



Ohio Department of Transportation, District 3

2022-23 Signal Evaluation

LOR SR 82, SLM 3.58

Island Road (CR 58) Intersection

By: Jeremy Adato, P.E.

Date: December 2023



Signal Evaluation Background

The Ohio Manual of Uniform Traffic Control Devices (OMUTCD) requires the operation of existing traffic signals to be analyzed every five years. The following report considers whether an existing signal is still warranted per OMUTCD signal warrants, and if any operational changes are required to ensure the signal is performing well.

Existing Signal

The following features are present at the existing signal constructed in 1999:

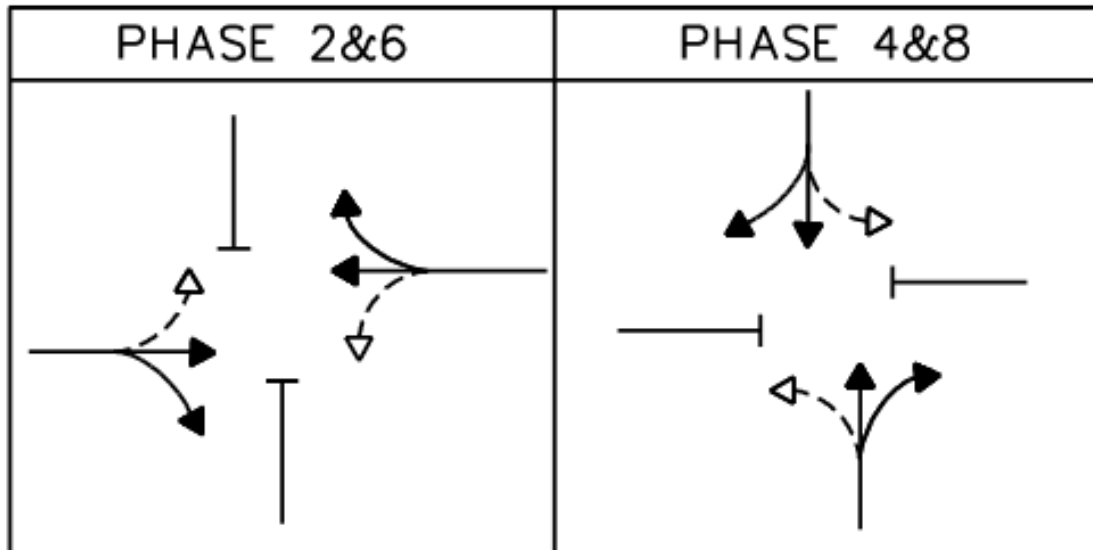
- **Signal Type:** Simple Span.
- **Signal Heads:** (4) 2-Way, 3-Section Signal Heads with Reflective Backplates.
- **Turn Lanes:**
 - **Left Turn Lanes:** Eastbound = 100 ft, Westbound = 150 ft.
- **Detection:** Loops. NB & SB Stop Bar detection, Dilemma Zone detection on all approaches.
- **Timing:** See **Table 1** below.

Table 1 – Traffic Signal Timing

DATE: 9/28/2017 FLASH MODE: ALL RED		OVERLAP				A	B	C	D
		PHASES							
INTERVAL OR FEATURE		CONTROLLER MOVEMENT No.							
		1	2	3	4	5	6	7	8
INTERSECTION MOVEMENT			SR 82 EB		Island Rd SB		SR 82 WB		Island Rd NB
MINIMUM GREEN (INITIAL)	(SEC)		30		12		30		12
PASSAGE TIME (GAP)	(SEC)		3.0		4.0		3.0		4.0
MAXIMUM GREEN	(SEC)		50		30		50		30
YELLOW CHANGE	(SEC)		5.5		5.0		5.5		5.0
ALL RED CLEARANCE	(SEC)		1.0		1.0		1.0		1.0
WALK	(SEC)								
PEDESTRIAN CLEARANCE	(SEC)								
RECALL	MINIMUM	(+/-)	+		-		+		-
	MAXIMUM	(+/-)	-		-		-		-
	PEDESTRIAN	(+/-)	-		-		-		-
NON-LOCK	(+/-)		-		+		-		+
ADDED INITIAL	(SEC)								
MAXIMUM INITIAL	(SEC)								
TIME TO REDUCE	(SEC)								
TIME BEFORE REDUCTION	(SEC)								
MINIMUM GAP	(SEC)								

- Phasing: See **Figure 1** below.

Figure 1 – Phasing Diagram



- Photo: See **Image 1** below for a photograph of the intersection.

Image 1 – LOR 82 & Island Rd Signal from the NW corner on 3/15/2024.



- Speeds: SR 82 EB & WB: 50 mph, Island Rd NB & SB: 40 mph.
- Traffic: Traffic flows well – no major queueing.
- Other Issues: Signal hardware in good condition, detection working, signs and pavement markings in good placement and condition.

Crash Data

Crashes were analyzed at the SR 82 & Island Rd intersection from January 1, 2017, through December 31, 2021. The reported crashes are summarized in **Table 2** below.

Table 2 – Crash Data

YEAR		SEVERITY		TYPE		ROAD CONDITION	
2017	4 (29%)	Fatal	0 (0%)	Rear End	8 (57%)	Dry	10 (71%)
2018	0 (0%)	Injury	6 (43%)	Angle	2 (14%)	Wet	4 (29%)
2019	2 (14%)	PDO	8 (57%)	SS Passing	2 (14%)	Snow	0 (0%)
2020	4 (29%)			Right Turn	1 (7%)	Ice	0 (0%)
2021	4 (29%)			Left Turn	1 (7%)		
TOTAL	14 (100%)						

- (4) – Alcohol/Drugs
- (1) – Speed Related
- (6) – Younger Driver involved (<26 yrs.)
- (2) – Older Driver involved (>64 yrs.)
- (2) – Distracted Driving

Supplemental Evaluations

The following additional studies were performed to ensure safe and efficient operation of the signal:

- 1. Turning Movements:** A traffic count was requested to obtain updated traffic volumes for the intersection. The traffic count was performed on March 16, 2022, between the hours of 6:00 AM – 7:00 PM. The count information can be found in **Table 3** below:

Table 3 – Turning Movement Count

Peak Hour (Start Time)	SR 82 Eastbound				Island Rd Northbound				SR 82 Westbound				Island Rd Southbound				Total
	R	T	L	Tot	R	T	L	Tot	R	T	L	Tot	R	T	L	Tot	
Total Count	479	400	379	1258	368	356	160	4095	166	374	251	791	205	3730	486	4421	10565
AM Peak (7:00)	31	17	28	76	21	262	4	287	17	47	28	92	22	361	53	436	891
PM Peak (4:30)	67	49	40	156	60	524	23	607	15	41	30	86	26	356	51	433	1282

- 2. Signal Warrant:** The signal warrant was analyzed at this intersection to verify if the existing signal should be retained. The OMUTCD Section 4C lists nine warrants for the installation of a signal. Warrants 1–3 (8-Hour Volume, 4-Hour Volume, Peak Hour Volume) were all analyzed based on the Turning Movement Count data. The intersection met the following signal warrants using the 70 percent volumes for signal retention as shown in **Table 4** below:

Table 4 – Signal Warrant

Warrant	Hours Needed	Hours Met	Warrant Met
1 - Eight Hour Vehicular Volumes	-	-	Yes
1A – Minimum Vehicular Volume	8	5	No
1B - Interruption of Continuous Traffic	8	10	Yes
1 A&B - Combination of Warrants	1A 8	9	Yes
	1B 8	13	
2 - Four Hour Volumes	4	8	Yes
3 - Peak Hour Volumes	-	-	Yes

- 3. Clearance Interval Calculation:** Appropriate yellow and all-red clearance intervals are important to safe operation of a signal. Using the clearance interval calculation method provided by the ODOT Office of Traffic Operations, the calculated clearance intervals are shown in **Table 5** below:

Table 5 – Updated Clearance Intervals

INTERVAL OR FEATURE	CONTROLLER MOVEMENT No.							
	1	2	3	4	5	6	7	8
INTERSECTION MOVEMENT		SR 82 EB		Island Rd SB		SR 82 WB		Island Rd NB
YELLOW CHANGE (SEC)		5.5		4.5		5.5		4.5
ALL RED CLEARANCE (SEC)		1		1		1		1
PEDESTRIAN CLEARANCE (SEC)		8.6		12		9.1		12
Min Green + Yellow Change (SEC)		35.5		16.5		35.5		16.5

Minimum Green + Yellow Change exceeds Pedestrian Clearance. So, it is acceptable.

District practice is to round clearance intervals up to the nearest 0.5 seconds.

4. **Capacity Analysis:** Highway Capacity Software (HCS) was used to analyze the Level of Service (LOS) of each approach for existing timing at the intersection. The LOS is based on the calculated seconds of delay for each approach at an intersection using the Highway Capacity Manual (HCM) methodology. The results are summarized in **Table 6** below:

Table 6 – Existing Intersection Level of Service by Approach

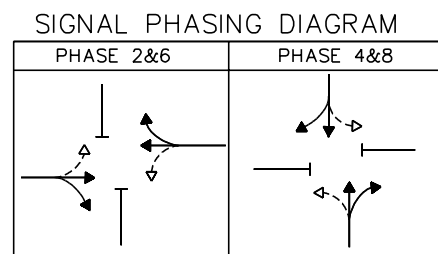
Existing Delay s/veh and (LOS)	Intersection Approach				Intersection Combined Delay
	SR 82		Island Rd		
Period	EB	WB	NB	SB	
AM Peak	5.3 (A)	4.7 (A)	6.5 (A)	6.4 (A)	5.3 (A)
PM Peak	4.9 (A)	5.4 (A)	8.5 (A)	9.0 (A)	5.9 (A)

Signal Evaluation Recommendations

- Update vehicle detection on all approaches to radar detection.

