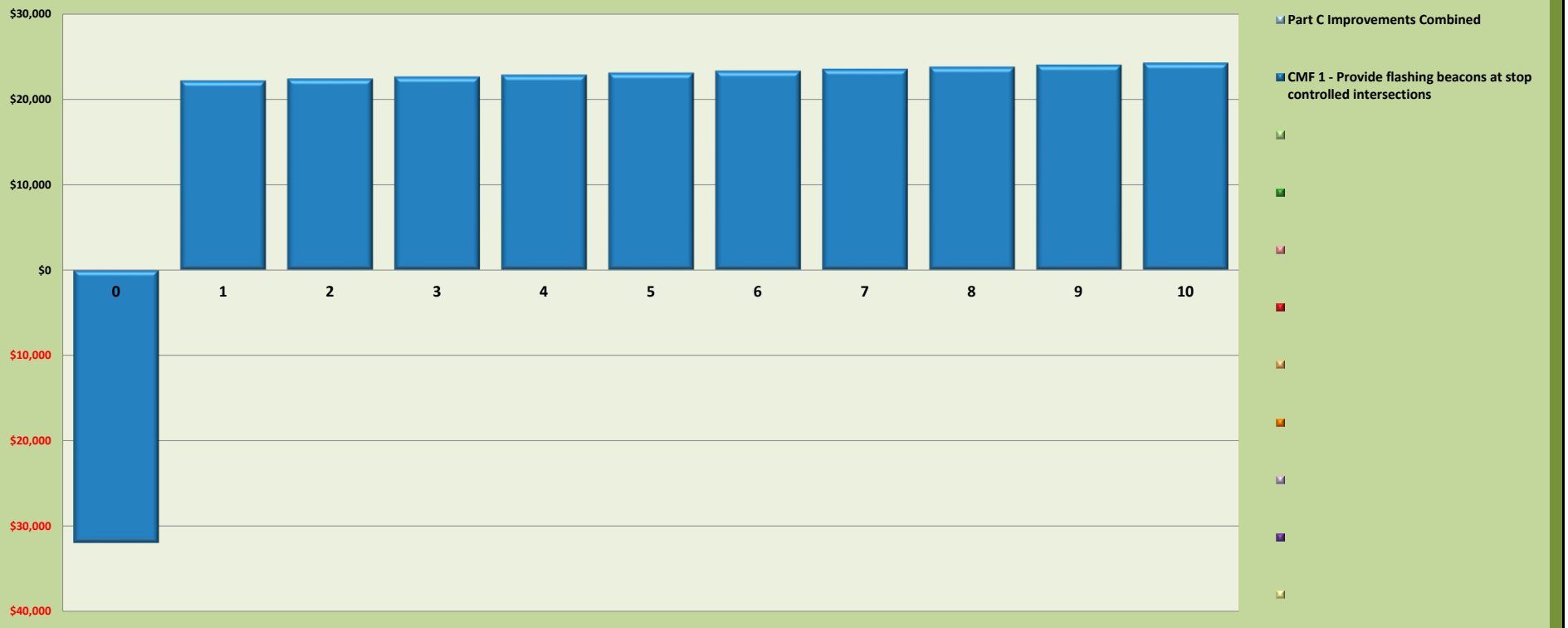
Net Present Value of Project	$32,000.00
Net Present Value of Safety Benefits	$187,697.16
Net Benefit	$155,697.16
Benefit / Cost Ratio	5.87

Expected Annual Crash Adjustment

Number of Fatal & Incapacitating Injury Crashes	-0.030
Number of Injury Crashes	-0.143
Number of Total Crashes	-0.318

Comments:

