

Appendix J

Delay Data and Level of Service Standards for Two-Way Stop Controlled Intersections



Job No : -32274 - TRIBUTARY DRI - SR 200 W
Site No : -2
Date : 08/24/2023

07:15:00 - 08:15:00

NB LEFT					
Ln	No	Joined Queue	Released From Queue	Delay	Queue
NB LEFT	1	7:26:06	7:26:09	3	1
NB LEFT	2	7:31:33	7:31:36	3	1
NB LEFT	3	7:42:17	7:42:23	6	1
NB LEFT	4	7:47:39	7:48:01	22	1
NB LEFT	5	7:48:55	7:48:57	2	1
NB LEFT	6	7:53:34	7:53:42	8	1
NB LEFT	7	8:02:16	8:02:17	1	0
NB LEFT	8	8:13:23	8:13:37	14	1

Summary Information	
07:15:00 - 08:15:00	NB LEFT
Delayed Vehicle Count:	8
Average Stopped Time:	7.37
Maximum Stopped Time:	22
Min. Secs. for Delay:	1
Maximum Queue:	1
Delay in Vehicle Hour:	0.02
Total Delay	59



Job No :-32274 - TRIBUTARY DRI - SR 200 W
 Site No :-2
 Date : 08/24/2023

07:15:00 - 08:15:00

NB RIGHT					
Ln	No	Joined Queue	Released From Queue	Delay	Queue
NB RIGHT	1	7:15:40	7:15:44	4	1
NB RIGHT	2	7:16:05	7:16:06	1	0
NB RIGHT	3	7:16:05	7:16:08	3	0
NB RIGHT	4	7:16:19	7:16:20	1	0
NB RIGHT	5	7:16:51	7:16:59	8	1
NB RIGHT	6	7:16:54	7:16:59	5	2
NB RIGHT	7	7:17:21	7:17:22	1	0
NB RIGHT	8	7:17:54	7:17:58	4	1
NB RIGHT	9	7:18:04	7:18:06	2	1
NB RIGHT	10	7:18:06	7:18:10	4	2
NB RIGHT	11	7:18:15	7:18:20	5	1
NB RIGHT	12	7:18:43	7:18:44	1	0
NB RIGHT	13	7:18:58	7:19:01	3	1
NB RIGHT	14	7:19:03	7:19:05	2	0
NB RIGHT	15	7:19:25	7:19:35	10	1
NB RIGHT	16	7:19:33	7:19:38	5	2
NB RIGHT	17	7:19:45	7:19:46	1	0
NB RIGHT	18	7:20:07	7:20:08	1	0
NB RIGHT	19	7:20:17	7:20:37	20	1
NB RIGHT	20	7:20:17	7:20:42	25	2
NB RIGHT	21	7:20:52	7:21:28	36	1
NB RIGHT	22	7:21:18	7:21:39	21	2
NB RIGHT	23	7:21:18	7:21:43	25	1
NB RIGHT	24	7:21:18	7:21:46	28	1
NB RIGHT	25	7:21:33	7:21:50	17	1
NB RIGHT	26	7:21:38	7:22:01	23	1
NB RIGHT	27	7:22:12	7:22:13	1	0
NB RIGHT	28	7:22:16	7:22:17	1	0
NB RIGHT	29	7:22:21	7:22:31	10	1
NB RIGHT	30	7:22:40	7:22:52	12	1
NB RIGHT	31	7:23:09	7:23:10	1	0
NB RIGHT	32	7:23:37	7:23:40	3	1
NB RIGHT	33	7:23:42	7:23:43	1	0
NB RIGHT	34	7:24:22	7:24:23	1	0
NB RIGHT	35	7:24:28	7:24:32	4	1
NB RIGHT	36	7:24:38	7:24:53	15	1
NB RIGHT	37	7:24:51	7:25:00	9	2
NB RIGHT	38	7:24:59	7:25:03	4	2

NB RIGHT	39	7:25:19	7:25:22	3	1
NB RIGHT	40	7:25:54	7:25:55	1	0
NB RIGHT	41	7:26:00	7:26:02	2	1
NB RIGHT	42	7:26:51	7:26:52	1	0
NB RIGHT	43	7:27:11	7:27:22	11	1
NB RIGHT	44	7:27:50	7:27:51	1	0
NB RIGHT	45	7:28:31	7:28:34	3	1
NB RIGHT	46	7:29:12	7:29:18	6	1
NB RIGHT	47	7:29:19	7:29:22	3	0
NB RIGHT	48	7:29:39	7:29:43	4	1
NB RIGHT	49	7:29:55	7:29:59	4	1
NB RIGHT	50	7:29:57	7:30:03	6	2
NB RIGHT	51	7:30:07	7:30:23	16	1
NB RIGHT	52	7:30:10	7:30:26	16	2
NB RIGHT	53	7:30:22	7:30:31	9	3
NB RIGHT	54	7:30:37	7:30:44	7	1
NB RIGHT	55	7:31:01	7:31:05	4	1
NB RIGHT	56	7:31:17	7:31:25	8	0
NB RIGHT	57	7:31:59	7:32:00	1	0
NB RIGHT	58	7:32:35	7:32:36	1	0
NB RIGHT	59	7:33:19	7:33:26	7	1
NB RIGHT	60	7:33:30	7:33:31	1	0
NB RIGHT	61	7:34:11	7:34:12	1	0
NB RIGHT	62	7:34:22	7:34:32	10	1
NB RIGHT	63	7:35:00	7:35:19	19	1
NB RIGHT	64	7:35:06	7:35:24	18	2
NB RIGHT	65	7:35:30	7:35:31	1	0
NB RIGHT	66	7:35:57	7:36:07	10	1
NB RIGHT	67	7:37:43	7:37:47	4	1
NB RIGHT	68	7:38:19	7:38:25	6	1
NB RIGHT	69	7:38:32	7:38:33	1	0
NB RIGHT	70	7:40:13	7:40:25	12	1
NB RIGHT	71	7:40:16	7:40:41	25	2
NB RIGHT	72	7:42:45	7:42:47	2	1
NB RIGHT	73	7:43:05	7:43:06	1	0
NB RIGHT	74	7:43:21	7:43:37	16	1
NB RIGHT	75	7:43:21	7:43:41	20	2
NB RIGHT	76	7:43:46	7:43:47	1	0
NB RIGHT	77	7:43:56	7:44:07	11	1
NB RIGHT	78	7:44:41	7:44:43	2	1
NB RIGHT	79	7:44:41	7:45:01	20	2
NB RIGHT	80	7:45:05	7:45:06	1	0
NB RIGHT	81	7:45:31	7:45:36	5	1
NB RIGHT	82	7:45:58	7:45:59	1	0
NB RIGHT	83	7:46:31	7:46:32	1	0
NB RIGHT	84	7:46:39	7:46:50	11	1
NB RIGHT	85	7:46:39	7:46:53	14	2
NB RIGHT	86	7:46:41	7:46:58	17	3
NB RIGHT	87	7:47:28	7:47:36	8	1
NB RIGHT	88	7:48:00	7:48:01	1	0