REF.	QTY	UNITS	DESCRIPTION
6	625	560 LF	CONDUIT, 1", 713.04
8	625	700 LF	CONDUIT, 2", 713.04
10	625	473 LF	CONDUIT, JACKED OR DRILLED UNDER PVM'T 2"
12	625	714 LF	TRENCH, APP
15	625	16 EA.	PULL BOX, 713.08, 18"
18	632	2 EA.	GROUND ROD, APP
29	632	4 EA.	VEHICULAR SIGNAL HEAD, 3 SEC. 12" LENS 2 WAY
34	632	4 EA.	COVERING OF VEHICULAR SIGNAL HEAD
36	632	6 EA.	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, APP
38	632	129 LF	MESSANGER WIRE, 7 STRAND, 3/8 " DIAMETER WITH ACCESSORIES
40	632	424 LF	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG
45	632	390 LF	LOOP LEAD-IN CABLE W/ INTEG. MESS.
46	632	1620 LF	LOOP DETECTOR LEAD-IN CABLE, 2 CONDUCTOR, NO. 14 AWG
47	632	15 LF	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG
48	632	35 LF	POWER CABLE, 3 CONDUCTOR NO. 6 AWG
50	632	1 EA.	POWER SERVICE, APP
51	632	1 EA.	CONDUIT RISER, 1"DIAMETER
56	632	2 EA.	STRAIN POLE, TYPE TC-81.10, DESIGN 10, 32'
67	632	1 EA.	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, APP
69	632	1 EA.	SIGNALIZATION, : METER BASE, 100 AMP WITH BYPASS
74	632	372 LF	SIGNALIZATION, MISC.: LOOP DETECTOR PAVEMENT CUTTING, APP
76	632	1847 LF	SIGNALIZATION, MISC.: LOOP DETECTOR WIRE, TYPE E, APP
82	633	1 EA.	CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE DIGITAL MICROPROCESSOR, APP WITH INTERNAL TIME BASE CORD.
88	633	10.4 SF	CONTROLLER WORK PAD (30"x50")

LOOP DETECTOR CHART						
LOOP	SIZE (FT.)	NO. OF TURNS	MODE	DELAY (SEC.)	CONNECT TO DETECTOR UNIT	ASSOCIATED CONTROLLER PHASE
L-1	5X5	4	PULSE		1	2
L-2	5X5	3	PULSE		1	2
L-3	5X5	3	PULSE		2	6
L-4	5X5	3	PULSE		2	6
L-5	5X5	3	PULSE	3	3	8
L-6	6X20	2	PRESENCE	8	4	8
L-7	6X10X15	2	PRESENCE	8	4	8
L-8	6X10X15	3	PRESENCE	8	5	4
L-9	6X20	3	PRESENCE	8	5	4
L-10	5X5	3	PULSE	3	6	4
L-11	5X5	3	PULSE	3	6	4



PHASING IDENTIFICATION

NOT USED PHASE 1		NOT USED PHASE 3	
NOT USED PHASE 5		NOT USED PHASE 7	

DESIGN FILE: I:\FIELDINV\ELECTRICAL\SIGNAL\DWG\L82isInd.dwg
WORKSTATION: roney DATE: 7/9/2010

TRAFFIC SIGNAL TIMING (In Seconds)								
LOCATION: SR82 / ISLAND RD.								
DATE: 9/28/2017								
PERSONEL: BP, JC								
INTERVAL	PHASE NUMBER							
	1	2	3	4	5	6	7	8
	N/A	EB SR 82	N/A	SB ISLAND RD.	N/A	WB SR 82	N/A	NB ISLAND RD.
MINIMUM GREEN		30		12		30		12
PASSAGE TIME		3.0		4.0		3.0		4.0
YELLOW CLEARANCE		5.5		5		5.5		5
RED CLEARANCE		1.0		1		1.0		1
MAX GREEN 1		50		30		50		30
MAX GREEN 2		50		30		50		30
MAX GREEN 3		0		0		0		0
WALK		0		0		0		0
DON'T WALK		0		0		0		0
MINIMUM RECALL		+		-		+		-
MAXIMUM RECALL		-		-		-		-
NON-LOCK		-		+		-		+
ADDED INITIAL (Sec./act.)		0		0		0		0
MAXIMUM INITIAL		0		0		0		0
TIME TO REDUCE		0		0		0		0
TIME BEFORE REDUCTION		0		0		0		0
MINIMUM GAP		0		0		0		0
NOTES: Changes in red made 09/28/17 by RJ/BG per Anthony Deprator W/O 2017-043. Minimum green on phases 2, 6, reduced from 30 to 20, 05/15/2018 KC per Scott Ockunzzi WO2018-051.								
N/A = Not Applicable or Not Used. (+) = Yes or On. (-) = No or Off								

CRASH DIAGRAM

LOR SR 82
Island Road
Date: 1/1/17-12/31/2021

Crashes By Year

2017: 4
 2018: 0
 2019: 2
 2020: 4
 2021: 4
Total: 14

Crashes By Severity

Fatal: 0
Injury: 6
PDO: 8

SR 82

Crashes By Road Condition

Dry: 10
 Snow/Ice: 0
 Wet: 4

NOTES

- 8 (57%) were Rear End crashes
- 2 (14%) were Angle crashes
- 2 (14%) were Sideswipe - Passing crashes
- 1 (7%) was a Right Turn crash
- 1 (7%) was a Left Turn crash

Diagram Label Key

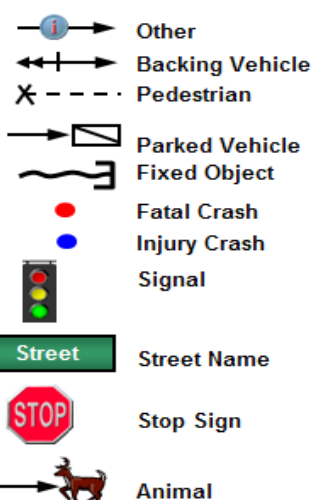
Date/Hour/Road Condition

D = Dry W = Wet S = Snow I = Ice
 (D) = Distracted (A) = Alcohol/Drugs

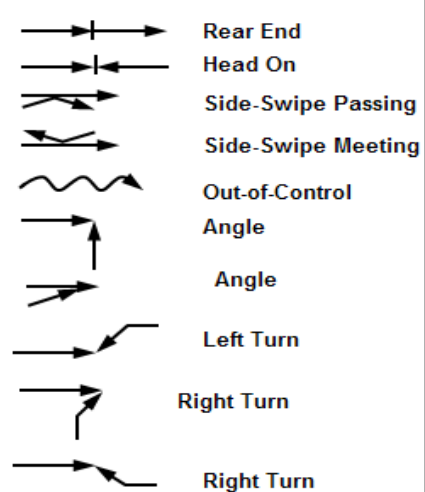
By: SMH

Legend:

Symbols



Types of Collisions



Island Road

12-17-20/14/Wet
 05-17-21/17/Dry

06-19-17/7/Dry (D)
 11-25-17/13/Dry
 12-21-17/19/Dry (A)
 07-26-19/22/Dry
 06-15-20/15/Dry
 11-16-20/16/Dry

09-13-19/14/Dry

04-09-20/5/Wet (A)

12-16-21/17/Dry (A)(D)

03-07-17/16/Wet (A)(D)
 11-02-21/14/Dry

10-08-21/19/Wet



Ohio DOT - Traffic Operations
1606 West Broad Street

Columbus, Ohio, United States 43223
+16144667170 D03trafficcunts@dot.ohio.gov

Count Name: LOR-82-3.58 (3-25-22)
Site Code:
Start Date: 03/16/2022
Page No: 1

Turning Movement Data

Start Time	Southbound Approach					Westbound Approach					Northbound Approach					Eastbound Approach					Int. Total
	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	
6:00 AM	7	4	0	0	11	5	20	1	0	26	3	8	0	0	11	2	33	7	0	42	90
6:15 AM	3	3	6	0	12	3	25	2	0	30	2	9	3	0	14	1	70	12	0	83	139
6:30 AM	6	7	9	0	22	5	53	1	0	59	7	9	4	0	20	3	87	10	0	100	201
6:45 AM	5	3	7	0	15	6	51	1	0	58	5	7	2	0	14	5	74	9	0	88	175
Hourly Total	21	17	22	0	60	19	149	5	0	173	17	33	9	0	59	11	264	38	0	313	605
7:00 AM	4	2	4	0	10	2	48	2	0	52	1	8	5	0	14	2	86	13	0	101	177
7:15 AM	9	7	6	0	22	4	71	2	0	77	7	10	7	0	24	10	87	14	0	111	234
7:30 AM	9	6	11	0	26	9	76	0	0	85	6	12	9	0	27	8	89	11	0	108	246
7:45 AM	9	2	7	0	18	6	67	0	0	73	3	17	7	0	27	2	99	15	0	116	234
Hourly Total	31	17	28	0	76	21	262	4	0	287	17	47	28	0	92	22	361	53	0	436	891
8:00 AM	7	3	2	0	12	5	50	1	0	56	6	12	6	0	24	0	72	7	0	79	171
8:15 AM	10	4	2	0	16	9	51	2	0	62	5	10	3	0	18	2	71	8	0	81	177
8:30 AM	9	7	2	0	18	8	43	1	0	52	0	8	3	0	11	2	75	10	0	87	168
8:45 AM	3	2	3	0	8	3	45	0	0	48	3	4	0	0	7	4	56	5	0	65	128
Hourly Total	29	16	9	0	54	25	189	4	0	218	14	34	12	0	60	8	274	30	0	312	644
9:00 AM	4	5	7	0	16	4	34	2	0	40	3	6	4	0	13	3	59	4	0	66	135
9:15 AM	3	2	6	0	11	1	47	5	0	53	5	7	5	0	17	3	57	7	0	67	148
9:30 AM	1	4	2	0	7	2	51	1	0	54	1	6	3	0	10	3	48	6	0	57	128
9:45 AM	10	5	8	0	23	4	44	2	0	50	4	5	1	0	10	4	55	7	0	66	149
Hourly Total	18	16	23	0	57	11	176	10	0	197	13	24	13	0	50	13	219	24	0	256	560
10:00 AM	6	4	7	0	17	3	43	2	0	48	4	4	1	0	9	1	53	2	0	56	130
10:15 AM	7	6	8	0	21	4	45	3	0	52	3	5	2	0	10	1	63	5	0	69	152
10:30 AM	8	4	7	0	19	6	63	3	0	72	4	2	4	0	10	3	65	14	0	82	183
10:45 AM	11	4	4	0	19	3	44	3	0	50	1	5	4	0	10	1	59	7	0	67	146
Hourly Total	32	18	26	0	76	16	195	11	0	222	12	16	11	0	39	6	240	28	0	274	611
11:00 AM	13	5	7	0	25	4	55	3	0	62	1	1	3	0	5	4	57	5	0	66	158
11:15 AM	3	4	4	0	11	8	49	3	0	60	2	8	3	0	13	4	63	2	0	69	153
11:30 AM	8	2	3	0	13	3	45	4	0	52	1	0	4	0	5	3	74	9	0	86	156
11:45 AM	5	9	12	0	26	7	47	3	0	57	2	6	5	0	13	3	62	10	0	75	171
Hourly Total	29	20	26	0	75	22	196	13	0	231	6	15	15	0	36	14	256	26	0	296	638
12:00 PM	7	4	7	0	18	9	68	8	0	85	6	4	4	0	14	6	55	10	0	71	188
12:15 PM	9	4	9	0	22	1	67	4	0	72	3	9	6	0	18	4	81	6	0	91	203
12:30 PM	11	13	4	0	28	6	57	4	0	67	3	8	3	0	14	4	67	8	0	79	188
12:45 PM	9	1	9	0	19	7	50	4	0	61	8	5	7	0	20	5	65	10	0	80	180
Hourly Total	36	22	29	0	87	23	242	20	0	285	20	26	20	0	66	19	268	34	0	321	759
1:00 PM	3	8	10	0	21	7	60	1	0	68	2	4	3	0	9	2	64	6	0	72	170