Safety Benefits and Project Costs Combined Cash Flows By Countermeasure Per Year

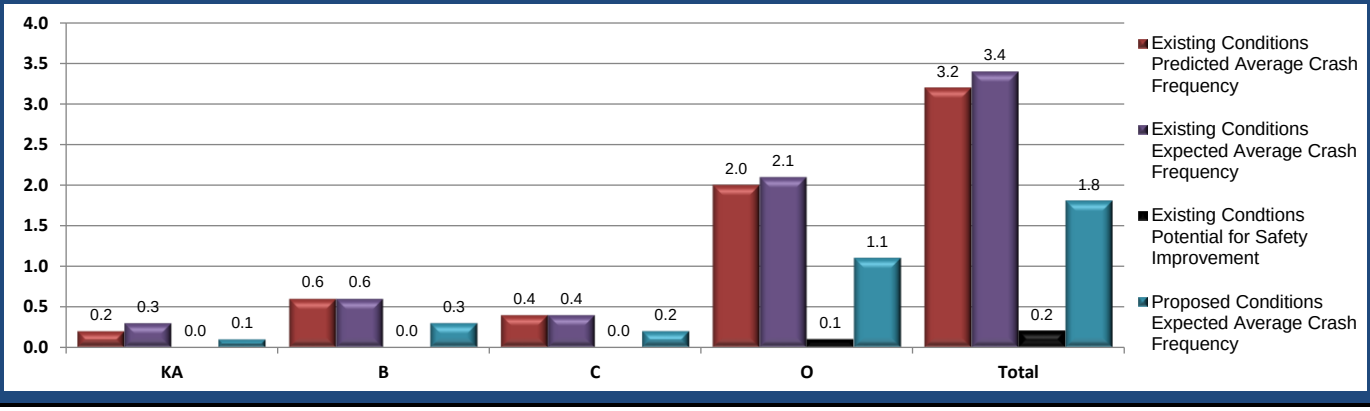


Project Safety Performance Report

General Information

Project Name	SR 117 & SR 366 Intersection	Contact Email	Mary.Hoy@dot.ohio.gov
Project Description	Proposed Left Turn Lanes	Contact Phone	937-497-6838
Reference Number		Date Performed	5/18/2023
Analyst	MEH	Analysis Year	2045
Agency/Company	ODOT District 7		

Summary of Anticipated Safety Performance of the Project (average crashes/year)



Project Summary Results (Without Animal Crashes)

	KA	B	C	O	Total
$N_{predicted}$ - Existing Conditions	0.2350	0.5691	0.3787	2.0366	3.2194
$N_{expected}$ - Existing Conditions	0.2546	0.6172	0.4109	2.1439	3.4266
$N_{potential\ for\ improvement}$ - Existing Conditions	**0.0196**	**0.0481**	**0.0322**	**0.1073**	**0.2072**
$N_{expected}$ - Proposed Conditions	0.1324	0.3209	0.2137	1.1148	1.7818

Existing Conditions Project Element Predicted Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
SR117: 4.865	LOG SR 117 and SR 366	0.235	0.5691	0.3787	2.0366	3.2194

Existing Conditions Project Element Expected Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
SR117: 4.865	LOG SR 117 and SR 366	0.2546	0.6172	0.4109	2.1439	3.4266

Existing Conditions Project Element Potential for Safety Improvement Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
SR117: 4.865	LOG SR 117 and SR 366	**0.0196**	**0.0481**	**0.0322**	**0.1073**	**0.2072**

Proposed Conditions Project Element Expected Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
SR117: 4.865	LOG SR 117 and SR 366	0.1324	0.3209	0.2137	1.1148	1.7818

Project Safety Performance Report

General Information

Project Name	SR 117 & SR 366 Intersection	Contact Email	Mary.Hoy@dot.ohio.gov
Project Description	Proposed Left Turn Lanes	Contact Phone	937-497-6838
Reference Number		Date Performed	5/18/2023
Analyst	MEH	Analysis Year	2045
Agency/Company	ODOT District 7		

Summary by Crash Type

Crash Type	Existing			Proposed
	Predicted Crash Frequency	Expected Crash Frequency	PSI	Expected Crash Frequency
Unknown	0.0126	0.0134	**0.0008**	0.0070
Head On	0.0277	0.0297	**0.0020**	0.0154
Rear End	0.6880	0.7311	**0.0431**	0.3802
Backing	0.1295	0.1365	**0.0070**	0.0710
Sideswipe - Meeting	0.0935	0.0996	**0.0061**	0.0518
Sideswipe - Passing	0.1456	0.1542	**0.0086**	0.0802
Angle	1.2286	1.3123	**0.0837**	0.6824
Parked Vehicle	0.1145	0.1209	**0.0064**	0.0629
Pedestrian	0.0157	0.0170	**0.0013**	0.0088
Animal	0.0000	0.0000	0.0000	0.0000
Train	0.0006	0.0006	0.0000	0.0003
Pedalcycles	0.0118	0.0126	**0.0008**	0.0066
Other Non-Vehicle	0.0002	0.0003	**0.0001**	0.0002
Fixed Object	0.5399	0.5735	**0.0336**	0.2982
Other Object	0.0189	0.0199	**0.0010**	0.0103
Overturning	0.0326	0.0350	**0.0024**	0.0182
Other Non-Collision	0.0427	0.0451	**0.0024**	0.0235
Left Turn	0.1170	0.1249	**0.0079**	0.0649
Right Turn	0.0000	0.0000	0.0000	0.0000