NB RIGHT	89	7:49:13	7:49:14	1	0
NB RIGHT	90	7:49:40	7:49:49	9	1
NB RIGHT	91	7:49:57	7:49:58	1	0
NB RIGHT	92	7:50:44	7:50:45	1	0
NB RIGHT	93	7:51:37	7:51:43	6	1
NB RIGHT	94	7:51:55	7:51:56	1	0
NB RIGHT	95	7:52:10	7:52:13	3	1
NB RIGHT	96	7:52:40	7:52:41	1	0
NB RIGHT	97	7:53:38	7:53:39	1	0
NB RIGHT	98	7:54:12	7:54:13	1	0
NB RIGHT	99	7:54:21	7:54:37	16	1
NB RIGHT	100	7:55:21	7:55:22	1	0
NB RIGHT	101	7:55:42	7:55:44	2	1
NB RIGHT	102	7:55:54	7:56:02	8	1
NB RIGHT	103	7:55:54	7:57:19	85	1
NB RIGHT	104	7:56:07	7:56:15	8	1
NB RIGHT	105	7:57:22	7:57:23	1	0
NB RIGHT	106	7:58:36	7:58:47	11	0
NB RIGHT	107	7:59:01	7:59:03	2	1
NB RIGHT	108	7:59:53	7:59:54	1	0
NB RIGHT	109	8:00:10	8:00:21	11	1
NB RIGHT	110	8:00:49	8:00:50	1	0
NB RIGHT	111	8:02:13	8:02:14	1	0
NB RIGHT	112	8:02:55	8:02:56	1	0
NB RIGHT	113	8:03:34	8:03:35	1	0
NB RIGHT	114	8:04:07	8:04:08	1	0
NB RIGHT	115	8:04:39	8:04:49	10	1
NB RIGHT	116	8:05:09	8:05:10	1	0
NB RIGHT	117	8:05:20	8:05:34	14	1
NB RIGHT	118	8:05:20	8:05:39	19	2
NB RIGHT	119	8:05:30	8:05:51	21	3
NB RIGHT	120	8:06:27	8:06:38	11	1
NB RIGHT	121	8:08:53	8:08:54	1	0
NB RIGHT	122	8:08:56	8:08:57	1	0
NB RIGHT	123	8:08:59	8:09:00	1	0
NB RIGHT	124	8:09:12	8:09:30	18	1
NB RIGHT	125	8:09:15	8:09:33	18	2
NB RIGHT	126	8:09:17	8:09:47	30	1
NB RIGHT	127	8:09:51	8:09:52	1	0
NB RIGHT	128	8:10:17	8:10:18	1	0
NB RIGHT	129	8:10:45	8:10:57	12	1
NB RIGHT	130	8:10:46	8:11:03	17	2
NB RIGHT	131	8:10:55	8:11:27	32	1
NB RIGHT	132	8:11:22	8:11:34	12	2
NB RIGHT	133	8:12:46	8:12:47	1	0
NB RIGHT	134	8:12:50	8:13:05	15	1
NB RIGHT	135	8:13:31	8:13:37	6	1
NB RIGHT	136	8:14:10	8:14:29	19	1

Summary Information

07:15:00 - 08:15:00	NB RIGHT
Delayed Vehicle Count:	136
Average Stopped Time:	8.15
Maximum Stopped Time:	85
Min. Secs. for Delay:	1
Maximum Queue:	3
Delay in Vehicle Hour:	0.31
Total Delay	1109



Job No :-32274 - TRIBUTARY DRI - SR 200 W
Site No : -2
Date : 08/24/2023

04:30:00 - 05:30:00

NB LEFT					
Ln	No	Joined Queue	Released From Queue	Delay	Queue
NB LEFT	1	16:29:46	16:30:10	24	1
NB LEFT	2	16:31:26	16:31:34	8	1
NB LEFT	3	16:35:46	16:35:47	1	0
NB LEFT	4	16:41:21	16:41:25	4	1
NB LEFT	5	16:46:31	16:46:36	5	1
NB LEFT	6	16:47:13	16:47:15	2	1
NB LEFT	7	16:51:11	16:51:15	4	1
NB LEFT	8	16:55:11	16:55:12	1	0
NB LEFT	9	17:01:50	17:02:05	15	1

Summary Information	
04:30:00 - 05:30:00	NB LEFT
Delayed Vehicle Count:	9
Average Stopped Time:	7.11
Maximum Stopped Time:	24
Min. Secs. for Delay:	1
Maximum Queue:	1
Delay in Vehicle Hour:	0.02
Total Delay	64



Job No :-32274 - TRIBUTARY DRI - SR 200 W
 Site No : -2
 Date : 08/24/2023

04:30:00 - 05:30:00

NB RIGHT					
Ln	No	Joined Queue	Released From Queue	Delay	Queue
NB RIGHT	1	16:29:49	16:30:10	21	1
NB RIGHT	2	16:30:16	16:30:45	29	1
NB RIGHT	3	16:30:53	16:30:54	1	0
NB RIGHT	4	16:30:58	16:31:02	4	1
NB RIGHT	5	16:31:01	16:31:06	5	2
NB RIGHT	6	16:31:46	16:31:53	7	1
NB RIGHT	7	16:32:05	16:32:06	1	0
NB RIGHT	8	16:33:18	16:33:19	1	0
NB RIGHT	9	16:33:51	16:33:52	1	0
NB RIGHT	10	16:35:06	16:35:07	1	0
NB RIGHT	11	16:35:15	16:35:19	4	1
NB RIGHT	12	16:35:30	16:35:36	6	1
NB RIGHT	13	16:35:35	16:35:40	5	2
NB RIGHT	14	16:35:46	16:35:47	1	0
NB RIGHT	15	16:35:54	16:36:05	11	1
NB RIGHT	16	16:36:16	16:36:30	14	1
NB RIGHT	17	16:36:56	16:37:00	4	1
NB RIGHT	18	16:37:29	16:37:32	3	1
NB RIGHT	19	16:37:57	16:37:58	1	0
NB RIGHT	20	16:39:21	16:39:29	8	1
NB RIGHT	21	16:40:59	16:41:04	5	1
NB RIGHT	22	16:41:01	16:41:08	7	2
NB RIGHT	23	16:41:03	16:41:13	10	3
NB RIGHT	24	16:41:19	16:41:25	6	1
NB RIGHT	25	16:41:54	16:41:55	1	0
NB RIGHT	26	16:42:19	16:42:46	27	1
NB RIGHT	27	16:42:39	16:42:50	11	2
NB RIGHT	28	16:42:46	16:42:52	6	3
NB RIGHT	29	16:43:31	16:43:37	6	1
NB RIGHT	30	16:44:37	16:44:41	4	1
NB RIGHT	31	16:44:40	16:44:50	10	2
NB RIGHT	32	16:45:59	16:46:00	1	0
NB RIGHT	33	16:47:10	16:47:11	1	0
NB RIGHT	34	16:47:15	16:47:25	10	1
NB RIGHT	35	16:47:30	16:47:36	6	1
NB RIGHT	36	16:49:30	16:49:46	16	1
NB RIGHT	37	16:49:35	16:49:50	15	2
NB RIGHT	38	16:51:11	16:51:12	1	0