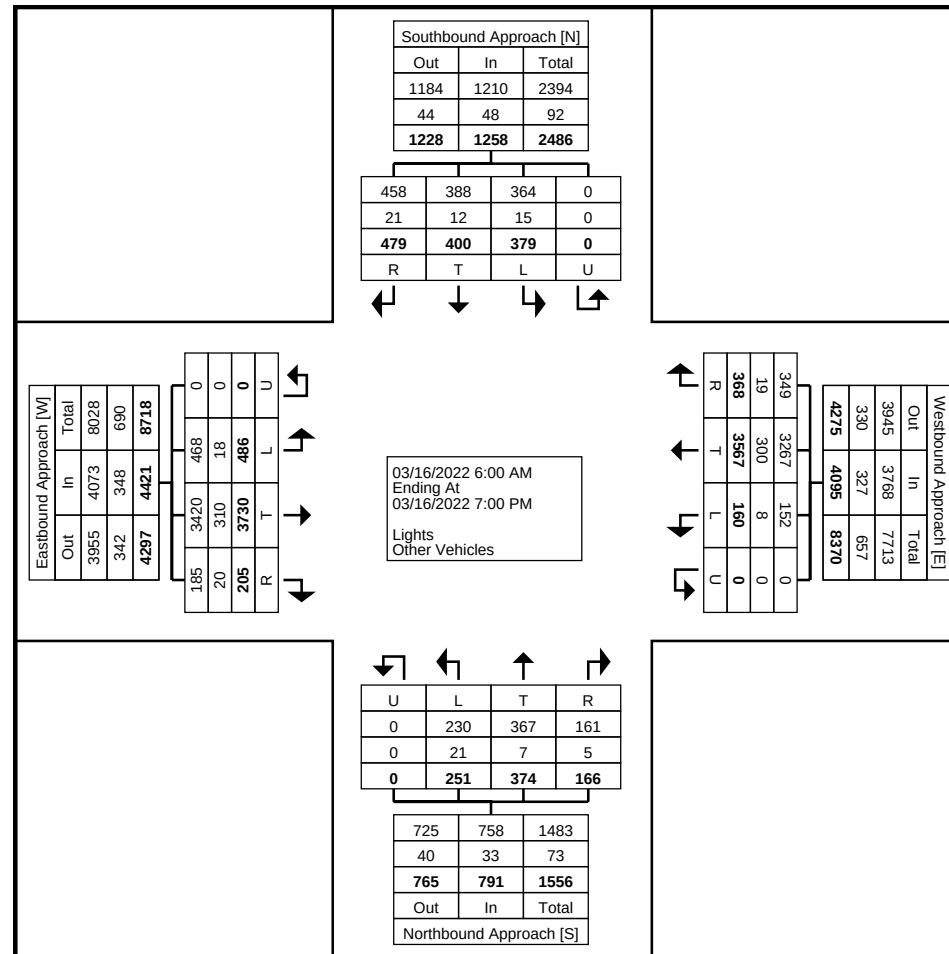
1:15 PM	11	5	5	0	21	2	69	2	0	73	2	10	3	0	15	2	59	4	0	65	174
1:30 PM	13	8	5	0	26	8	71	3	0	82	3	9	4	0	16	2	56	6	0	64	188
1:45 PM	9	11	11	0	31	7	57	1	0	65	2	6	5	0	13	1	86	6	0	93	202
Hourly Total	36	32	31	0	99	24	257	7	0	288	9	29	15	0	53	7	265	22	0	294	734
2:00 PM	6	8	6	0	20	8	61	1	0	70	3	8	5	0	16	1	77	12	0	90	196
2:15 PM	13	12	13	0	38	6	87	5	0	98	3	4	4	0	11	3	60	9	0	72	219
2:30 PM	9	12	7	0	28	10	91	3	0	104	1	5	5	0	11	5	90	13	0	108	251
2:45 PM	14	12	11	0	37	7	78	4	0	89	4	8	8	0	20	11	86	11	0	108	254
Hourly Total	42	44	37	0	123	31	317	13	0	361	11	25	22	0	58	20	313	45	0	378	920
3:00 PM	10	16	9	0	35	16	101	6	0	123	4	7	4	0	15	9	94	7	0	110	283
3:15 PM	11	10	5	0	26	5	94	4	0	103	1	13	8	0	22	6	72	5	0	83	234
3:30 PM	13	12	15	0	40	6	107	3	0	116	1	4	4	0	9	7	85	15	0	107	272
3:45 PM	13	15	7	0	35	10	138	4	0	152	3	6	6	0	15	7	82	11	0	100	302
Hourly Total	47	53	36	0	136	37	440	17	0	494	9	30	22	0	61	29	333	38	0	400	1091
4:00 PM	7	13	14	0	34	11	96	6	0	113	3	13	9	0	25	4	73	11	0	88	260
4:15 PM	17	15	8	0	40	10	113	4	0	127	3	10	8	0	21	10	104	13	0	127	315
4:30 PM	18	13	10	0	41	16	131	7	0	154	2	11	10	0	23	7	86	15	0	108	326
4:45 PM	16	13	10	0	39	11	145	5	0	161	2	10	5	0	17	9	91	13	0	113	330
Hourly Total	58	54	42	0	154	48	485	22	0	555	10	44	32	0	86	30	354	52	0	436	1231
5:00 PM	14	11	6	0	31	15	126	7	0	148	6	12	8	0	26	6	73	14	0	93	298
5:15 PM	19	12	14	0	45	18	122	4	0	144	5	8	7	0	20	4	106	9	0	119	328
5:30 PM	10	15	7	0	32	9	89	5	0	103	1	7	12	0	20	4	89	12	0	105	260
5:45 PM	13	14	12	0	39	9	66	5	0	80	2	5	5	0	12	5	66	11	0	82	213
Hourly Total	56	52	39	0	147	51	403	21	0	475	14	32	32	0	78	19	334	46	0	399	1099
6:00 PM	12	11	9	0	32	14	80	4	0	98	3	6	7	0	16	2	78	20	0	100	246
6:15 PM	9	13	8	0	30	5	70	5	0	80	4	5	6	0	15	3	43	15	0	61	186
6:30 PM	10	8	7	0	25	10	56	2	0	68	4	4	4	0	12	2	72	6	0	80	185
6:45 PM	13	7	7	0	27	11	50	2	0	63	3	4	3	0	10	0	56	9	0	65	165
Hourly Total	44	39	31	0	114	40	256	13	0	309	14	19	20	0	53	7	249	50	0	306	782
Grand Total	479	400	379	0	1258	368	3567	160	0	4095	166	374	251	0	791	205	3730	486	0	4421	10565
Approach %	38.1	31.8	30.1	0.0	-	9.0	87.1	3.9	0.0	-	21.0	47.3	31.7	0.0	-	4.6	84.4	11.0	0.0	-	-
Total %	4.5	3.8	3.6	0.0	11.9	3.5	33.8	1.5	0.0	38.8	1.6	3.5	2.4	0.0	7.5	1.9	35.3	4.6	0.0	41.8	-
Lights	458	388	364	0	1210	349	3267	152	0	3768	161	367	230	0	758	185	3420	468	0	4073	9809
% Lights	95.6	97.0	96.0	-	96.2	94.8	91.6	95.0	-	92.0	97.0	98.1	91.6	-	95.8	90.2	91.7	96.3	-	92.1	92.8
Other Vehicles	21	12	15	0	48	19	300	8	0	327	5	7	21	0	33	20	310	18	0	348	756
% Other Vehicles	4.4	3.0	4.0	-	3.8	5.2	8.4	5.0	-	8.0	3.0	1.9	8.4	-	4.2	9.8	8.3	3.7	-	7.9	7.2



Ohio DOT - Traffic Operations
1606 West Broad Street

Columbus, Ohio, United States 43223
+16144667170 D03trafficcunts@dot.ohio.gov

Count Name: LOR-82-3.58 (3-25-22)
Site Code:
Start Date: 03/16/2022
Page No: 3



Turning Movement Data Plot



Ohio DOT - Traffic Operations
1606 West Broad Street

Columbus, Ohio, United States 43223
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Count Name: LOR-82-3.58 (3-25-22)
Site Code:
Start Date: 03/16/2022
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Turning Movement Peak Hour Data (7:00 AM)

