Appendices

Appendix A
Traffic Volumes

15th Ave N
Weekday

15th Ave & CSAH 9
Existing (2024)

Date collected: 7/2/2024
Date printed: 8/9/2024

Time	NB Utrn	NB Left	NB Thru	NB Right	South Approach Peds	South Approach Bikes	SB Utrn	SB Left	SB Thru	SB Right	North Approach Peds	North Approach Bikes	EB Utrn	EB Left	EB Thru	EB Right	West Approach Peds	West Approach Bikes	WB Utrn	WB Left	WB Thru	WB Right	East Approach Peds	East Approach Bikes	Int Total	Truck % by Hour
	NBU	NBL	NBT	NBR	EB-WB	EB-WB	SBU	SBL	SBT	SBR	EB-WB	EB-WB	EBU	EBL	EBT	EBR	NB-SB	NB-SB	WBU	WBL	WBT	WBR	NB-SB	NB-SB		
0:00	0	4	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	7	0%
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0%
2:00	0	3	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	6	0%
3:00	0	2	2	0	0	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	8	0%
4:00	0	8	5	0	0	0	0	0	0	1	0	0	0	0	0	4	0	0	0	0	0	0	0	0	18	0%
5:00	0	13	8	0	0	0	0	0	10	0	0	0	0	0	1	2	0	0	0	0	1	0	0	0	35	6%
6:00	0	32	16	0	0	0	0	0	11	1	0	0	0	0	1	9	0	0	0	1	7	0	0	0	78	0%
7:00	0	69	26	0	1	0	0	0	26	3	0	0	0	1	10	19	0	0	0	3	15	2	0	0	176	2%
8:00	0	27	19	1	0	0	0	1	17	1	0	0	0	0	4	24	0	0	0	0	9	0	0	0	103	11%
9:00	0	16	14	0	0	0	0	0	25	1	0	0	0	0	11	21	0	0	0	0	8	1	0	0	97	13%
10:00	0	14	18	0	0	0	0	1	13	2	0	0	0	0	7	25	0	0	0	0	6	0	0	0	86	14%
11:00	0	14	16	0	0	0	0	0	16	1	0	0	0	3	6	22	0	0	0	2	4	0	0	0	84	11%
12:00	0	23	25	1	0	0	0	0	28	2	0	0	0	0	4	29	0	0	0	0	3	0	0	0	115	10%
13:00	0	10	20	1	0	0	0	0	19	1	0	0	2	2	9	16	0	0	0	0	4	1	0	0	85	11%
14:00	1	11	26	0	0	0	0	0	27	3	0	0	0	0	8	27	0	0	0	1	7	1	1	0	113	6%
15:00	1	16	24	3	0	0	0	1	21	3	0	0	0	7	12	37	0	0	0	2	6	1	0	0	134	7%
16:00	0	24	41	1	0	0	0	2	34	2	0	0	1	4	25	63	1	0	0	1	9	0	0	0	208	5%
17:00	0	32	37	1	0	0	0	2	38	2	0	0	0	5	17	80	0	0	0	1	12	0	0	0	227	1%
18:00	1	38	21	0	0	0	0	2	19	1	0	0	0	3	9	33	0	0	0	0	5	1	0	0	133	3%
19:00	0	16	22	0	0	0	0	0	14	0	0	0	0	5	6	27	0	0	0	0	5	2	0	0	97	0%
20:00	0	15	14	1	0	0	0	0	22	2	0	0	0	3	9	29	0	0	0	0	2	0	0	0	97	0%
21:00	0	9	15	0	0	0	0	0	9	0	0	0	0	0	5	19	0	0	0	0	0	0	0	0	57	0%
22:00	0	5	8	0	0	0	0	1	7	1	0	0	0	0	2	22	0	0	0	0	0	0	0	0	46	0%
23:00	0	1	0	1	0	0	0	0	0	2	0	0	0	2	0	6	0	0	0	0	0	0	0	0	12	0%
Total	3	402	378	10	1	0	0	11	360	29	0	0	3	35	147	519	1	0	0	11	103	9	1	0	2023	
Approach Total		794						400						705						124						
Truck % By Approach		6%						13%						1%						2%						
Right Turn %			1%						7%						74%						7%					

	NB Utrn	NB Left	NB Thru	NB Right	South Approach Peds	South Approach Bikes	SB Utrn	SB Left	SB Thru	SB Right	North Approach Peds	North Approach Bikes	EB Utrn	EB Left	EB Thru	EB Right	West Approach Peds	West Approach Bikes	WB Utrn	WB Left	WB Thru	WB Right	East Approach Peds	East Approach Bikes	Peak Start	PHF
AM Peak	0	69	26	0	1	0	0	1	26	3	0	0	0	1	10	19	0	0	0	3	15	2	0	0	7:00:00 AM	0.86
MD Peak	0	23	25	1	0	0	0	0	28	2	0	0	0	0	4	29	0	0	0	0	3	0	0	0	12:00:00 PM	0.87
PM Peak	0	28	39	1	0	0	0	2	45	2	0	0	0	3	30	72	1	0	0	2	13	0	0	0	4:15:00 PM	0.88