NB RIGHT	39	16:51:42	16:52:03	21	1
NB RIGHT	40	16:52:02	16:52:07	5	2
NB RIGHT	41	16:53:05	16:53:23	18	1
NB RIGHT	42	16:53:19	16:53:38	19	1
NB RIGHT	43	16:55:11	16:55:28	17	1
NB RIGHT	44	16:55:48	16:56:07	19	1
NB RIGHT	45	16:55:59	16:56:11	12	2
NB RIGHT	46	16:57:25	16:57:26	1	0
NB RIGHT	47	16:58:54	16:58:55	1	0
NB RIGHT	48	16:59:01	16:59:16	15	1
NB RIGHT	49	16:59:34	16:59:35	1	0
NB RIGHT	50	17:02:03	17:02:04	1	0
NB RIGHT	51	17:02:13	17:02:37	24	1
NB RIGHT	52	17:02:48	17:02:52	4	1
NB RIGHT	53	17:04:50	17:04:56	6	1
NB RIGHT	54	17:06:08	17:06:09	1	0
NB RIGHT	55	17:06:18	17:06:25	7	1
NB RIGHT	56	17:06:29	17:06:51	22	1
NB RIGHT	57	17:07:15	17:07:17	2	1
NB RIGHT	58	17:08:43	17:08:48	5	1
NB RIGHT	59	17:11:14	17:11:20	6	1
NB RIGHT	60	17:11:23	17:11:24	1	0
NB RIGHT	61	17:11:55	17:11:56	1	0
NB RIGHT	62	17:12:36	17:12:37	1	0
NB RIGHT	63	17:12:49	17:12:57	8	1
NB RIGHT	64	17:12:52	17:13:00	8	2
NB RIGHT	65	17:14:55	17:15:01	6	1
NB RIGHT	66	17:14:59	17:15:23	24	1
NB RIGHT	67	17:15:17	17:15:26	9	2
NB RIGHT	68	17:15:18	17:15:29	11	3
NB RIGHT	69	17:15:34	17:15:35	1	0
NB RIGHT	70	17:15:48	17:15:49	1	0
NB RIGHT	71	17:16:24	17:16:29	5	1
NB RIGHT	72	17:17:02	17:17:03	1	0
NB RIGHT	73	17:19:05	17:19:16	11	1
NB RIGHT	74	17:19:23	17:19:24	1	0
NB RIGHT	75	17:19:34	17:19:35	1	0
NB RIGHT	76	17:20:05	17:20:18	13	1
NB RIGHT	77	17:21:20	17:21:21	1	0
NB RIGHT	78	17:21:23	17:21:24	1	0
NB RIGHT	79	17:22:19	17:22:20	1	0
NB RIGHT	80	17:22:32	17:23:01	29	1
NB RIGHT	81	17:23:31	17:23:32	1	0
NB RIGHT	82	17:23:38	17:23:42	4	1
NB RIGHT	83	17:24:05	17:24:06	1	0
NB RIGHT	84	17:24:31	17:24:47	16	1
NB RIGHT	85	17:24:41	17:24:51	10	2
NB RIGHT	86	17:24:46	17:25:07	21	1
NB RIGHT	87	17:24:50	17:25:11	21	1
NB RIGHT	88	17:25:26	17:25:40	14	1

NB RIGHT	89	17:25:35	17:25:53	18	2
NB RIGHT	90	17:25:46	17:25:54	8	1
NB RIGHT	91	17:25:48	17:25:59	11	2
NB RIGHT	92	17:26:11	17:26:31	20	1
NB RIGHT	93	17:27:02	17:27:03	1	0
NB RIGHT	94	17:27:48	17:28:00	12	1
NB RIGHT	95	17:28:17	17:28:18	1	0
NB RIGHT	96	17:28:51	17:28:57	6	1

Summary Information

04:30:00 - 05:30:00	NB RIGHT
Delayed Vehicle Count:	96
Average Stopped Time:	8.10
Maximum Stopped Time:	29
Min. Secs. for Delay:	1
Maximum Queue:	3
Delay in Vehicle Hour:	0.22
Total Delay	778

LOS is not defined for the major-street approaches or for the overall intersection, as major-street through vehicles are assumed to experience no delay.

Exhibit 20-2
LOS Criteria: Motorized
Vehicle Mode

LEVEL-OF-SERVICE CRITERIA

LOS for a TWSC intersection is determined by the computed or measured control delay. For motor vehicles, LOS is determined for each minor-street movement (or shared movement), as well as the major-street left turns, by using the criteria given in Exhibit 20-2. LOS is not defined for the intersection as a whole or for major-street approaches for three primary reasons: (a) major-street through vehicles are assumed to experience zero delay; (b) the disproportionate number of major-street through vehicles at a typical TWSC intersection skews the weighted average of all movements, resulting in a very low overall average delay for all vehicles; and (c) the resulting low delay can mask LOS deficiencies for minor movements. As Exhibit 20-2 notes, LOS F is assigned to a movement if its volume-to-capacity ratio exceeds 1.0, regardless of the control delay.

The LOS criteria for TWSC intersections differ somewhat from the criteria used in Chapter 19 for signalized intersections, primarily because user perceptions differ among transportation facility types. The expectation is that a signalized intersection is designed to carry higher traffic volumes and will present greater delay than an unsignalized intersection. Unsignalized intersections are also associated with more uncertainty for users, as delays are less predictable than they are at signals.

Control Delay (s/veh)	LOS by Volume-to-Capacity Ratio	
	$v/c \leq 1.0$	$v/c > 1.0$
0–10	A	F
>10–15	B	F
>15–25	C	F
>25–35	D	F
>35–50	E	F
>50	F	F

Note: The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection as a whole.

Pedestrian LOS at TWSC intersections is defined for pedestrians crossing a traffic stream not controlled by a STOP sign; it also applies to midblock pedestrian crossings. LOS criteria for pedestrians are given in Exhibit 20-3.

Exhibit 20-3
LOS Criteria: Pedestrian Mode

LOS	Control Delay	
	(s/p)	Comments
A	0–5	Usually no conflicting traffic
B	5–10	Occasionally some delay due to conflicting traffic
C	10–20	Delay noticeable to pedestrians, but not inconveniencing
D	20–30	Delay noticeable and irritating, increased likelihood of risk taking
E	30–45	Delay approaches tolerance level, risk-taking behavior likely
F	>45	Delay exceeds tolerance level, high likelihood of pedestrian risk taking

Note: Control delay may be interpreted as seconds per pedestrian group if groups of pedestrians were counted as opposed to individual pedestrians.

LOS F for pedestrians occurs when there are not enough gaps of suitable size to allow waiting pedestrians to cross through traffic on the major street safely. This situation is typically evident from extremely long control delays. The method is based on a constant critical headway. In the field, however, LOS F may also appear in the form of crossing pedestrians selecting smaller-than-usual gaps. In such cases, safety could be a concern that warrants further study.