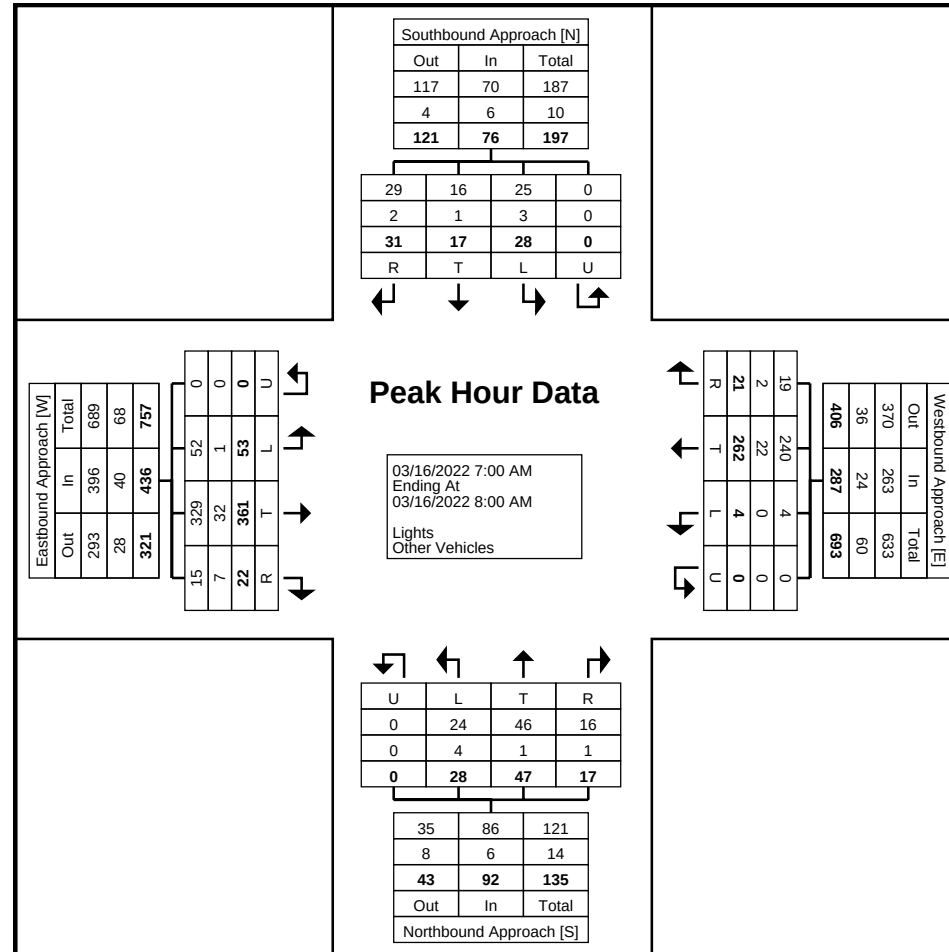
Start Time	Southbound Approach Southbound					Westbound Approach Westbound					Northbound Approach Northbound					Eastbound Approach Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
7:00 AM	4	2	4	0	10	2	48	2	0	52	1	8	5	0	14	2	86	13	0	101	177
7:15 AM	9	7	6	0	22	4	71	2	0	77	7	10	7	0	24	10	87	14	0	111	234
7:30 AM	9	6	11	0	26	9	76	0	0	85	6	12	9	0	27	8	89	11	0	108	246
7:45 AM	9	2	7	0	18	6	67	0	0	73	3	17	7	0	27	2	99	15	0	116	234
Total	31	17	28	0	76	21	262	4	0	287	17	47	28	0	92	22	361	53	0	436	891
Approach %	40.8	22.4	36.8	0.0	-	7.3	91.3	1.4	0.0	-	18.5	51.1	30.4	0.0	-	5.0	82.8	12.2	0.0	-	-
Total %	3.5	1.9	3.1	0.0	8.5	2.4	29.4	0.4	0.0	32.2	1.9	5.3	3.1	0.0	10.3	2.5	40.5	5.9	0.0	48.9	-
PHF	0.861	0.607	0.636	0.000	0.731	0.583	0.862	0.500	0.000	0.844	0.607	0.691	0.778	0.000	0.852	0.550	0.912	0.883	0.000	0.940	0.905
Lights	29	16	25	0	70	19	240	4	0	263	16	46	24	0	86	15	329	52	0	396	815
% Lights	93.5	94.1	89.3	-	92.1	90.5	91.6	100.0	-	91.6	94.1	97.9	85.7	-	93.5	68.2	91.1	98.1	-	90.8	91.5
Other Vehicles	2	1	3	0	6	2	22	0	0	24	1	1	4	0	6	7	32	1	0	40	76
% Other Vehicles	6.5	5.9	10.7	-	7.9	9.5	8.4	0.0	-	8.4	5.9	2.1	14.3	-	6.5	31.8	8.9	1.9	-	9.2	8.5



Ohio DOT - Traffic Operations
1606 West Broad Street

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Count Name: LOR-82-3.58 (3-25-22)
Site Code:
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Turning Movement Peak Hour Data Plot (7:00 AM)



Ohio DOT - Traffic Operations
1606 West Broad Street

Columbus, Ohio, United States 43223
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Count Name: LOR-82-3.58 (3-25-22)
Site Code:
Start Date: 03/16/2022
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Turning Movement Peak Hour Data (4:30 PM)

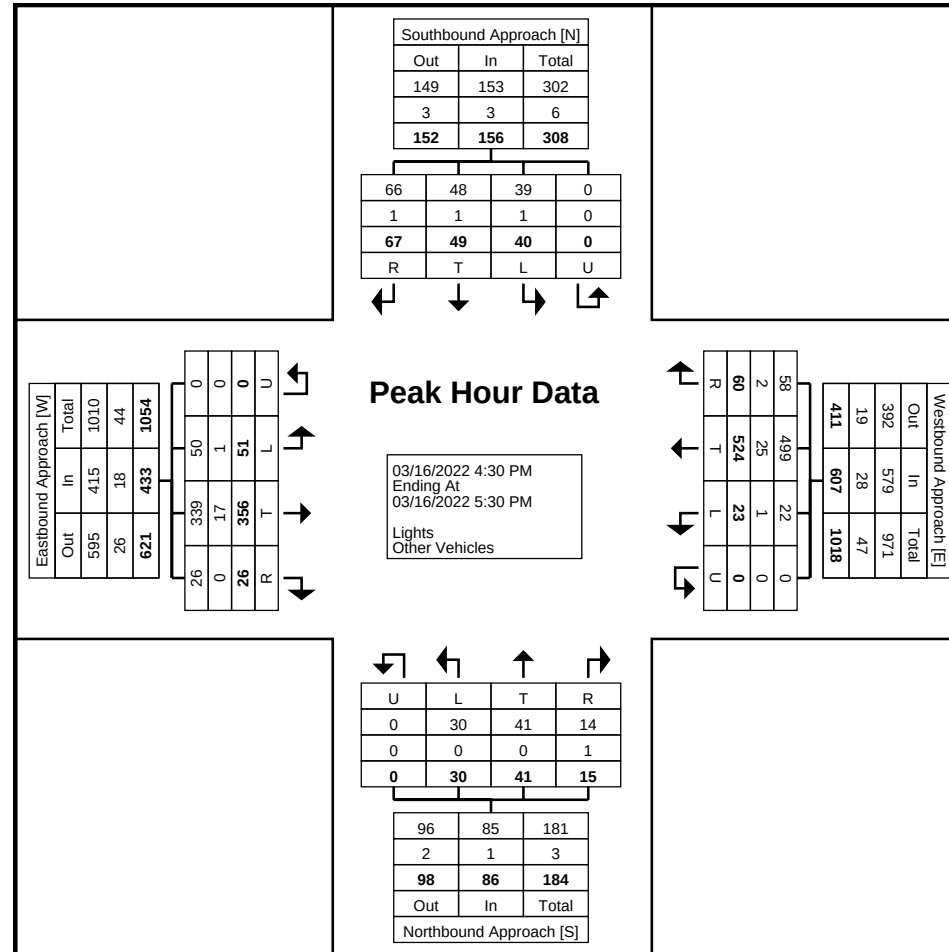
Start Time	Southbound Approach Southbound					Westbound Approach Westbound					Northbound Approach Northbound					Eastbound Approach Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
4:30 PM	18	13	10	0	41	16	131	7	0	154	2	11	10	0	23	7	86	15	0	108	326
4:45 PM	16	13	10	0	39	11	145	5	0	161	2	10	5	0	17	9	91	13	0	113	330
5:00 PM	14	11	6	0	31	15	126	7	0	148	6	12	8	0	26	6	73	14	0	93	298
5:15 PM	19	12	14	0	45	18	122	4	0	144	5	8	7	0	20	4	106	9	0	119	328
Total	67	49	40	0	156	60	524	23	0	607	15	41	30	0	86	26	356	51	0	433	1282
Approach %	42.9	31.4	25.6	0.0	-	9.9	86.3	3.8	0.0	-	17.4	47.7	34.9	0.0	-	6.0	82.2	11.8	0.0	-	-
Total %	5.2	3.8	3.1	0.0	12.2	4.7	40.9	1.8	0.0	47.3	1.2	3.2	2.3	0.0	6.7	2.0	27.8	4.0	0.0	33.8	-
PHF	0.882	0.942	0.714	0.000	0.867	0.833	0.903	0.821	0.000	0.943	0.625	0.854	0.750	0.000	0.827	0.722	0.840	0.850	0.000	0.910	0.971
Lights	66	48	39	0	153	58	499	22	0	579	14	41	30	0	85	26	339	50	0	415	1232
% Lights	98.5	98.0	97.5	-	98.1	96.7	95.2	95.7	-	95.4	93.3	100.0	100.0	-	98.8	100.0	95.2	98.0	-	95.8	96.1
Other Vehicles	1	1	1	0	3	2	25	1	0	28	1	0	0	0	1	0	17	1	0	18	50
% Other Vehicles	1.5	2.0	2.5	-	1.9	3.3	4.8	4.3	-	4.6	6.7	0.0	0.0	-	1.2	0.0	4.8	2.0	-	4.2	3.9



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Count Name: LOR-82-3.58 (3-25-22)
Site Code:
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LOR-82-3.58 (Island Rd)

2022 Signal Evaluation

Study Name: LOR-82-3.58 (Island Rd) Warrants PC2

Study Date : 2/14/2024

Signal Warrants - Summary

Major Street Approaches

Eastbound: LOR 82 EB

Number of Lanes : 1

Total Approach Volume: 4,421

Westbound: LOR 82 WB

Number of Lanes :1

Total Approach Volume: 4,095

Minor Street Approaches

Northbound: Island Rd NB

Number of Lanes :1

Total Approach Volume: 791

Southbound: Island Rd SB

Number of Lanes :1

Total Approach Volume: 1,258

Warrant Summary (Rural Values Apply)

Warrant 1 - Eight Hour Vehicular Volumes.....Satisfied

Warrant 1A - Minimum Vehicular Volume.....Not Satisfied

Required volumes reached for 5 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic.....Satisfied

Required volumes reached for 10 hours, 8 are needed

Warrant 1C - Combination of Warrants.....Satisfied

Required 1A volumes reached for 9 hours, 8 are needed

Required 1B volumes reached for 13 hours, 8 are needed

Warrant 2 - Four Hour Volumes.....Satisfied

Number of hours (8) volumes exceed minimum >= minimum required (4).

Warrant 3 - Peak Hour.....Satisfied

Warrant 3A - Peak Hour Delay.....Satisfied

Number of one hour periods (19) volumes exceed minimum >= required (1). Delay data not evaluated.

Warrant 3B - Peak Hour Volumes.....Satisfied

Volumes exceed minimums for at least one hour period.