Safety Benefit - Cost Analysis

General Information

Project Name	SR 117 & SR 366 Intersection	Contact Email	Mary.Hoy@dot.ohio.gov
Project Description	Proposed Left Turn Lanes	Contact Phone	937-497-6838
Reference Number		Date Performed	5/18/2023
Analyst	MEH	Analysis Year	2045
Agency/Company	ODOT District 7		

Select Site Types to be used in Benefit-Cost Analysis:

All Sites

Comments:

Countermeasure Service Lives, Costs, and Safety Benefits

Countermeasures	Service Life (Years)	Initial Cost of Countermeasure	Annual Maintenance & Energy Costs	Salvage Value	Net Present Cost of Countermeasure	Total Cost of Countermeasures	Summary of Annual Crash Modifications	Net Present Value of Safety Benefits
Site Characteristic Improvements (Please add description about improvements i.e. Lane widening)	20	$1,500,000.00			$1,500,000.00	$1,500,000.00	-1.645	$1,422,331
Site Characteristic Improvements (Please add description about improvements i.e. Lighting)					$0.00	$0.00		
Site Characteristic Improvements (Please add description about improvements i.e. Signal Phasing)					$0.00	$0.00		
Site Characteristic Improvements (Please add description about improvements i.e. Added Right Turn Lane)					$0.00	$0.00		
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
Totals		**$1,500,000.00**	**$0.00**	**$0.00**	**$1,500,000.00**	**$1,500,000.00**	**-1.645**	**$1,422,331**

Safety Benefit - Cost Analysis

General Information

Project Name	SR 117 & SR 366 Intersection	Contact Email	Mary.Hoy@dot.ohio.gov
Project Description	Proposed Left Turn Lanes	Contact Phone	937-497-6838
Reference Number		Date Performed	5/18/2023
Analyst	MEH	Analysis Year	2045
Agency/Company	ODOT District 7		