Appendix K

Background Traffic Conditions Synchro Printouts

HCM 7th TWSC
1: Edwards Rd & SR-200

12/18/2024

Intersection						
Int Delay, s/veh	4.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	894	13	93	450	11	262
Future Vol, veh/h	894	13	93	450	11	262
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	600	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	972	14	101	489	12	285








Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	986	0	1426	493
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	447	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	696	-	126	522
Stage 1	-	-	-	-	325	-
Stage 2	-	-	-	-	612	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	696	-	108	522
Mov Cap-2 Maneuver	-	-	-	-	277	-
Stage 1	-	-	-	-	325	-
Stage 2	-	-	-	-	523	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.89	21.88
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	504	-	-	696	-
HCM Lane V/C Ratio	0.589	-	-	0.145	-
HCM Control Delay (s/veh)	21.9	-	-	11	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	3.8	-	-	0.5	-

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	 			 	 	
Traffic Vol, veh/h	767	0	0	392	0	2
Future Vol, veh/h	767	0	0	392	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	600	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	834	0	0	426	0	2

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	834
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	795
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	795
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	11.18
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	585	-	-	795	-
HCM Lane V/C Ratio	0.004	-	-	-	-
HCM Control Delay (s/veh)	11.2	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 7th TWSC 3: Tributary Dr / Eas Entrance & SR-200

12/18/2024

Intersection						
Int Delay, s/veh	2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	↖
Traffic Vol, veh/h	747	10	69	383	8	141
Future Vol, veh/h	747	10	69	383	8	141
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	600	-	210	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	812	11	75	416	9	153

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	823	0	1176	411
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	358	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	803	-	184	590
Stage 1	-	-	-	-	394	-
Stage 2	-	-	-	-	678	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	803	-	167	590
Mov Cap-2 Maneuver	-	-	-	-	343	-
Stage 1	-	-	-	-	394	-
Stage 2	-	-	-	-	615	-







Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.52	13.37
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	343	590	-	-	803	-
HCM Lane V/C Ratio	0.025	0.26	-	-	0.093	-
HCM Control Delay (s/veh)	15.8	13.2	-	-	9.9	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	1	-	-	0.3	-

HCM 7th TWSC

4: Edwards Rd & River Glen Pkwy

12/18/2024

Intersection						
Int Delay, s/veh	6.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	144	63	0	29	14
Future Vol, veh/h	0	144	63	0	29	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	185	-	310	340	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	157	68	0	32	15
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	147	68	0	0	68	0
Stage 1	68	-	-	-	-	-
Stage 2	78	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	846	995	-	-	1533	-
Stage 1	954	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	828	995	-	-	1533	-
Mov Cap-2 Maneuver	828	-	-	-	-	-
Stage 1	954	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s/v	9.29	0	4.99			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	-	995	1533	-	
HCM Lane V/C Ratio	-	-	0.157	0.021	-	
HCM Control Delay (s/veh)	-	-	0	9.3	7.4	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0.6	0.1	-

HCM 7th TWSC
1: Edwards Rd & SR-200

12/18/2024

Intersection						
Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↱	↑↑	↲	
Traffic Vol, veh/h	671	28	263	870	23	157
Future Vol, veh/h	671	28	263	870	23	157
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	600	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	729	30	286	946	25	171
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	760	0	1789	380
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	1045	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	848	-	72	618
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	300	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	848	-	48	618
Mov Cap-2 Maneuver	-	-	-	-	174	-
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	199	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		2.64		18.19	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	466	-	-	848	-	
HCM Lane V/C Ratio	0.42	-	-	0.337	-	
HCM Control Delay (s/veh)	18.2	-	-	11.4	-	
HCM Lane LOS	C	-	-	B	-	
HCM 95th %tile Q(veh)	2	-	-	1.5	-	

HCM 7th TWSC

2: Police Lodge Rd / West Entrance & SR-200

12/18/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	607	0	2	806	0	0
Future Vol, veh/h	607	0	2	806	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	600	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	660	0	2	876	0	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	660	0	1102	330
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	442	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	924	-	206	666
Stage 1	-	-	-	-	476	-
Stage 2	-	-	-	-	615	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	924	-	205	666
Mov Cap-2 Maneuver	-	-	-	-	398	-
Stage 1	-	-	-	-	476	-
Stage 2	-	-	-	-	613	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0.02		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	924	-	
HCM Lane V/C Ratio	-	-	-	0.002	-	
HCM Control Delay (s/veh)	0	-	-	8.9	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

HCM 7th TWSC







3: Tributary Dr / Eas Entrance & SR-200

12/18/2024

Intersection						
Int Delay, s/veh	1.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↱	↑↑	↱	↱
Traffic Vol, veh/h	590	5	128	815	9	98
Future Vol, veh/h	590	5	128	815	9	98
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	600	-	210	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	641	5	139	886	10	107
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	647	0	1365	323
Stage 1	-	-	-	-	644	-
Stage 2	-	-	-	-	721	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	935	-	138	672
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	442	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	935	-	118	672
Mov Cap-2 Maneuver	-	-	-	-	302	-
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	377	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		1.29		11.86	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	302	672	-	-	935	-
HCM Lane V/C Ratio	0.032	0.158	-	-	0.149	-
HCM Control Delay (s/veh)	17.3	11.4	-	-	9.5	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.6	-	-	0.5	-

Intersection

Int Delay, s/veh 5.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	77	46	1	159	86
Future Vol, veh/h	1	77	46	1	159	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	185	-	310	340	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	84	50	1	173	93

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	489	50	0
Stage 1	50	-	-
Stage 2	439	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	538	1018	-
Stage 1	972	-	-
Stage 2	650	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	478	1018	-
Mov Cap-2 Maneuver	478	-	-
Stage 1	972	-	-
Stage 2	578	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.9	0	4.93
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 478 1018 1555	-	-
HCM Lane V/C Ratio	-	- 0.002 0.082 0.111	-	-
HCM Control Delay (s/veh)	-	- 12.5 8.9 7.6	-	-
HCM Lane LOS	-	- B A A	-	-
HCM 95th %tile Q(veh)	-	- 0 0.3 0.4	-	-

Appendix L
NCHRP 684 Internal Capture Calculations – Project
Trip Generation Estimates

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Tributary DRI			Organization:	ETM
Project Location:	Yulee, Florida			Performed By:	Thomas Hatcher, P.E., PTOE, PTP
Scenario Description:	Table 8 - West Commercial			Date:	10/15/2024
Analysis Year:	Buildout			Checked By:	
Analysis Period:	AM Street Peak Hour			Date:	10/5/2024

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office	710	37,500	SF	72	63	9
Retail	820	169,000	SF	233	144	89
Restaurant				0		
Cinema/Entertainment				0		
Residential				0		
Hotel				0		
All Other Land Uses ²				0		
				305	207	98

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.00	0%	0%	1.00	0%	0%
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant	1.00	0%	0%	1.00	0%	0%
Cinema/Entertainment	1.00	0%	0%	1.00	0%	0%
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses ²	1.00	0%	0%	1.00	0%	0%

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	0	0	0	0
Retail	3		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	305	207	98
Internal Capture Percentage	4%	3%	6%
External Vehicle-Trips ⁵	293	201	92
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	5%	33%
Retail	2%	3%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