Warrant 4 - Pedestrian Volumes.....Not Evaluated

Warrant 5 - School Crossing.....Not Evaluated

Warrant 6 - Coordinated Signal System.....Not Evaluated

Warrant 7 - Crash Experience.....Not Evaluated

Warrant 8 - Roadway Network.....Not Evaluated

Warrant 9 - Intersection Near a Grade Crossing.....Not Evaluated

LOR-82-3.58 (Island Rd)

2022 Signal Evaluation

Study Name: LOR-82-3.58 (Island Rd) Warrants PC2

Study Date : 2/14/2024

Warrant 1A - Minimum Volumes

Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

Summary

Only 5 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **1**
Number of Minor Lanes = **1**

Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **350**

Veh/Hr Minor = **105**

Major Road LOR 82 EB						Minor Road Island Rd NB		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:30 - 17:30	433	+	607	=	1040	86	156	Yes
15:30 - 16:30	422	+	508	=	930	70	149	Yes
14:30 - 15:30	409	+	419	=	828	68	126	Yes
17:30 - 18:30	348	+	361	=	709	63	133	Yes
13:30 - 14:30	319	+	315	=	634	56	115	Yes
07:00 - 08:00	436	+	287	=	723	92	76	No
07:15 - 08:15	414	+	291	=	705	102	78	No
06:45 - 07:45	408	+	272	=	680	79	73	No
07:30 - 08:30	384	+	276	=	660	96	72	No
06:30 - 07:30	400	+	246	=	646	72	69	No
07:45 - 08:45	363	+	243	=	606	80	64	No
12:00 - 13:00	321	+	285	=	606	66	87	No
13:15 - 14:15	312	+	290	=	602	60	98	No
11:45 - 12:45	316	+	281	=	597	59	94	No
12:15 - 13:15	322	+	268	=	590	61	90	No
11:30 - 12:30	323	+	266	=	589	50	79	No
13:00 - 14:00	294	+	288	=	582	53	99	No
06:15 - 07:15	372	+	199	=	571	62	59	No
12:30 - 13:30	296	+	269	=	565	58	89	No
12:45 - 13:45	281	+	284	=	565	60	87	No
11:15 - 12:15	301	+	254	=	555	45	68	No
08:00 - 09:00	312	+	218	=	530	60	54	No
10:30 - 11:30	284	+	244	=	528	38	74	No
11:00 - 12:00	296	+	231	=	527	36	75	No
10:15 - 11:15	284		236		520	35	84	No

LOR-82-3.58 (Island Rd)

2022 Signal Evaluation

Study Name: LOR-82-3.58 (Island Rd) Warrants PC2

Study Date : 2/14/2024

Warrant 1B - Interruption of Continuous Traffic

Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

Summary

10 one hour periods meet minimums.
Warrant IS met.

Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **1**
Number of Minor Lanes = **1**

Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **525**

Veh/Hr Minor = **52**

Major Road						Minor Road		
LOR 82 EB						Island Rd NB		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:30 - 17:30	433	+	607	=	1040	86	156	Yes
15:30 - 16:30	422	+	508	=	930	70	149	Yes
14:30 - 15:30	409	+	419	=	828	68	126	Yes
17:30 - 18:30	348	+	361	=	709	63	133	Yes
07:15 - 08:15	414	+	291	=	705	102	78	Yes
13:30 - 14:30	319	+	315	=	634	56	115	Yes
11:30 - 12:30	323	+	266	=	589	50	79	Yes
06:15 - 07:15	372	+	199	=	571	62	59	Yes
12:30 - 13:30	296	+	269	=	565	58	89	Yes
10:30 - 11:30	284	+	244	=	528	38	74	Yes
10:15 - 11:15	284	+	236	=	520	35	84	No
08:15 - 09:15	299	+	202	=	501	49	58	No
10:00 - 11:00	274	+	222	=	496	39	76	No
09:45 - 10:45	273	+	222	=	495	39	80	No
06:00 - 07:00	313	+	173	=	486	59	60	No
08:30 - 09:30	285	+	193	=	478	48	53	No
09:00 - 10:00	256	+	197	=	453	50	57	No
09:30 - 10:30	248	+	204	=	452	39	68	No
09:15 - 10:15	246	+	205	=	451	46	58	No
08:45 - 09:45	255	+	195	=	450	47	42	No
05:45 - 06:45	225	+	115	=	340	45	45	No
18:30 - 19:30	145	+	131	=	276	22	52	No
05:30 - 06:30	125	+	56	=	181	25	23	No
18:45 - 19:45	65	+	63	=	128	10	27	No
05:15 - 06:15	42		26		68	11	11	No

LOR-82-3.58 (Island Rd)

2022 Signal Evaluation

Study Name: LOR-82-3.58 (Island Rd) Warrants PC2

Study Date : 2/14/2024

Warrant 1C Combination of Warrants

Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

Summary

9 hours meet 1A minimums.
13 hours meet 1B minimums.
Warrant IS met.

Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **1**
Number of Minor Lanes = **1**

Volume Requirements

Rural Factor of 70% applied
Warrant 1A 1B
Veh/Hr Major = **280 420**

Veh/Hr Minor = **84 42**

Major Road LOR 82 EB						Minor Road Island Rd NB		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1A?
16:45 - 17:45	430	+	556	=	986	83	147	Yes
15:45 - 16:45	423	+	546	=	969	84	150	Yes
14:45 - 15:45	408	+	431	=	839	66	138	Yes
07:00 - 08:00	436	+	287	=	723	92	76	Yes
13:45 - 14:45	363	+	337	=	700	51	117	Yes
17:45 - 18:45	323	+	326	=	649	55	126	Yes
11:45 - 12:45	316	+	281	=	597	59	94	Yes
12:45 - 13:45	281	+	284	=	565	60	87	Yes
10:15 - 11:15	284	+	236	=	520	35	84	Yes
06:45 - 07:45	408	+	272	=	680	79	73	No
06:30 - 07:30	400	+	246	=	646	72	69	No
11:30 - 12:30	323	+	266	=	589	50	79	No

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1B?
16:00 - 17:00	436	+	555	=	991	86	154	Yes
15:00 - 16:00	400	+	494	=	894	61	136	Yes
17:00 - 18:00	399	+	475	=	874	78	147	Yes
14:00 - 15:00	378	+	361	=	739	58	123	Yes
07:00 - 08:00	436	+	287	=	723	92	76	Yes
18:00 - 19:00	306	+	309	=	615	53	114	Yes
12:00 - 13:00	321	+	285	=	606	66	87	Yes
13:00 - 14:00	294	+	288	=	582	53	99	Yes
08:00 - 09:00	312	+	218	=	530	60	54	Yes
11:00 - 12:00	296	+	231	=	527	36	75	Yes
10:00 - 11:00	274	+	222	=	496	39	76	Yes
06:00 - 07:00	313	+	173	=	486	59	60	Yes

LOR-82-3.58 (Island Rd)

2022 Signal Evaluation

Study Name: LOR-82-3.58 (Island Rd) Warrants PC2

Study Date : 2/14/2024

Warrant 2 - Four Hour Volumes

Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

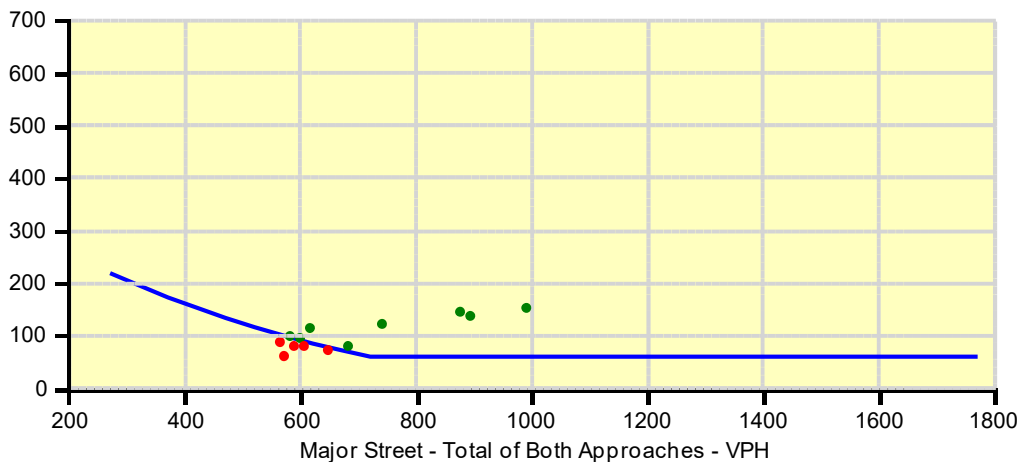
Summary

8 one hour periods meet minimums.
Warrant IS met.

Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **1**
Number of Minor Lanes = **1**

Major Road LOR 82 EB						Minor Road Island Rd NB		Met?
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	
16:00 - 17:00	436	+	555	=	991	86	154	Yes
15:00 - 16:00	400	+	494	=	894	61	136	Yes
17:00 - 18:00	399	+	475	=	874	78	147	Yes
14:00 - 15:00	378	+	361	=	739	58	123	Yes
06:45 - 07:45	408	+	272	=	680	79	73	Yes
18:00 - 19:00	306	+	309	=	615	53	114	Yes
11:45 - 12:45	316	+	281	=	597	59	94	Yes
13:00 - 14:00	294	+	288	=	582	53	99	Yes
06:30 - 07:30	400	+	246	=	646	72	69	No
07:45 - 08:45	363	+	243	=	606	80	64	No
11:30 - 12:30	323	+	266	=	589	50	79	No
							59	No



LOR-82-3.58 (Island Rd)

2022 Signal Evaluation

Study Name: LOR-82-3.58 (Island Rd) Warrants PC2

Study Date : 2/14/2024

Warrant 3A - Peak Hour Delay

Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

Summary

22 one hour periods meet minimums.
Warrant IS met.