Benefit - Cost Calculator

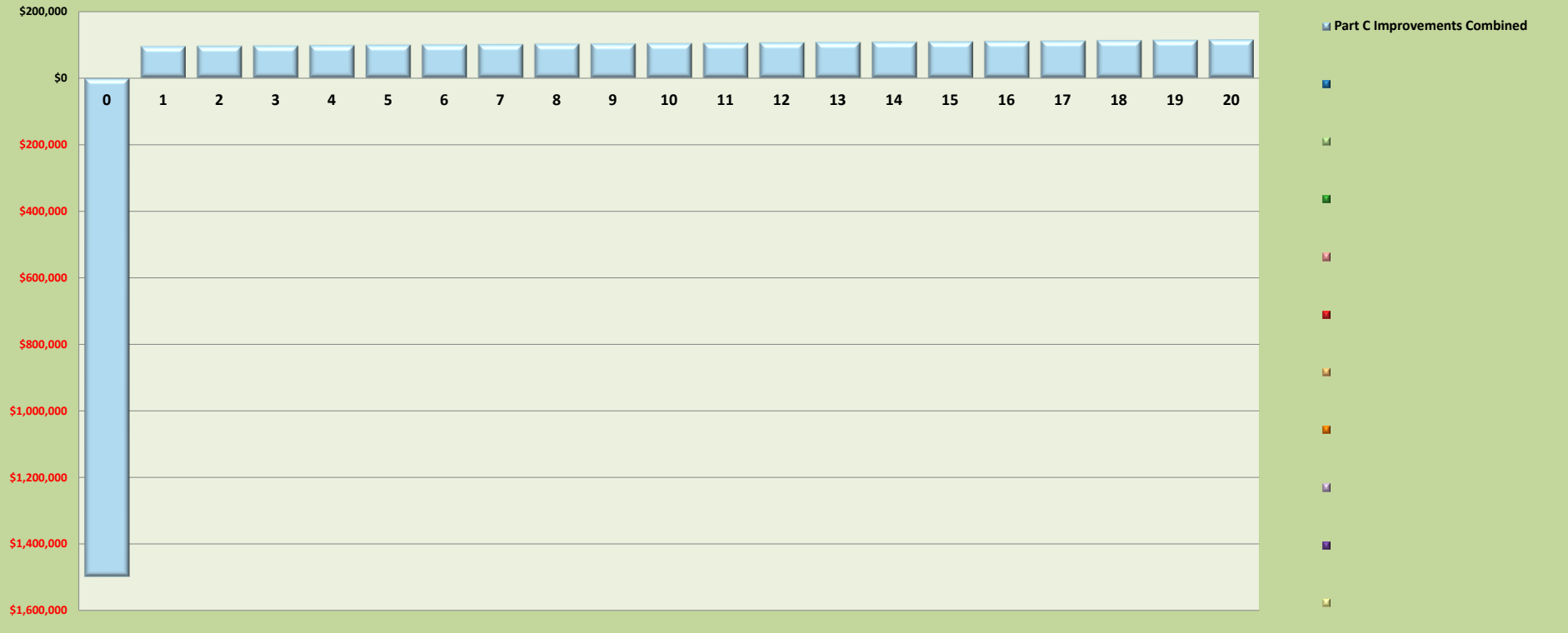
Net Present Value of Project	$1,500,000.00
Net Present Value of Safety Benefits	$1,422,331.43
Net Benefit	($77,668.57)
Benefit / Cost Ratio	0.95

Expected Annual Crash Adjustment

Number of Fatal & Incapacitating Injury Crashes	-0.122
Number of Injury Crashes	-0.616
Number of Total Crashes	-1.645

Comments:

Safety Benefits and Project Costs Combined Cash Flows By Countermeasure Per Year

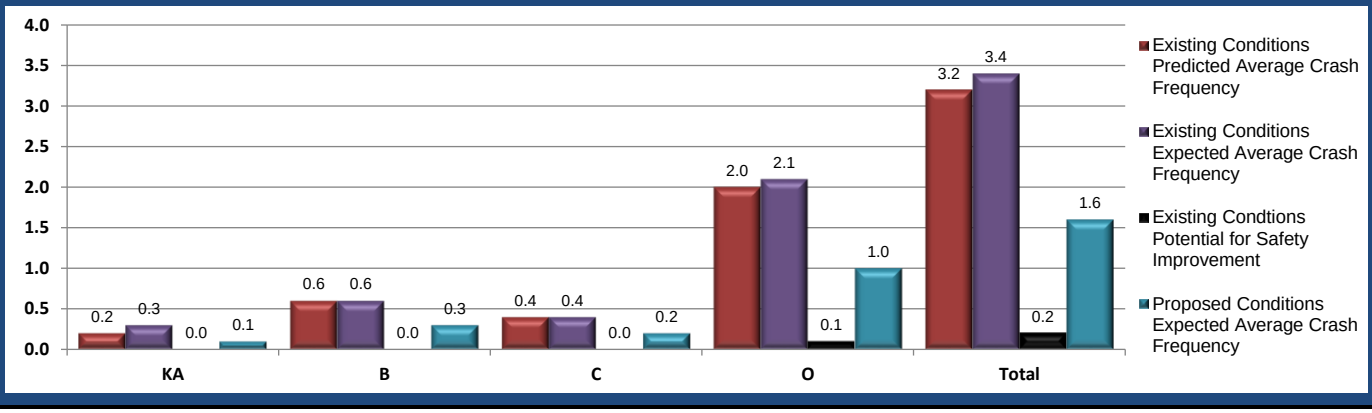


Project Safety Performance Report

General Information

Project Name	SR 117 & SR 366 Intersection	Contact Email	Mary.Hoy@dot.ohio.gov
Project Description	Proposed LED signs and Left Turn Lanes	Contact Phone	937-497-6838
Reference Number		Date Performed	5/18/2023
Analyst	MEH	Analysis Year	2045
Agency/Company	ODOT District 7		