¹ Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
² Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
³ Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i>).
⁴ Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.
⁵ Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.
⁶ Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Tributary DRI
Analysis Period:	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	63	63	1.00	9	9
Retail	1.00	144	144	1.00	89	89
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	0	0	1.00	0	0
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	6	0	0	0
Retail	26		12	0	12	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		46	0	0	0	0
Retail	3		0	0	0	0
Restaurant	9	12		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	24	0	0		0
Hotel	2	6	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	3	60	63	60	0	0
Retail	3	141	144	141	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	3	6	9	6	0	0
Retail	3	86	89	86	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Tributary DRI			Organization:	ETM
Project Location:	Yulee, Florida			Performed By:	Thomas Hatcher, P.E., PTOE, PTP
Scenario Description:	Table 8 - West Commercial			Date:	10/5/2024
Analysis Year:	Buildout			Checked By:	
Analysis Period:	PM Street Peak Hour			Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office	710	37,500	SF	74	13	61
Retail	820	169,000	SF	823	395	428
Restaurant				0		
Cinema/Entertainment				0		
Residential				0		
Hotel				0		
All Other Land Uses ²				0		
				897	408	489

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.00	0%	0%	1.00	0%	0%
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant	1.00	0%	0%	1.00	0%	0%
Cinema/Entertainment	1.00	0%	0%	1.00	0%	0%
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses ²	1.00	0%	0%	1.00	0%	0%

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		12	0	0	0	0
Retail	4		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	897	408	489
Internal Capture Percentage	4%	4%	3%
External Vehicle-Trips ⁵	865	392	473
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	31%	20%
Retail	3%	1%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

¹ Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
² Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
³ Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i>).
⁴ Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made
⁵ Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.
⁶ Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Tributary DRI
Analysis Period:	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	13	13	1.00	61	61
Retail	1.00	395	395	1.00	428	428
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	0	0	1.00	0	0
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		12	2	0	1	0
Retail	9		124	17	111	21
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		32	0	0	0	0
Retail	4		0	0	0	0
Restaurant	4	198		0	0	0
Cinema/Entertainment	1	16	0		0	0
Residential	7	40	0	0		0
Hotel	0	8	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	4	9	13	9	0	0
Retail	12	383	395	383	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	12	49	61	49	0	0
Retail	4	424	428	424	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Tributary DRI			Organization:	ETM
Project Location:	Yulee, Florida			Performed By:	Thomas Hatcher, P.E., PTOE, PTP
Scenario Description:	Table 9 - Residential			Date:	12/18/2024
Analysis Year:	Buildout			Checked By:	
Analysis Period:	AM Street Peak Hour			Date:	12/18/2024

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	131,000	SF	227	141	86
Restaurant				0		
Cinema/Entertainment	420	300	Berths	21	7	14
Residential	210,251	2,900	DUs	1,209	307	902
Hotel				0		
All Other Land Uses ²				0		
				1,457	455	1,002

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.00	0%	0%	1.00	0%	0%
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant	1.00	0%	0%	1.00	0%	0%
Cinema/Entertainment	1.00	0%	0%	1.00	0%	0%
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses ²	1.00	0%	0%	1.00	0%	0%

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	6	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	9	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	1,457	455	1,002
Internal Capture Percentage	2%	3%	1%
External Vehicle-Trips ⁵	1,427	440	987
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	6%	7%
Restaurant	N/A	N/A
Cinema/Entertainment	0%	0%
Residential	2%	1%
Hotel	N/A	N/A

¹ Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
² Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
³ Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i>).
⁴ Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.
⁵ Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.
⁶ Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Tributary DRI
Analysis Period:	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	141	141	1.00	86	86
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	7	7	1.00	14	14
Residential	1.00	307	307	1.00	902	902
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	25		11	0	12	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	18	9	180	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		45	0	0	0	0
Retail	0		0	0	6	0
Restaurant	0	11		0	15	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	24	0	0		0
Hotel	0	6	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	9	132	141	132	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	7	7	7	0	0
Residential	6	301	307	301	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	6	80	86	80	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	14	14	14	0	0
Residential	9	893	902	893	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Tributary DRI			Organization:	ETM
Project Location:	Yulee, Florida			Performed By:	Thomas Hatcher, P.E., PTOE, PTP
Scenario Description:	Table 9 - Residential			Date:	12/18/2024
Analysis Year:	Buildout			Checked By:	
Analysis Period:	PM Street Peak Hour			Date:	12/18/2024

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	131,000	SF	680	333	347
Restaurant				0		
Cinema/Entertainment	420	300	Berths	63	38	25
Residential	210,251	2,900	DUs	1,745	1,098	647
Hotel				0		
All Other Land Uses ²				0		
				2,488	1,469	1,019

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.00	0%	0%	1.00	0%	0%
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant	1.00	0%	0%	1.00	0%	0%
Cinema/Entertainment	1.00	0%	0%	1.00	0%	0%
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses ²	1.00	0%	0%	1.00	0%	0%

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	10	90	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	5	0		2	0
Residential	0	33	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	2,488	1,469	1,019
Internal Capture Percentage	11%	10%	14%
External Vehicle-Trips ⁵	2,208	1,329	879
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	11%	29%
Restaurant	N/A	N/A
Cinema/Entertainment	26%	28%
Residential	8%	5%
Hotel	N/A	N/A

¹ Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
² Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
³ Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i>).
⁴ Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made
⁵ Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.
⁶ Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Tributary DRI
Analysis Period:	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	333	333	1.00	347	347
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	38	38	1.00	25	25
Residential	1.00	1098	1098	1.00	647	647
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	7		101	14	90	17
Restaurant	0	0		0	0	0
Cinema/Entertainment	1	5	8		2	1
Residential	26	272	136	0		19
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		27	0	0	44	0
Retail	0		0	10	505	0
Restaurant	0	167		12	176	0
Cinema/Entertainment	0	13	0		44	0
Residential	0	33	0	0		0
Hotel	0	7	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	38	295	333	295	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	10	28	38	28	0	0
Residential	92	1006	1098	1006	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	100	247	347	247	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	7	18	25	18	0	0
Residential	33	614	647	614	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Tributary DRI			Organization:	ETM
Project Location:	Yulee, Florida			Performed By:	Thomas Hatcher, P.E., PTOE, PTP
Scenario Description:	Table 10 - East Commercial			Date:	10/15/2024
Analysis Year:	Buildout			Checked By:	
Analysis Period:	AM Street Peak Hour			Date:	10/5/2024

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office	710	12,500	SF	28	25	3
Retail	820	200,000	SF	252	156	96
Restaurant				0		
Cinema/Entertainment				0		
Residential	220	300	DU	116	28	88
Hotel				0		
All Other Land Uses ²				0		
				396	209	187

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.00	0%	0%	1.00	0%	0%
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant	1.00	0%	0%	1.00	0%	0%
Cinema/Entertainment	1.00	0%	0%	1.00	0%	0%
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses ²	1.00	0%	0%	1.00	0%	0%

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	0	0	0	0
Retail	1		0	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	1	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	396	209	187
Internal Capture Percentage	3%	2%	3%
External Vehicle-Trips ⁵	386	204	182
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	8%	33%
Retail	1%	2%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	4%	2%
Hotel	N/A	N/A

¹ Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
² Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
³ Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i>).
⁴ Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.
⁵ Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.
⁶ Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Tributary DRI
Analysis Period:	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	25	25	1.00	3	3
Retail	1.00	156	156	1.00	96	96
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	28	28	1.00	88	88
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	2	0	0	0
Retail	28		12	0	13	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	1	18	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		50	0	0	0	0
Retail	1		0	0	1	0
Restaurant	4	12		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	27	0	0		0
Hotel	1	6	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	2	23	25	23	0	0
Retail	2	154	156	154	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	27	28	27	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	1	2	3	2	0	0
Retail	2	94	96	94	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	86	88	86	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Tributary DRI			Organization:	ETM
Project Location:	Yulee, Florida			Performed By:	Thomas Hatcher, P.E., PTOE, PTP
Scenario Description:	Table 10 - East Commercial			Date:	10/5/2024
Analysis Year:	Buildout			Checked By:	
Analysis Period:	PM Street Peak Hour			Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office	710	12,500	SF	30	5	25
Retail	820	200,000	SF	930	446	484
Restaurant				0		
Cinema/Entertainment				0		
Residential	220	300	DU	150	95	55
Hotel				0		
All Other Land Uses ²				0		
				1,110	546	564