15th Ave N

Weekday

15th Ave & 50th St
Existing (2024)

Date collected: 7/2/2024
Date printed: 8/9/2024

Time	NB Utrn (NBU)	NB Left (NBL)	NB Thru (NBT)	NB Right (NBR)	South Approach Peds (EB-WB)	South Approach Bikes (EB-WB)	SB Utrn (SBU)	SB Left (SBL)	SB Thru (SBT)	SB Right (SBR)	North Approach Peds (EB-WB)	North Approach Bikes (EB-WB)	EB Utrn (EBU)	EB Left (EBL)	EB Thru (EBT)	EB Right (EBR)	West Approach Peds (NB-SB)	West Approach Bikes (NB-SB)	WB Utrn (WBU)	WB Left (WBL)	WB Thru (WBT)	WB Right (WBR)	East Approach Peds (NB-SB)	East Approach Bikes (NB-SB)	Int Total	Truck % by Hour
0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0%
4:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0%
5:00	0	1	4	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	8	0%
6:00	0	7	3	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	13	0%
7:00	0	11	4	0	0	0	0	0	4	0	0	0	0	0	3	9	0	0	0	1	1	0	0	0	33	0%
8:00	0	11	1	0	0	0	0	0	1	0	0	0	0	0	2	4	0	0	0	0	1	0	0	0	20	10%
9:00	0	7	0	0	0	0	0	0	0	0	0	0	0	0	3	8	0	0	0	1	0	0	0	0	19	0%
10:00	1	3	3	2	0	0	0	0	1	0	0	0	0	0	3	5	0	0	0	1	2	0	0	0	21	0%
11:00	0	6	0	0	0	0	0	0	1	0	0	0	0	0	0	5	0	0	0	0	1	0	0	0	13	8%
12:00	0	1	1	0	0	0	0	0	0	1	0	0	0	0	2	4	0	0	0	0	1	1	0	0	11	9%
13:00	0	4	1	1	0	0	0	0	3	0	0	0	0	0	1	9	0	0	0	0	1	0	0	0	20	0%
14:00	0	8	2	0	0	0	0	0	3	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	21	0%
15:00	1	7	4	0	0	0	0	0	7	1	0	0	0	0	3	11	0	0	0	0	0	0	1	0	35	0%
16:00	0	11	2	0	0	0	0	0	7	0	0	0	0	0	2	25	0	0	0	2	1	0	1	0	51	0%
17:00	0	9	4	1	0	0	0	0	7	0	0	0	0	0	3	18	1	0	0	3	2	0	0	0	48	0%
18:00	0	6	3	0	0	0	0	0	6	0	0	0	0	0	3	8	0	0	0	1	0	0	1	0	28	7%
19:00	0	7	3	0	0	0	0	0	5	0	0	0	0	0	0	6	0	0	0	1	0	0	0	0	22	0%
20:00	2	2	1	0	0	0	0	0	1	0	0	0	0	0	2	8	0	0	0	0	0	0	0	0	16	0%
21:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	7	0%
22:00	0	0	2	0	0	0	0	0	2	0	0	0	0	0	1	2	0	0	0	1	0	0	0	0	8	0%
23:00	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0%
Total	4	104	38	6	0	0	0	0	52	2	0	0	0	0	30	136	1	0	0	11	11	1	3	0	399	

	NB	SB	EB	WB
Approach Total	152	54	167	26
Truck % By Approach	1%	0%	3%	0%
Right Turn %	4%	4%	82%	4%

	NB Utrn	NB Left	NB Thru	NB Right	South Approach Peds	South Approach Bikes	SB Utrn	SB Left	SB Thru	SB Right	North Approach Peds	North Approach Bikes	EB Utrn	EB Left	EB Thru	EB Right	West Approach Peds	West Approach Bikes	WB Utrn	WB Left	WB Thru	WB Right	East Approach Peds	East Approach Bikes	Peak Start	PHF
AM Peak	0	10	6	0	0	0	0	0	3	0	0	0	0	0	4	9	0	0	0	0	1	0	0	0	6:45:00 AM	0.83
MD Peak	0	7	3	0	0	0	0	0	1	0	0	0	0	0	2	8	0	0	0	0	0	0	0	0	9:30:00 AM	0.53
PM Peak	0	13	5	0	0	0	0	0	9	0	0	0	0	0	1	30	0	0	0	4	3	0	0	0	4:15:00 PM	0.90