Summary of Anticipated Safety Performance of the Project (average crashes/year)



Project Summary Results (Without Animal Crashes)

	KA	B	C	O	Total
$N_{predicted}$ - Existing Conditions	0.2350	0.5691	0.3787	2.0366	3.2194
$N_{expected}$ - Existing Conditions	0.2546	0.6172	0.4109	2.1439	3.4266
$N_{potential\ for\ improvement}$ - Existing Conditions	**0.0196**	**0.0481**	**0.0322**	**0.1073**	**0.2072**
$N_{expected}$ - Proposed Conditions	0.1171	0.2848	0.1907	1.0236	1.6162

Existing Conditions Project Element Predicted Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
SR117: 4.865	LOG SR 117 and SR 366	0.235	0.5691	0.3787	2.0366	3.2194

Existing Conditions Project Element Expected Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
SR117: 4.865	LOG SR 117 and SR 366	0.2546	0.6172	0.4109	2.1439	3.4266

Existing Conditions Project Element Potential for Safety Improvement Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
SR117: 4.865	LOG SR 117 and SR 366	**0.0196**	**0.0481**	**0.0322**	**0.1073**	**0.2072**

Proposed Conditions Project Element Expected Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
SR117: 4.865	LOG SR 117 and SR 366	0.1171	0.2848	0.1907	1.0236	1.6162

Project Safety Performance Report

General Information

Project Name	SR 117 & SR 366 Intersection	Contact Email	Mary.Hoy@dot.ohio.gov
Project Description	Proposed LED signs and Left Turn Lanes	Contact Phone	937-497-6838
Reference Number		Date Performed	5/18/2023
Analyst	MEH	Analysis Year	2045
Agency/Company	ODOT District 7		

Summary by Crash Type

Crash Type	Existing			Proposed
	Predicted Crash Frequency	Expected Crash Frequency	PSI	Expected Crash Frequency
Unknown	0.0126	0.0134	**0.0008**	0.0070
Head On	0.0277	0.0297	**0.0020**	0.0154
Rear End	0.6880	0.7311	**0.0431**	0.3802
Backing	0.1295	0.1365	**0.0070**	0.0710
Sideswipe - Meeting	0.0935	0.0996	**0.0061**	0.0518
Sideswipe - Passing	0.1456	0.1542	**0.0086**	0.0802
Angle	1.2286	1.3123	**0.0837**	0.6824
Parked Vehicle	0.1145	0.1209	**0.0064**	0.0629
Pedestrian	0.0157	0.0170	**0.0013**	0.0088
Animal	0.0000	0.0000	0.0000	0.0000
Train	0.0006	0.0006	0.0000	0.0003
Pedalcycles	0.0118	0.0126	**0.0008**	0.0066
Other Non-Vehicle	0.0002	0.0003	**0.0001**	0.0002
Fixed Object	0.5399	0.5735	**0.0336**	0.2982
Other Object	0.0189	0.0199	**0.0010**	0.0103
Overturning	0.0326	0.0350	**0.0024**	0.0182
Other Non-Collision	0.0427	0.0451	**0.0024**	0.0235
Left Turn	0.1170	0.1249	**0.0079**	0.0649
Right Turn	0.0000	0.0000	0.0000	0.0000

Safety Benefit - Cost Analysis

General Information

Project Name	SR 117 & SR 366 Intersection	Contact Email	Mary.Hoy@dot.ohio.gov
Project Description	Proposed LED signs and Left Turn Lanes	Contact Phone	937-497-6838
Reference Number		Date Performed	5/18/2023
Analyst	MEH	Analysis Year	2045
Agency/Company	ODOT District 7		

Select Site Types to be used in Benefit-Cost Analysis:

All Sites

Comments:

Countermeasure Service Lives, Costs, and Safety Benefits

Countermeasures	Service Life (Years)	Initial Cost of Countermeasure	Annual Maintenance & Energy Costs	Salvage Value	Net Present Cost of Countermeasure	Total Cost of Countermeasures	Summary of Annual Crash Modifications	Net Present Value of Safety Benefits
Site Characteristic Improvements (Please add description about improvements i.e. Lane widening)	20	$1,500,000.00			$1,500,000.00	$1,500,000.00	-1.645	$1,422,331
Site Characteristic Improvements (Please add description about improvements i.e. Lighting)					$0.00	$0.00		
Site Characteristic Improvements (Please add description about improvements i.e. Signal Phasing)					$0.00	$0.00		
Site Characteristic Improvements (Please add description about improvements i.e. Added Right Turn Lane)					$0.00	$0.00		
CMF 1 - Provide flashing beacons at stop controlled intersections	10	$32,000.00			$64,000.00	$79,367.82	-0.166	$170,236
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
Totals		**$1,532,000.00**	**$0.00**	**$0.00**	**$1,564,000.00**	**$1,579,367.82**	**-1.810**	**$1,592,568**

Safety Benefit - Cost Analysis

General Information

Project Name	SR 117 & SR 366 Intersection	Contact Email	Mary.Hoy@dot.ohio.gov
Project Description	Proposed LED signs and Left Turn Lanes	Contact Phone	937-497-6838
Reference Number		Date Performed	5/18/2023
Analyst	MEH	Analysis Year	2045
Agency/Company	ODOT District 7		

Benefit - Cost Calculator

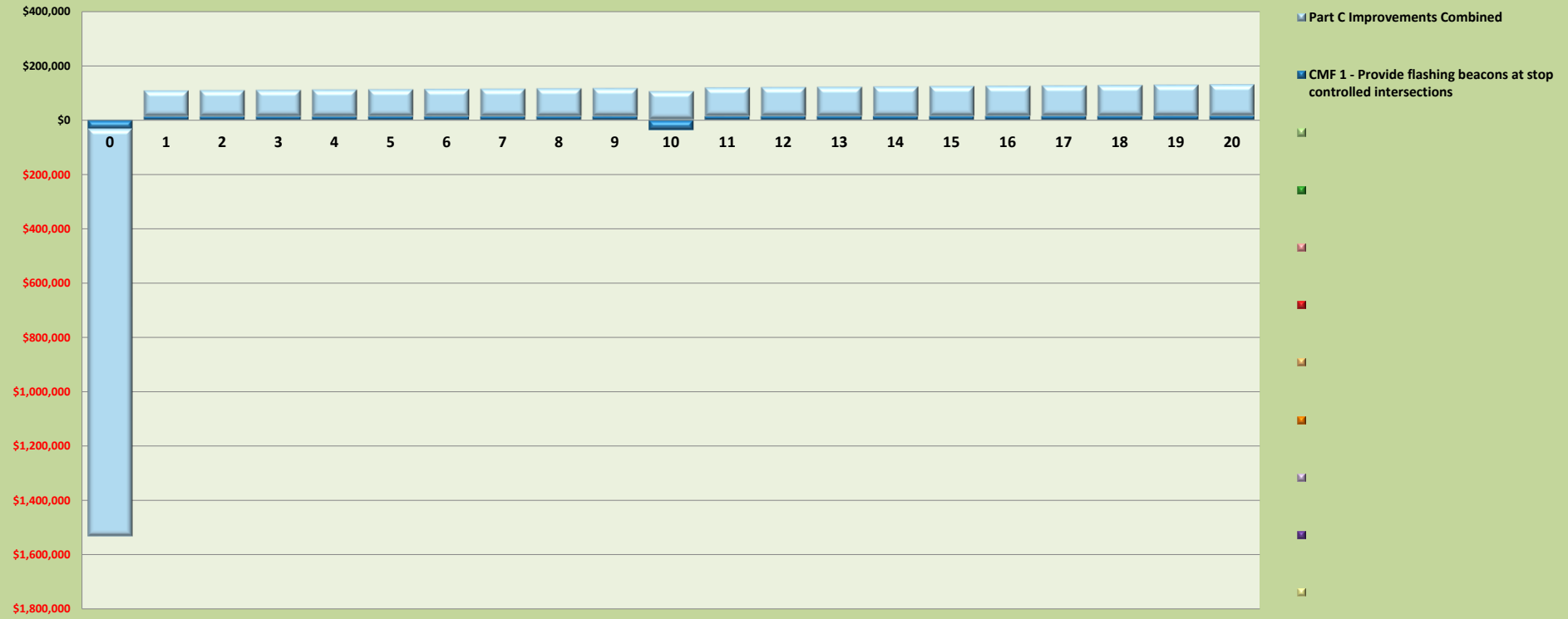
Net Present Value of Project	$1,564,000.00
Net Present Value of Safety Benefits	$1,592,567.79
Net Benefit	$28,567.79
Benefit / Cost Ratio	1.02