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.00	0%	0%	1.00	0%	0%
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant	1.00	0%	0%	1.00	0%	0%
Cinema/Entertainment	1.00	0%	0%	1.00	0%	0%
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses ²	1.00	0%	0%	1.00	0%	0%

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	0	0	1	0
Retail	2		0	0	44	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	23	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	1,110	546	564
Internal Capture Percentage	14%	14%	14%
External Vehicle-Trips ⁵	956	469	487
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	80%	24%
Retail	6%	10%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	47%	45%
Hotel	N/A	N/A

¹ Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
² Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
³ Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i>).
⁴ Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made
⁵ Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.
⁶ Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Tributary DRI
Analysis Period:	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	5	5	1.00	25	25
Retail	1.00	446	446	1.00	484	484
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	95	95	1.00	55	55
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	1	0	1	0
Retail	10		140	19	126	24
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	23	12	0		2
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		36	0	0	4	0
Retail	2		0	0	44	0
Restaurant	2	223		0	15	0
Cinema/Entertainment	0	18	0		4	0
Residential	3	45	0	0		0
Hotel	0	9	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	4	1	5	1	0	0
Retail	28	418	446	418	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	45	50	95	50	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	6	19	25	19	0	0
Retail	46	438	484	438	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	25	30	55	30	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

²Person-Trips

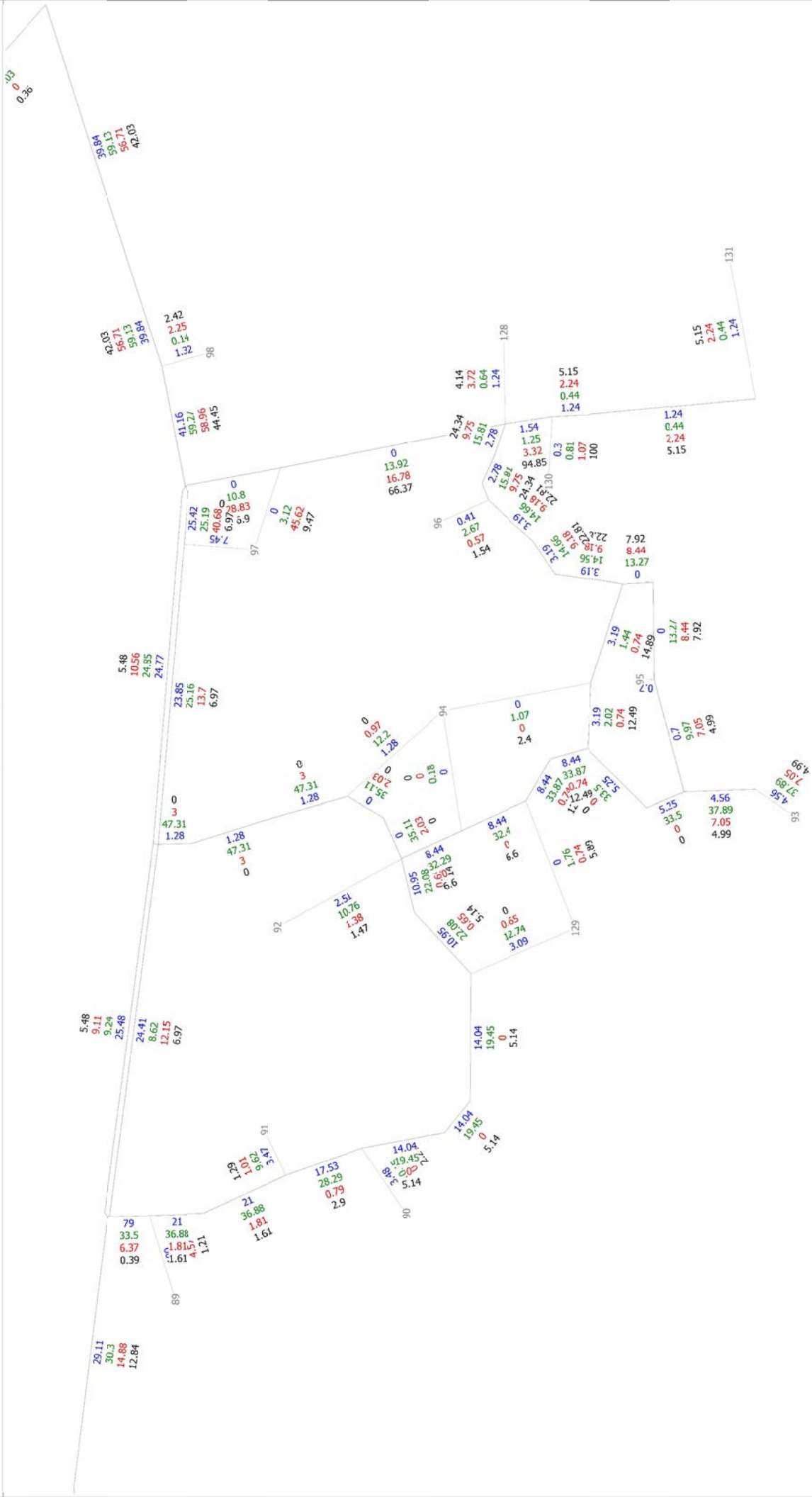
³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Appendix M