15th Ave N
Weekday

15th Ave & 60th St
Future (2045)

Date collected: 7/2/2024
Date printed: 8/9/2024

Time	NB Utrn	NB Left	NB Thru	NB Right	South Approach Peds	South Approach Bikes	SB Utrn	SB Left	SB Thru	SB Right	North Approach Peds	North Approach Bikes	EB Utrn	EB Left	EB Thru	EB Right	West Approach Peds	West Approach Bikes	WB Utrn	WB Left	WB Thru	WB Right	East Approach Peds	East Approach Bikes	Int Total	Truck % by Hour
	NBU	NBL	NBT	NBR	EB-WB	EB-WB	SBU	SBL	SBT	SBR	EB-WB	EB-WB	EBU	EBL	EBT	EBR	NB-SB	NB-SB	WBU	WBL	WBT	WBR	NB-SB	NB-SB		
0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0%
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	3	0%
7:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	1	0	0	0	5	20%
8:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	3	33%
9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	1	1	0	0	5	0%
10:00	0	0	0	0	0	0	0	0	0	2	0	0	0	2	1	1	0	0	0	0	1	0	0	0	7	0%
11:00	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	4	0%
12:00	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2	0	0	0	0	0	1	0	0	0	5	40%
13:00	0	0	0	0	0	0	1	1	1	0	0	0	0	0	2	0	0	0	0	0	1	2	0	0	8	25%
14:00	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0%
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	3	33%
16:00	0	2	0	0	0	0	0	0	1	0	0	0	0	0	4	0	0	0	0	0	1	1	0	0	9	13%
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	7	0	0	0	11	0%
18:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4	0	0	0	0	0	1	0	0	0	6	40%
19:00	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0%
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0%
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	3	0%
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Total	0	2	4	0	0	0	2	1	7	4	0	0	0	2	31	4	0	0	0	0	18	5	0	0	80	

Approach Total			6						14						37						23					
Forecasted Approach ADT		20						30						60						60						
Existing Approach ADT		20						30						50						60						
% Change in ADT (annual)		0.00%						0.00%						0.87%						0.00%						

Truck % By Approach: 0% | 14% | 11% | 17%

Right Turn %: 0% | 29% | 11% | 22%

	NB Utrn	NB Left	NB Thru	NB Right	South Approach Peds	South Approach Bikes	SB Utrn	SB Left	SB Thru	SB Right	North Approach Peds	North Approach Bikes	EB Utrn	EB Left	EB Thru	EB Right	West Approach Peds	West Approach Bikes	WB Utrn	WB Left	WB Thru	WB Right	East Approach Peds	East Approach Bikes	Peak Start	PHF
AM Peak	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	1	0	0	0	6:45:00 AM	0.75
MD Peak	0	0	1	0	0	0	0	0	0	2	0	0	0	2	2	1	0	0	0	0	2	0	0	0	#########	0.50
PM Peak	0	0	1	0	0	0	0	0	0	2	0	0	0	2	2	1	0	0	0	0	2	0	0	0	4:15:00 PM	0.50

15th Ave & 70th St
Existing (2024)

15th Ave N — Weekday

Date collected: 7/2/2024
Date printed: 8/9/2024

Time	NB Utrn	NB Left	NB Thru	NB Right	South Approach Peds	South Approach Bikes	SB Utrn	SB Left	SB Thru	SB Right	North Approach Peds	North Approach Bikes	EB Utrn	EB Left	EB Thru	EB Right	West Approach Peds	West Approach Bikes	WB Utrn	WB Left	WB Thru	WB Right	East Approach Peds	East Approach Bikes	Int Total	Truck % by Hour
	NBU	NBL	NBT	NBR	EB-WB	EB-WB	SBU	SBL	SBT	SBR	EB-WB	EB-WB	EBU	EBL	EBT	EBR	NB-SB	NB-SB	WBU	WBL	WBT	WBR	NB-SB	NB-SB		
0:00	0	0	6	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0%
1:00	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0%
2:00	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0%
3:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0%
4:00	0	0	4	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0%
5:00	0	0	27	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	50	14%
6:00	0	1	69	0	0	0	0	0	71	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	144	10%
7:00	0	1	62	0	0	0	0	0	106	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	171	9%
8:00	0	1	58	0	0	0	0	0	104	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	165	20%
9:00	0	1	45	0	0	0	0	0	64	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	112	24%
10:00	0	0	63	1	0	0	0	1	85	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	152	21%
11:00	0	1	50	1	2	0	0	2	83	0	2	0	0	0	0	0	0	0	0	0	1	1	2	0	145	21%
12:00	1	1	53	0	0	0	0	0	65	0	1	0	0	0	0	2	0	0	0	1	0	0	0	0	124	20%
13:00	0	2	59	0	0	0	0	0	88	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	152	21%
14:00	0	0	70	1	0	0	0	0	71	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	144	26%
15:00	0	0	62	1	0	0	0	0	84	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	149	19%
16:00	0	0	77	0	0	0	0	0	95	2	0	0	0	0	0	3	0	0	0	2	1	0	0	0	180	21%
17:00	0	6	87	0	0	0	0	0	120	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	215	12%
18:00	0	1	72	0	0	0	0	0	62	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	139	6%
19:00	0	0	37	1	0	0	0	0	48	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	87	3%
20:00	0	0	37	0	0	0	0	0	27	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	66	8%
21:00	0	0	27	1	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	6%
22:00	0	1	22	0	0	0	0	0	14	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	39	0%
23:00	0	0	10	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0%
Total	1	16	1001	6	2	0	0	3	1246	3	4	0	0	2	1	25	0	0	0	8	3	1	2	0	2324	
Approach Total		1026						1256						28						14						
Truck % By Approach		12%						19%						18%						8%						
Right Turn %			1%						0%						89%						8%					