Expected Annual Crash Adjustment

Number of Fatal & Incapacitating Injury Crashes	-0.138
Number of Injury Crashes	-0.690
Number of Total Crashes	-1.810

Comments:

Safety Benefits and Project Costs Combined Cash Flows By Countermeasure Per Year

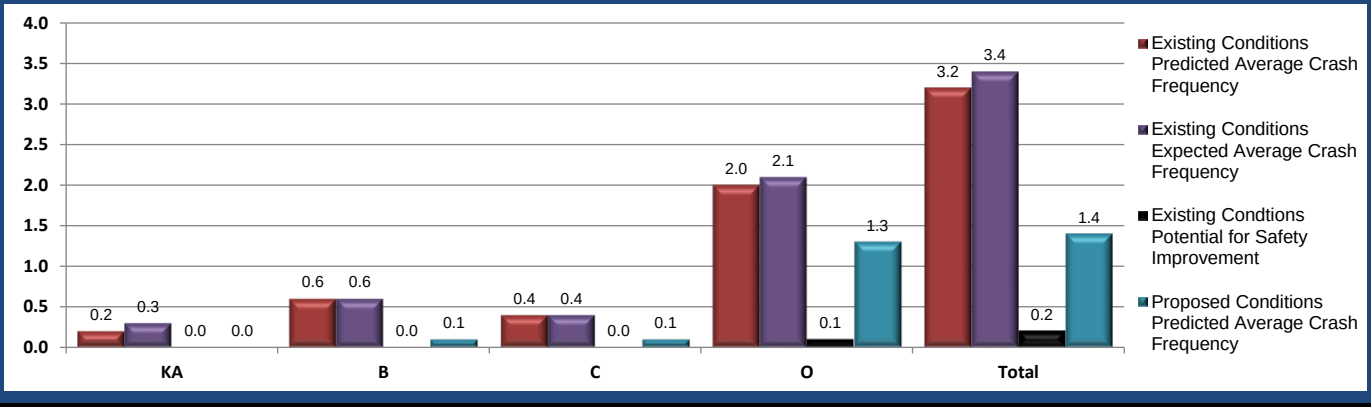


Project Safety Performance Report

General Information

Project Name	SR 117 & SR 366 Intersection	Contact Email	Mary.Hoy@dot.ohio.gov
Project Description	Proposed Condition - Roundabout	Contact Phone	937-497-6838
Reference Number		Date Performed	5/18/2023
Analyst	MEH	Analysis Year	2045
Agency/Company	ODOT District 7		

Summary of Anticipated Safety Performance of the Project (average crashes/year)



Project Summary Results (Without Animal Crashes)

	KA	B	C	O	Total
$N_{predicted}$ - Existing Conditions	0.2350	0.5691	0.3787	2.0366	3.2194
$N_{expected}$ - Existing Conditions	0.2546	0.6172	0.4109	2.1439	3.4266
$N_{potential\ for\ improvement}$ - Existing Conditions	**0.0196**	**0.0481**	**0.0322**	**0.1073**	**0.2072**
$N_{expected}$ - Proposed Conditions	0.0060	0.0510	0.0633	1.2851	1.4054

Existing Conditions Project Element Predicted Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
SR117: 4.865	LOG SR 117 and SR 366	0.235	0.5691	0.3787	2.0366	3.2194

Existing Conditions Project Element Expected Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
SR117: 4.865	LOG SR 117 and SR 366	0.2546	0.6172	0.4109	2.1439	3.4266

Existing Conditions Project Element Potential for Safety Improvement Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
SR117: 4.865	LOG SR 117 and SR 366	**0.0196**	**0.0481**	**0.0322**	**0.1073**	**0.2072**

Proposed Conditions Project Element Predicted Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
SR117: 4.865	LOG SR 117 and SR 366	0.006	0.051	0.0633	1.2851	1.4054