Site Data Required

Number of Minor Lanes = 1

Volume and Delay Requirements

Veh/Hr All Approaches = **800**

Veh/Hr Minor = **100**

Total Delay (Veh-Hrs) = **4**

Major Road						Minor Road			
LOR 82 EB						Island Rd NB			
Time	Total of All Approaches	Met?	Minor NB	Delay NB	Met?	Minor SB	Delay SB	Met?	Warrant Met?
16:30 - 17:30	1282	Yes	86	-	---	156	-	Yes	Yes
16:15 - 17:15	1269	Yes	87	-	---	151	-	Yes	Yes
16:00 - 17:00	1231	Yes	86	-	---	154	-	Yes	Yes
16:45 - 17:45	1216	Yes	83	-	---	147	-	Yes	Yes
15:45 - 16:45	1203	Yes	84	-	---	150	-	Yes	Yes
15:30 - 16:30	1149	Yes	70	-	---	149	-	Yes	Yes
17:00 - 18:00	1099	Yes	78	-	---	147	-	Yes	Yes
15:00 - 16:00	1091	Yes	61	-	---	136	-	Yes	Yes
15:15 - 16:15	1068	Yes	71	-	---	135	-	Yes	Yes
17:15 - 18:15	1047	Yes	68	-	---	148	-	Yes	Yes
14:45 - 15:45	1043	Yes	66	-	---	138	-	Yes	Yes
14:30 - 15:30	1022	Yes	68	-	---	126	-	Yes	Yes
14:15 - 15:15	1007	Yes	57	-	---	138	-	Yes	Yes
14:00 - 15:00	920	Yes	58	-	---	123	-	Yes	Yes
17:30 - 18:30	905	Yes	63	-	---	133	-	Yes	Yes
07:15 - 08:15	885	Yes	102	-	Yes	78	-	---	Yes
13:45 - 14:45	868	Yes	51	-	---	117	-	Yes	Yes
17:45 - 18:45	830	Yes	55	-	---	126	-	Yes	Yes
13:30 - 14:30	805	Yes	56	-	---	115	-	Yes	Yes
07:00 - 08:00	891	Yes	92	-	No	76	-	---	No
06:45 - 07:45	832	Yes	79	-	No	73	-	---	No
07:30 - 08:30	828	Yes	96	-	No	72	-	---	No
06:30 - 07:30	787	No	72	-	No	69	-	---	No
18:00 - 19:00	782	No	53	-	---	114	-	Yes	No
13:15 - 14:15	760	No	60	-	---	98	-	No	No

LOR-82-3.58 (Island Rd)

2022 Signal Evaluation

Study Name: LOR-82-3.58 (Island Rd) Warrants PC2

Study Date : 2/14/2024

Warrant 3B - Peak Hour Volumes

Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

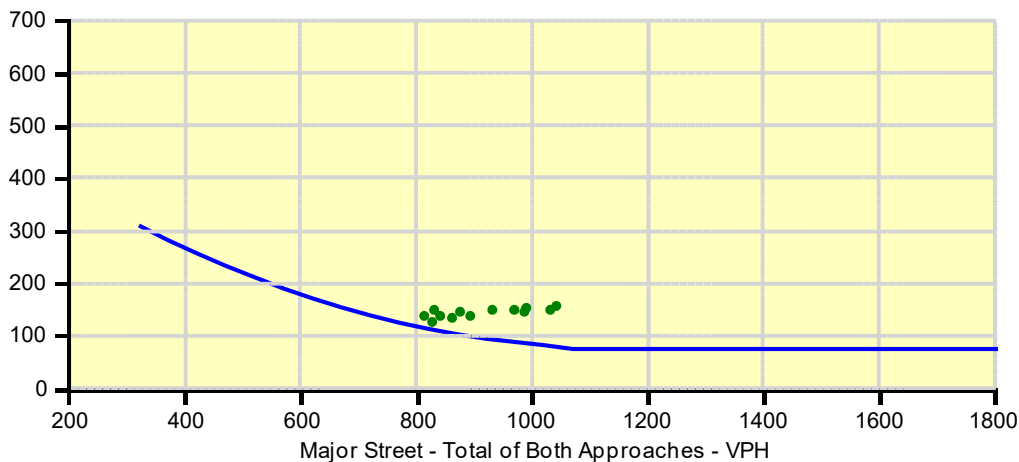
Summary

13 one hour periods meet minimums.
Warrant IS met.

Site Data Required

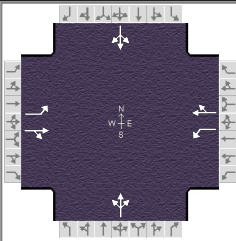
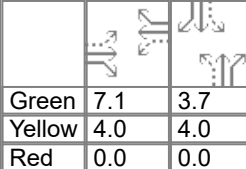
Rural Settings Apply = **True**
Number of Major Lanes = **1**
Number of Minor Lanes = **1**

Major Road LOR 82 EB						Minor Road Island Rd NB		Met?
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	
16:30 - 17:30	433	+	607	=	1040	86	156	Yes
16:15 - 17:15	441	+	590	=	1031	87	151	Yes
16:00 - 17:00	436	+	555	=	991	86	154	Yes
16:45 - 17:45	430	+	556	=	986	83	147	Yes
15:45 - 16:45	423	+	546	=	969	84	150	Yes
15:30 - 16:30	422	+	508	=	930	70	149	Yes
15:00 - 16:00	400	+	494	=	894	61	136	Yes
17:00 - 18:00	399	+	475	=	874	78	147	Yes
15:15 - 16:15	378	+	484	=	862	71	135	Yes
14:45 - 15:45	408	+	431	=	839	66	138	Yes
17:15 - 18:15	406	+	425	=	831	68	148	Yes
							126	Yes

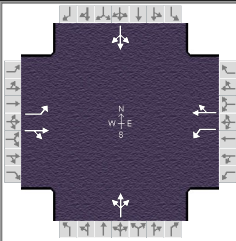
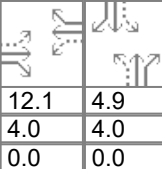
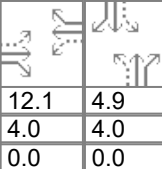
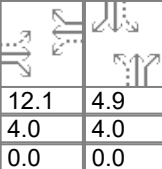
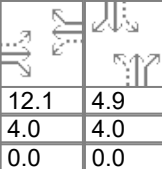
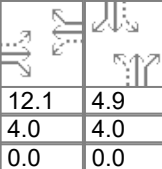
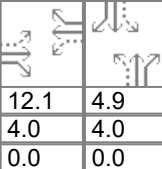
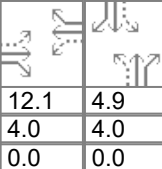
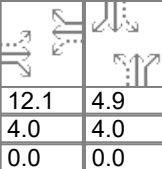
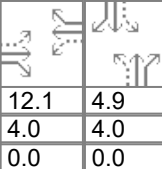
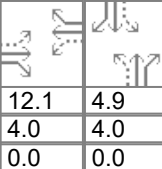
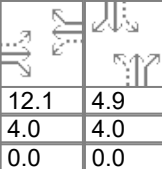


ASSOCIATED PHASE	DIRECTION	MOVEMENT	TRAFFIC SIGNAL													PEDESTRIAN																	
			FACTORS *(TEM 403-2)								CALCULATED 403-2) (TEM			FINAL CLEARANCE		PED MOVEMENT	ASSOCIATED PHASE	CROSSWALK LENGTH	PUSHBUTTON PROVIDED	DISTANCE TO PUSHBUTTON FROM CURB	OMUTCD 4E.06-12	OMUTCD 4E.06-07	PED CHANGE INTERVAL (FDW)	3 fps CHECKS (OMUTCD 4E.06, 01-14)			FINAL PED TIMING						
			POSTED SPEED LIMIT	PERCEPTION/REACTION TIME (1s TYP)	YELLOW CHANGE APPROACH SPEED*	RED APPROACH SPEED*	DECELERATION RATE (10 fps TYP)	WIDTH OF INTERSECTION*	LENGTH OF VEHICLE (20 ft TYP)	APPROACH GRADE	YELLOW	RED	Y + R	YELLOW	RED									Y + R	WALK INTERVAL (4-7s TYP)	CALCULATED PED CLEARANCE	PED CHANGE INTERVAL (FDW)	(L+P)/(3 fps) (NOTE: P=6 IF NO PUSHBUTTON)	WALK + PED CHANGE INTERVALS	IS Y>X?	ADDITIONAL WALK INTERVAL REQUIRED	FINAL WALK INTERVAL	FINAL PED CHANGE INTERVAL (FDW)
				t	V _Y	V _R	a	W	L	g	Y	R	TOTAL	Y (3-6s TYP)	R (1-6s TYP)									TOTAL									
				MPH	SEC	MPH	MPH	FPS	FT	FT	%	SEC	SEC	SEC	SEC									SEC									
1	-	-	-	1	-	-	10	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
2	EB	THROUGH/RT	50	1	57	57	10	52	20	0	5.2	-0.1	5.1	5.5	1	6.5	EB	-	30	-	-	8.6	5.6	-	-	-	-	-	-	-	6		
3	-	-	-	1	-	-	10	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
4	SB	THROUGH/RT	40	1	47	47	10	68	20	0	4.5	0.3	4.8	4.5	1	5.5	SB	-	42	-	-	12.0	9.0	-	-	-	-	-	-	-	9		
5	-	-	-	1	-	-	10	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
6	WB	THROUGH/RT	50	1	57	57	10	60	20	0	5.2	0.0	5.2	5.5	1	6.5	WB	-	32	-	-	9.1	6.1	-	-	-	-	-	-	-	7		
7	-	-	-	1	-	-	10	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
8	NB	THROUGH/RT	40	1	47	47	10	68	20	0	4.5	0.3	4.8	4.5	1	5.5	NB	-	42	-	-	12.0	9.0	-	-	-	-	-	-	-	9		