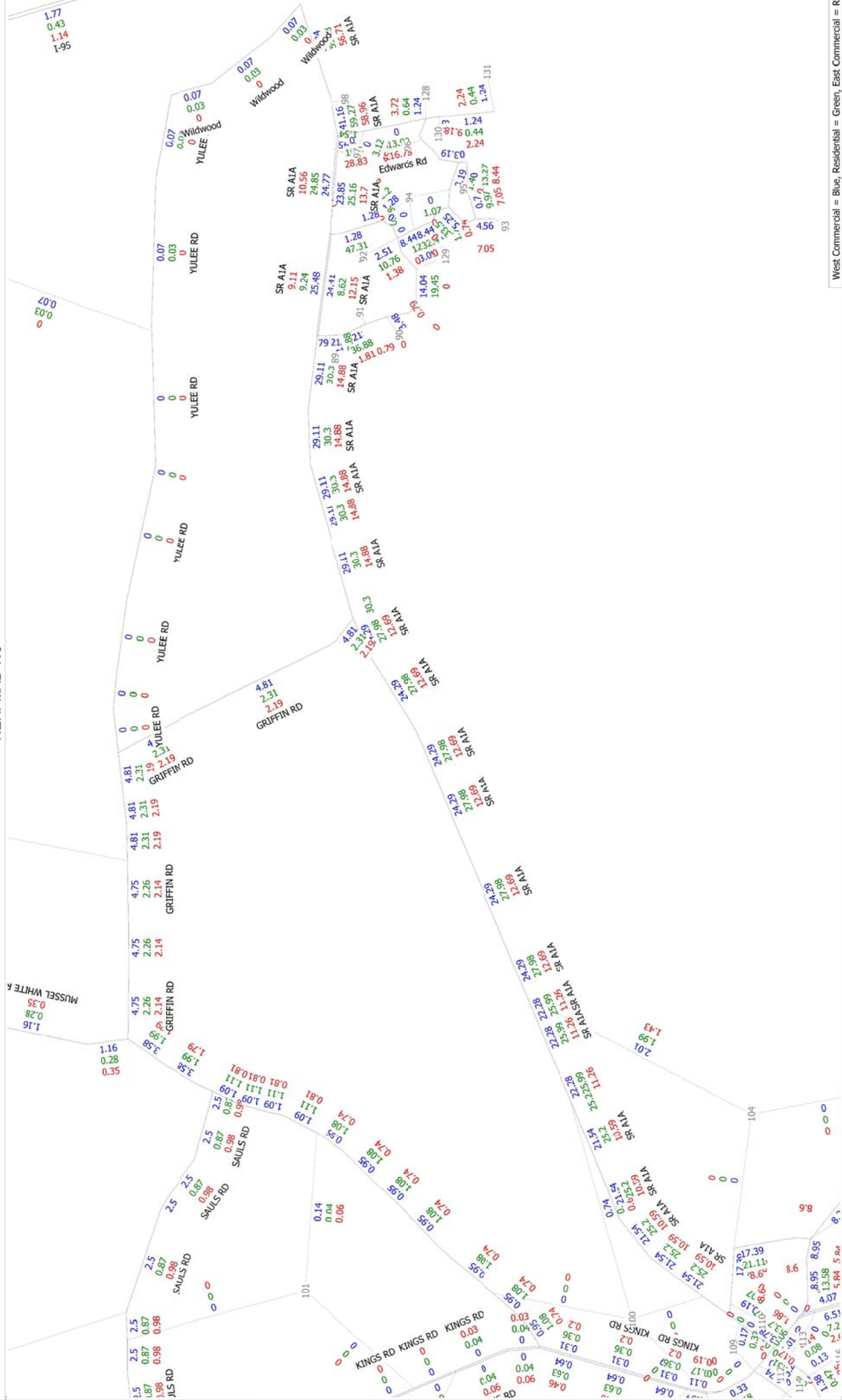
NERPM Distribution Plots

Tributary DRI
Segment Peak Hour Distribution
NERPMAB 1v3



West Commercial = Blue, Residential = Green, East Commercial = Red, School = Black
(Licensed to England-Thims & Miller Inc)

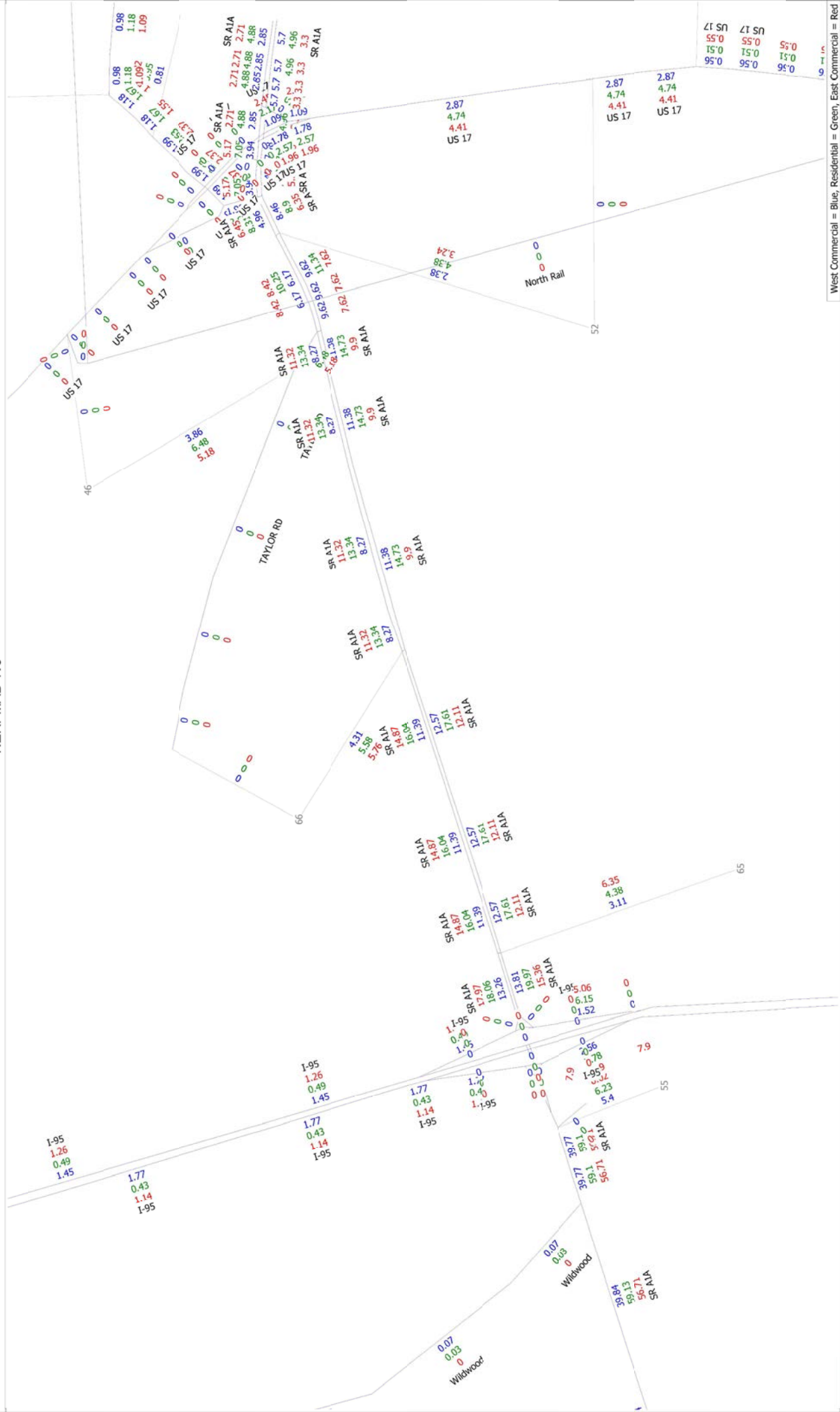
Tributary DRI
Segment Peak Hour Distribution
NERPMAB 1V3



West Commercial = Blue, Residential = Green, East Commercial = Red
(Licensed to England-Thims & Miller Inc)