Project Safety Performance Report

General Information

Project Name	SR 117 & SR 366 Intersection	Contact Email	Mary.Hoy@dot.ohio.gov
Project Description	Proposed Condition - Roundabout	Contact Phone	937-497-6838
Reference Number		Date Performed	5/18/2023
Analyst	MEH	Analysis Year	2045
Agency/Company	ODOT District 7		

Summary by Crash Type

Crash Type	Existing			Proposed
	Predicted Crash Frequency	Expected Crash Frequency	PSI	Predicted Crash Frequency
Unknown	0.0126	0.0134	**0.0008**	0.0429
Head On	0.0277	0.0297	**0.0020**	0.0013
Rear End	0.6880	0.7311	**0.0431**	0.2282
Backing	0.1295	0.1365	**0.0070**	0.0139
Sideswipe - Meeting	0.0935	0.0996	**0.0061**	0.0000
Sideswipe - Passing	0.1456	0.1542	**0.0086**	0.4701
Angle	1.2286	1.3123	**0.0837**	0.4223
Parked Vehicle	0.1145	0.1209	**0.0064**	0.0000
Pedestrian	0.0157	0.0170	**0.0013**	0.0013
Animal	0.0000	0.0000	0.0000	0.0152
Train	0.0006	0.0006	0.0000	0.0000
Pedalcycles	0.0118	0.0126	**0.0008**	0.0013
Other Non-Vehicle	0.0002	0.0003	**0.0001**	0.0000
Fixed Object	0.5399	0.5735	**0.0336**	0.1512
Other Object	0.0189	0.0199	**0.0010**	0.0000
Overturning	0.0326	0.0350	**0.0024**	0.0013
Other Non-Collision	0.0427	0.0451	**0.0024**	0.0290
Left Turn	0.1170	0.1249	**0.0079**	0.0328
Right Turn	0.0000	0.0000	0.0000	0.1020

Safety Benefit - Cost Analysis

General Information

Project Name	SR 117 & SR 366 Intersection	Contact Email	Mary.Hoy@dot.ohio.gov
Project Description	Proposed Condition - Roundabout	Contact Phone	937-497-6838
Reference Number		Date Performed	5/18/2023
Analyst	MEH	Analysis Year	2045
Agency/Company	ODOT District 7		

Select Site Types to be used in Benefit-Cost Analysis:

All Sites

Comments:

Countermeasure Service Lives, Costs, and Safety Benefits

Countermeasures	Service Life (Years)	Initial Cost of Countermeasure	Annual Maintenance & Energy Costs	Salvage Value	Net Present Cost of Countermeasure	Total Cost of Countermeasures	Summary of Annual Crash Modifications	Net Present Value of Safety Benefits
Site Characteristic Improvements (Please add description about improvements i.e. Lane widening) - Roundabout	20	$2,500,000.00			$2,500,000.00	$2,500,000.00	-1.814	$2,413,326
Site Characteristic Improvements (Please add description about improvements i.e. Lighting)					$0.00	$0.00		
Site Characteristic Improvements (Please add description about improvements i.e. Signal Phasing)					$0.00	$0.00		
Site Characteristic Improvements (Please add description about improvements i.e. Added Right Turn Lane)					$0.00	$0.00		
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
					$0.00	$0.00	0.000	$0
Totals		**$2,500,000.00**	**$0.00**	**$0.00**	**$2,500,000.00**	**$2,500,000.00**	**-1.814**	**$2,413,326**

Safety Benefit - Cost Analysis

General Information

Project Name	SR 117 & SR 366 Intersection	Contact Email	Mary.Hoy@dot.ohio.gov
Project Description	Proposed Condition - Roundabout	Contact Phone	937-497-6838
Reference Number		Date Performed	5/18/2023
Analyst	MEH	Analysis Year	2045
Agency/Company	ODOT District 7		

Benefit - Cost Calculator

Net Present Value of Project	$2,500,000.00
Net Present Value of Safety Benefits	$2,413,325.63
Net Benefit	($86,674.37)
Benefit / Cost Ratio	0.97

Expected Annual Crash Adjustment

Number of Fatal & Incapacitating Injury Crashes	-0.229
Number of Injury Crashes	-1.063
Number of Total Crashes	-1.814

Comments:

Safety Benefits and Project Costs Combined Cash Flows By Countermeasure Per Year