HCS7 Signalized Intersection Results Summary

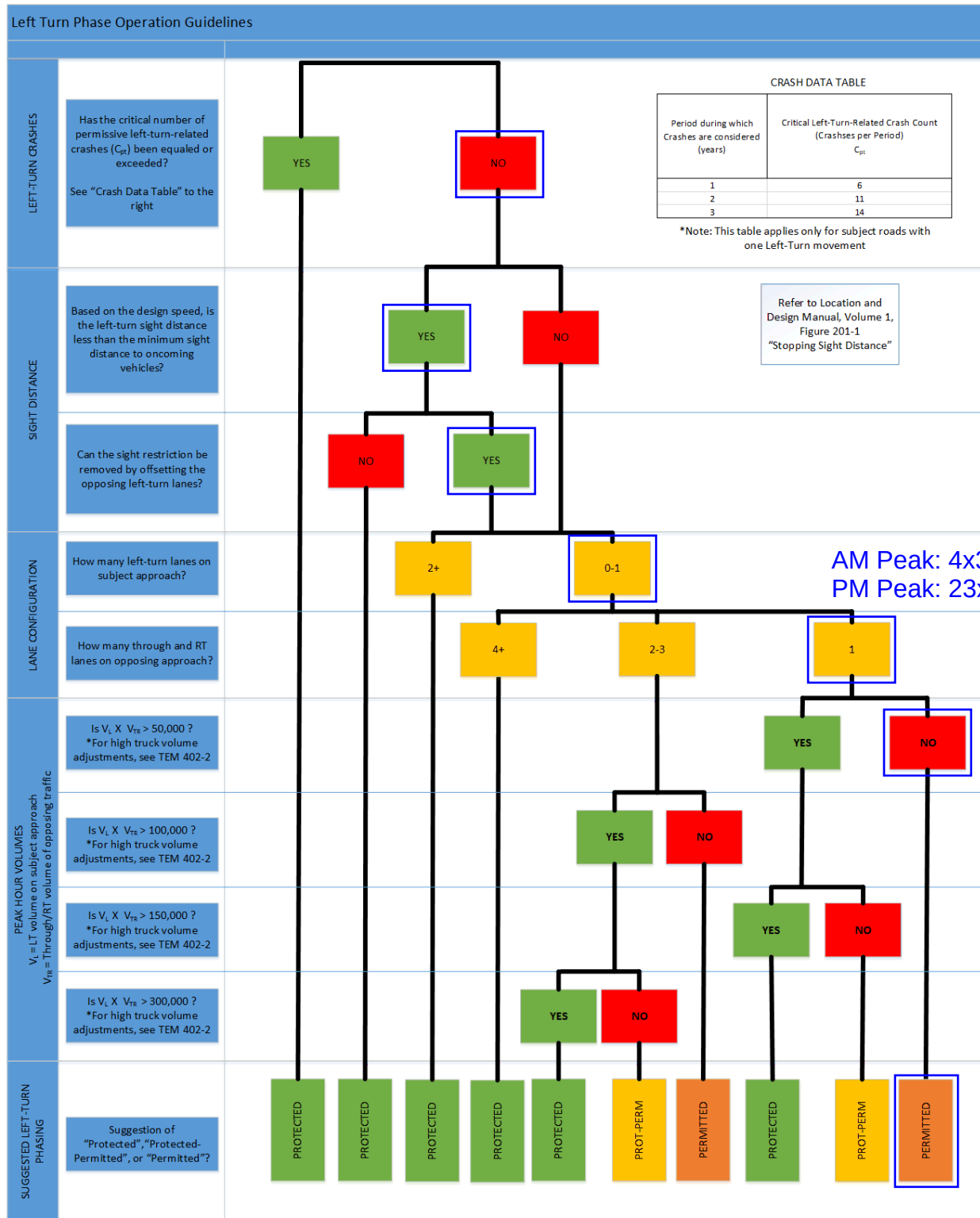
General Information						Intersection Information													
Agency						Duration, h		0.250											
Analyst				Analysis Date		3/18/2024		Area Type		Other									
Jurisdiction				Time Period				PHF		0.91									
Urban Street				Analysis Year		2024		Analysis Period		1> 7:00									
Intersection		2022 Signal Evaluation		File Name		LOR-82-3.58 (Island Rd) AM Peak.xus													
Project Description		LOR-82-3.58 (Island Rd) AM Peak																	
Demand Information				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h				53	361	22	4	262	21	28	47	17	28	17	31				
Signal Information																			
Cycle, s	18.9	Reference Phase	2																
Offset, s	0	Reference Point	End																
Uncoordinated	Yes	Simult. Gap E/W	On																
Force Mode	Fixed	Simult. Gap N/S	On																
				Green	7.1	3.7	0.0	0.0	0.0	0.0									
				Yellow	4.0	4.0	0.0	0.0	0.0	0.0									
				Red	0.0	0.0	0.0	0.0	0.0	0.0									
Timer Results				EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase						2				6				8				4	
Case Number						6.0				6.0				8.0				8.0	
Phase Duration, s						11.1				11.1				7.7				7.7	
Change Period, (Y+R c), s						4.0				4.0				4.0				4.0	
Max Allow Headway (MAH), s						3.0				3.0				3.1				3.1	
Queue Clearance Time (g s), s						5.7				5.8				2.9				2.8	
Green Extension Time (g e), s						1.4				1.4				0.3				0.3	
Phase Call Probability						1.00				1.00				0.62				0.62	
Max Out Probability						0.00				0.00				0.00				0.00	
Movement Group Results				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement				5	2	12	1	6	16	3	8	18	7	4	14				
Adjusted Flow Rate (v), veh/h				58	421		4	311			101			84					
Adjusted Saturation Flow Rate (s), veh/h/ln				1068	1749		981	1758			1668			1528					
Queue Service Time (g s), s				0.8	3.7		0.1	2.5			0.0			0.0					
Cycle Queue Clearance Time (g c), s				3.3	3.7		3.8	2.5			0.9			0.8					
Green Ratio (g/C)				0.38	0.38		0.38	0.38			0.20			0.20					
Capacity (c), veh/h				645	661		561	665			580			564					
Volume-to-Capacity Ratio (X)				0.090	0.637		0.008	0.468			0.174			0.148					
Back of Queue (Q), ft/ln (50 th percentile)				0.4	1.9		0.1	0.9			2.6			2.2					
Back of Queue (Q), veh/ln (50 th percentile)				0.0	0.1		0.0	0.0			0.1			0.1					
Queue Storage Ratio (RQ) (50 th percentile)				0.00	0.00		0.00	0.00			0.00			0.00					
Uniform Delay (d 1), s/veh				5.7	4.8		6.3	4.4			6.4			6.4					
Incremental Delay (d 2), s/veh				0.0	0.4		0.0	0.2			0.1			0.0					
Initial Queue Delay (d 3), s/veh				0.0	0.0		0.0	0.0			0.0			0.0					
Control Delay (d), s/veh				5.7	5.2		6.3	4.6			6.5			6.4					
Level of Service (LOS)				A	A		A	A			A			A					
Approach Delay, s/veh / LOS				5.3	A		4.7	A		6.5	A		6.4	A					
Intersection Delay, s/veh / LOS				5.3					A										
Multimodal Results				EB			WB			NB			SB						
Pedestrian LOS Score / LOS				1.62	B		1.62	B		1.87	B		1.87	B					
Bicycle LOS Score / LOS				1.28	A		1.01	A		0.65	A		0.63	A					

HCS7 Signalized Intersection Results Summary

General Information						Intersection Information													
Agency						Duration, h		0.250											
Analyst				Analysis Date		3/18/2024		Area Type		Other									
Jurisdiction				Time Period				PHF		0.97									
Urban Street				Analysis Year		2024		Analysis Period		1> 7:00									
Intersection		2022 Signal Evaluation		File Name		LOR-82-3.58 (Island Rd) PM Peak.xus													
Project Description		LOR-82-3.58 (Island Rd) PM Peak																	
Demand Information				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h				51	356	26	23	524	60	30	41	15	40	49	67				
Signal Information																			
Cycle, s	25.0	Reference Phase	2																
Offset, s	0	Reference Point	End																
Uncoordinated	Yes	Simult. Gap E/W	On																
Force Mode	Fixed	Simult. Gap N/S	On																
				Green	12.1	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
				Yellow	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
				Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
Timer Results				EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase						2				6				8				4	
Case Number						6.0				6.0				8.0				8.0	
Phase Duration, s						16.1				16.1				8.9				8.9	
Change Period, (Y+R c), s						4.0				4.0				4.0				4.0	
Max Allow Headway (MAH), s						3.0				3.0				3.1				3.1	
Queue Clearance Time (g s), s						10.0				8.5				3.0				4.1	
Green Extension Time (g e), s						2.1				2.1				0.4				0.4	
Phase Call Probability						1.00				1.00				0.82				0.82	
Max Out Probability						0.00				0.00				0.00				0.00	
Movement Group Results				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement				5	2	12	1	6	16	3	8	18	7	4	14				
Adjusted Flow Rate (v), veh/h				53	394		24	602			89			161					
Adjusted Saturation Flow Rate (s), veh/h/ln				817	1804		975	1793			1674			1629					
Queue Service Time (g s), s				1.3	3.6		0.4	6.5			0.0			0.8					
Cycle Queue Clearance Time (g c), s				8.0	3.6		4.1	6.5			1.0			2.1					
Green Ratio (g/C)				0.48	0.48		0.48	0.48			0.20			0.20					
Capacity (c), veh/h				465	870		614	864			525			503					
Volume-to-Capacity Ratio (X)				0.113	0.453		0.039	0.696			0.169			0.320					
Back of Queue (Q), ft/ln (50 th percentile)				2.5	0.9		0.6	2.4			5.4			10.5					
Back of Queue (Q), veh/ln (50 th percentile)				0.1	0.0		0.0	0.1			0.2			0.4					
Queue Storage Ratio (RQ) (50 th percentile)				0.02	0.00		0.00	0.00			0.00			0.00					
Uniform Delay (d 1), s/veh				8.2	4.3		5.7	5.0			8.4			8.9					
Incremental Delay (d 2), s/veh				0.0	0.1		0.0	0.4			0.1			0.1					
Initial Queue Delay (d 3), s/veh				0.0	0.0		0.0	0.0			0.0			0.0					
Control Delay (d), s/veh				8.2	4.4		5.7	5.4			8.5			9.0					
Level of Service (LOS)				A	A		A	A			A			A					
Approach Delay, s/veh / LOS				4.9	A		5.4	A		8.5	A		9.0	A					
Intersection Delay, s/veh / LOS				5.9						A									
Multimodal Results				EB			WB			NB			SB						
Pedestrian LOS Score / LOS				1.62	B		1.62	B		1.88	B		1.88	B					
Bicycle LOS Score / LOS				1.22	A		1.52	B		0.63	A		0.75	A					