Tributary DRI
Segment Peak Hour Distribution
NERPMAB 1V3

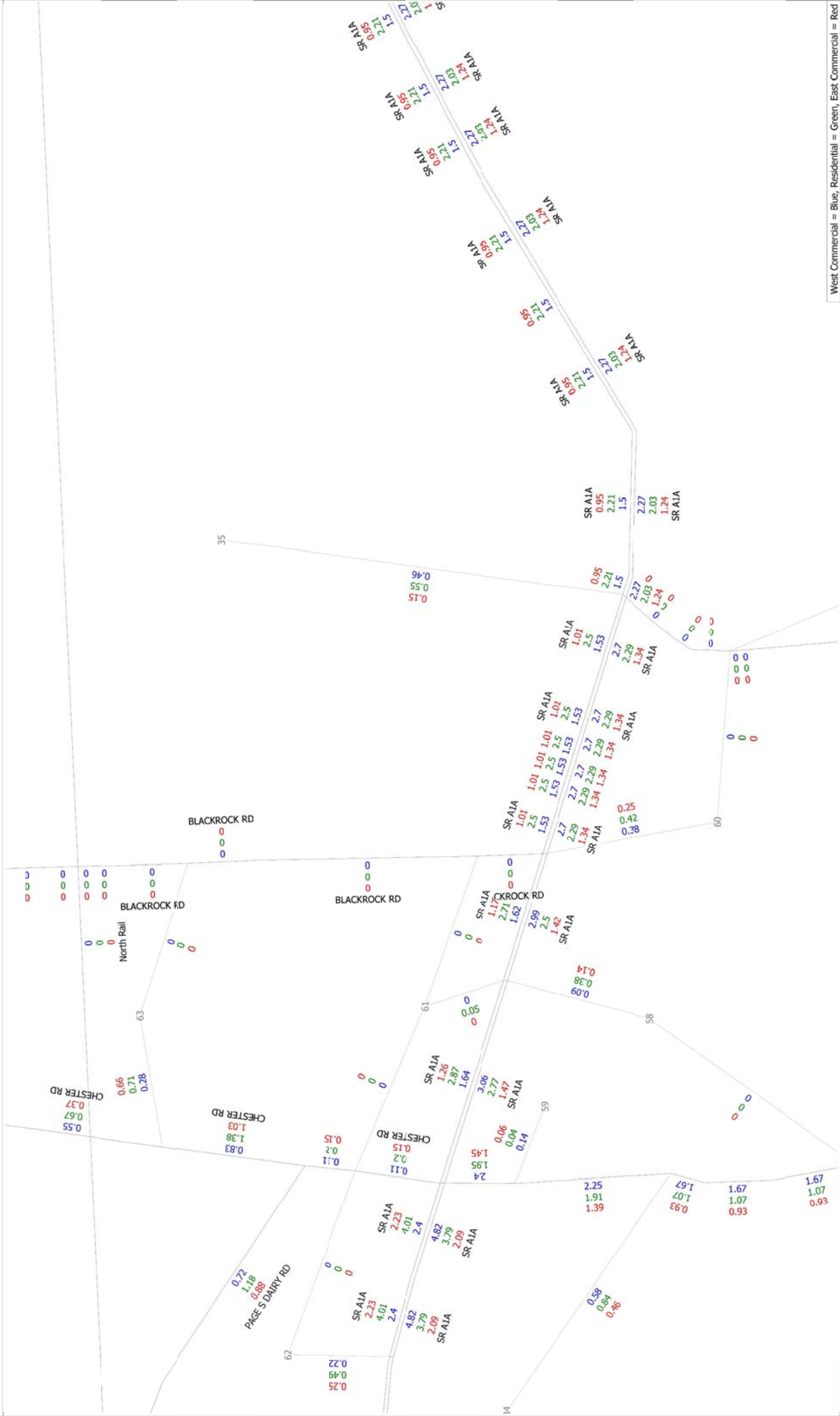


West Commercial = Blue, Residential = Green, East Commercial = Red
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Tributary DRI
Segment Peak Hour Distribution
NERPMAB 1V3

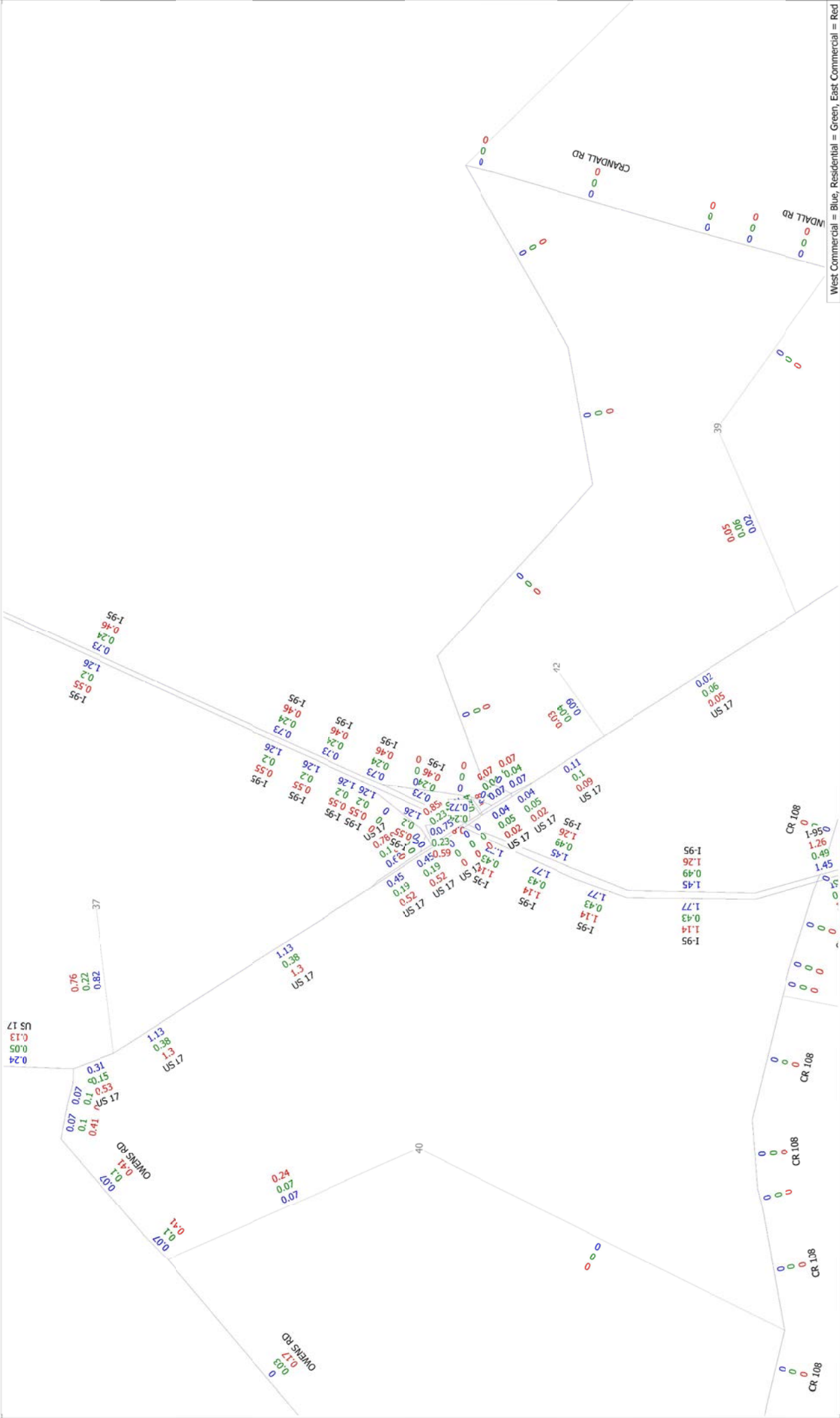


Tributary DRI
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