LOR-82-3.58 NB

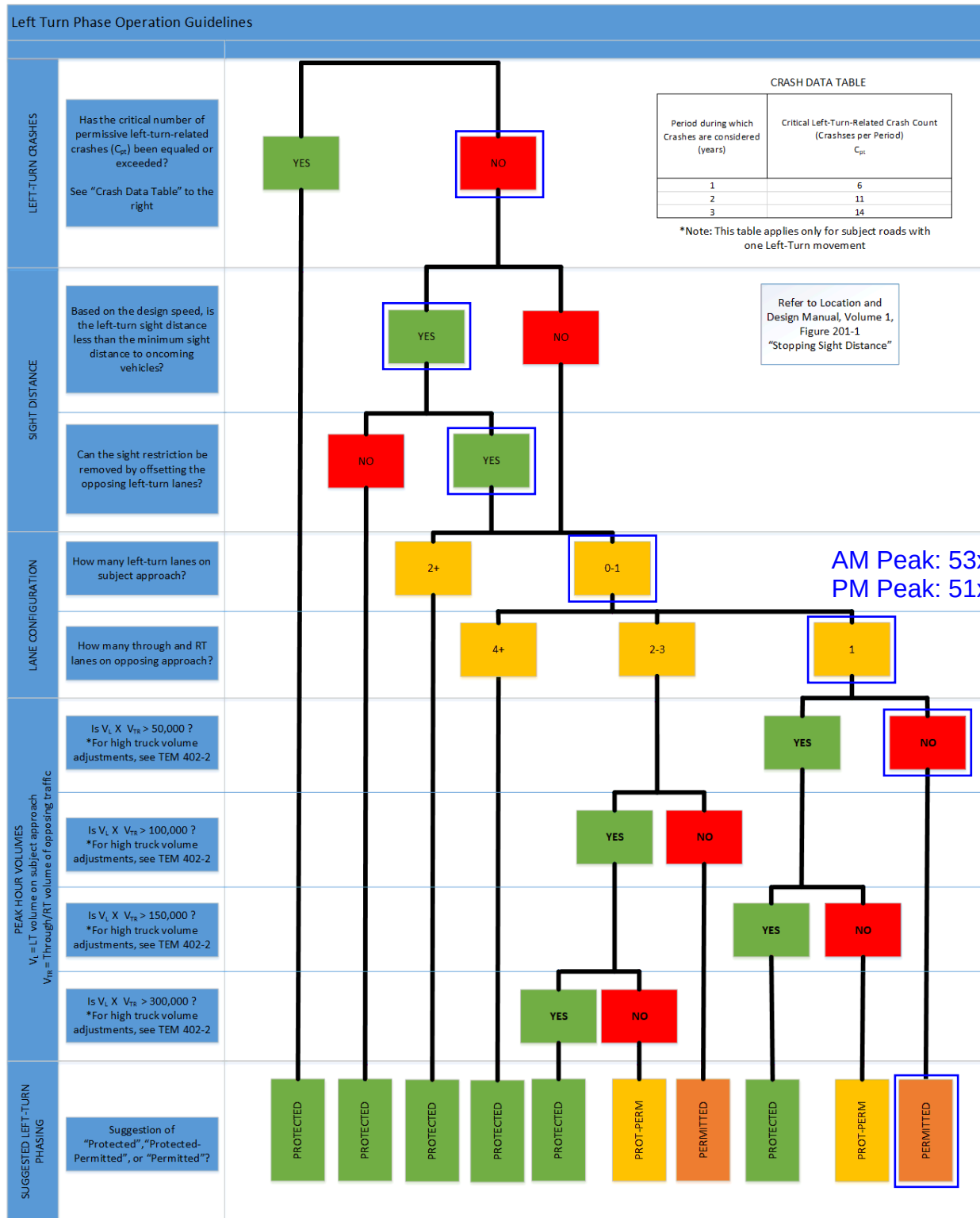
Left Turn Phase Operation Guidelines



[Link to Location and Design Manual, Volume 1](#)

LOR-82-3.58 SB

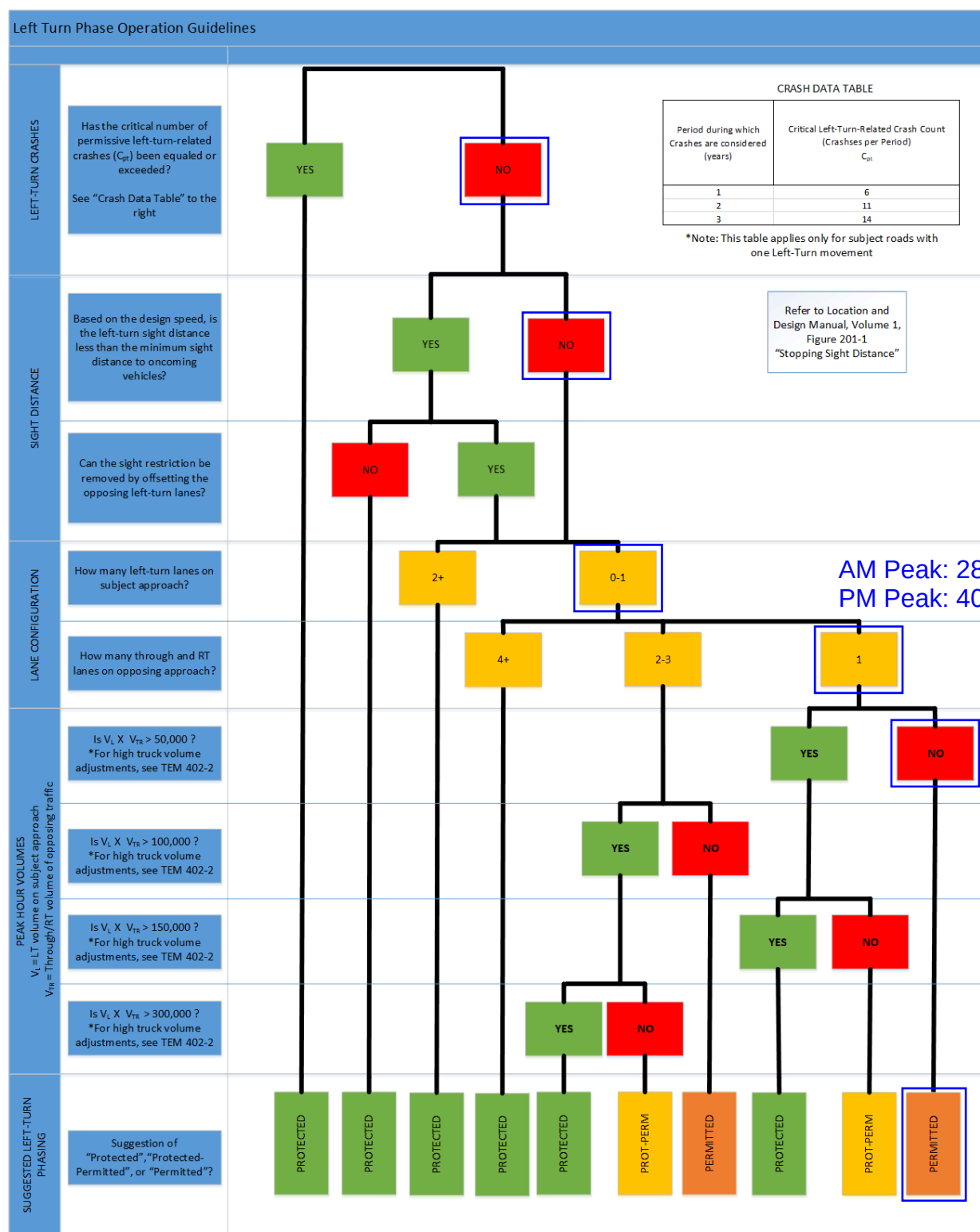
Left Turn Phase Operation Guidelines



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LOR-82-3.58 EB

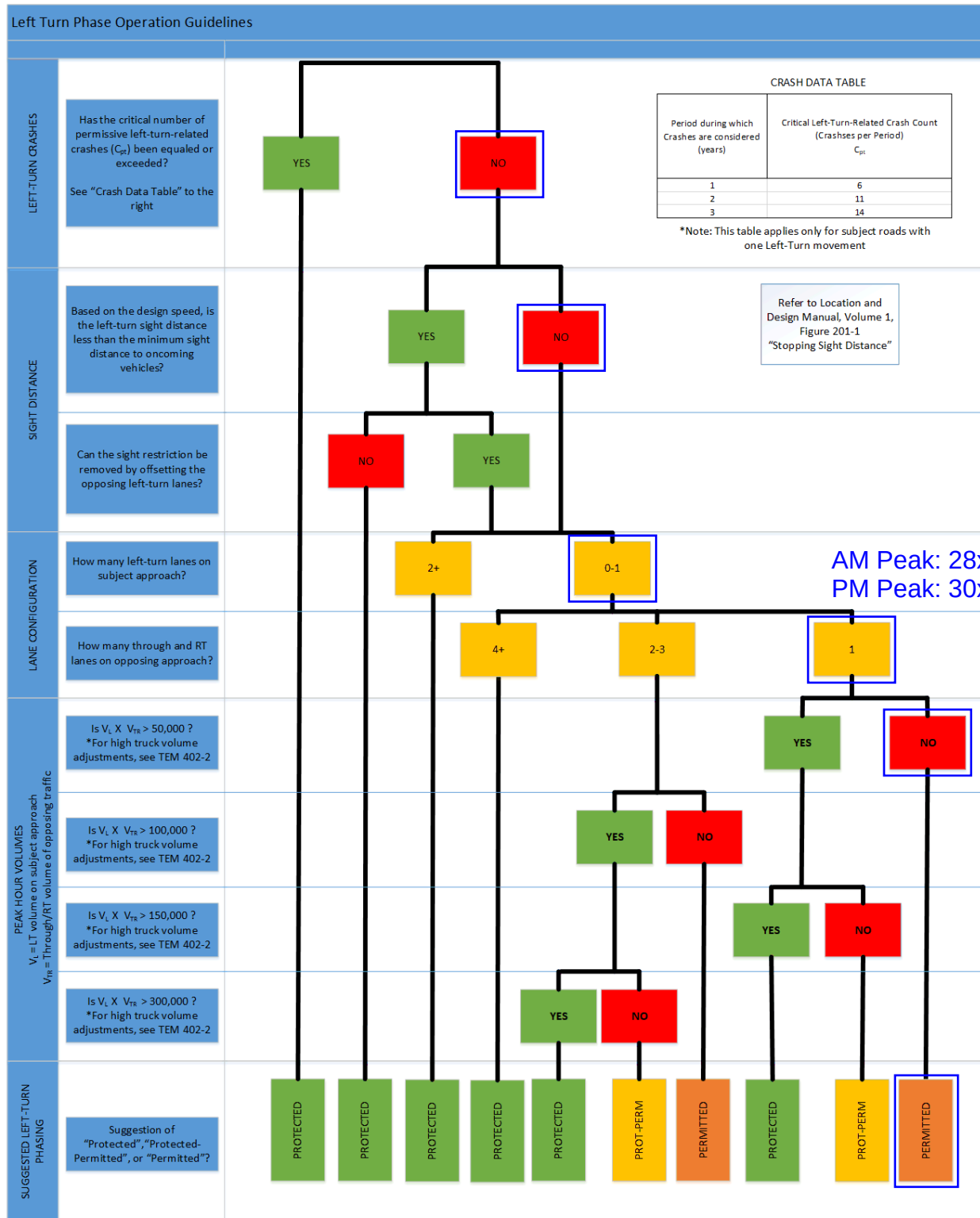
Left Turn Phase Operation Guidelines



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LOR-82-3.58 WB

Left Turn Phase Operation Guidelines



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