	NB Utrn	NB Left	NB Thru	NB Right	South Approach Peds	South Approach Bikes	SB Utrn	SB Left	SB Thru	SB Right	North Approach Peds	North Approach Bikes	EB Utrn	EB Left	EB Thru	EB Right	West Approach Peds	West Approach Bikes	WB Utrn	WB Left	WB Thru	WB Right	East Approach Peds	East Approach Bikes	Peak Start	PHF
AM Peak	0	0	59	0	0	0	0	0	122	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	7:15:00 AM	0.92
MD Peak	0	2	72	0	0	0	0	0	83	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1:15:00 PM	0.87
PM Peak	0	6	87	0	0	0	0	0	120	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	5:00:00 PM	0.81

Appendix B
Traffic Operations Results

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	15th Ave & 60th Street	All-way stop	HCM 2010	EB Thru	0.005	6.9	A
22	15th Ave & 40th Street	Two-way stop	HCM 2010	WB Thru	0.022	10.5	B
25	15th Ave & 50th Street	All-way stop	HCM 2010	NB Left	0.019	6.9	A
28	15th Ave & 70th Street	Two-way stop	HCM 2010	EB Thru	0.001	10.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: 15th Ave & 60th Street

Control Type:	All-way stop	Delay (sec / veh):	6.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	60th Street North								15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	60th Street North								15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	1	1	1	0	1	1	1	0	1	3	1	0	1	1	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	1	1	0	1	1	1	0	1	3	1	0	1	1	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Total Analysis Volume [veh/h]	0	1	1	1	0	1	1	1	0	1	3	1	0	1	1	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	943	943	931	943
Degree of Utilization, x	0.00	0.00	0.01	0.00

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.01	0.01	0.02	0.01
95th-Percentile Queue Length [m]	0.07	0.07	0.12	0.07
Approach Delay [s/veh]	6.83	6.83	6.89	6.83
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	6.85			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 22: 15th Ave & 40th Street

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	⊹				⊹				⊹				⊹			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	100.00				100.00				100.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	69	26	1	0	1	26	3	0	1	10	19	0	3	15	2
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	6.00	6.00	6.00	0.00	13.00	13.00	13.00	0.00	1.00	1.00	1.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	69	26	1	0	1	26	3	0	1	10	19	0	3	15	2
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	17	7	0	0	0	7	1	0	0	3	5	0	1	4	1
Total Analysis Volume [veh/h]	0	69	26	1	0	1	26	3	0	1	10	19	0	3	15	2
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free				Free				Stop				Stop			
Flared Lane									No				No			
Storage Area [veh]	0				0				0				0			
Two-Stage Gap Acceptance									No				No			
Number of Storage Spaces in Median	0				0				0				0			

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	8.40	7.42	0.00	0.00	8.23	7.37	0.00	0.00	10.15	10.16	10.52	8.57	10.25	10.28	10.54	8.58
Movement LOS	A	A	A	A	A	A	A	A	B	B	B	A	B	B	B	A
95th-Percentile Queue Length [veh/ln]	0.14	0.14	0.14	0.14	0.00	0.00	0.00	0.00	0.11	0.11	0.11	0.11	0.09	0.09	0.09	0.09
95th-Percentile Queue Length [m/ln]	1.06	1.06	1.06	1.06	0.02	0.02	0.02	0.02	0.81	0.81	0.81	0.81	0.67	0.67	0.67	0.67
d_A, Approach Delay [s/veh]	5.33				0.25				9.27				10.31			
Approach LOS	A				A				A				B			
d_I, Intersection Delay [s/veh]	5.70															
Intersection LOS	B															

Intersection Level Of Service Report
Intersection 25: 15th Ave & 50th Street

Control Type:	All-way stop	Delay (sec / veh):	6.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	10	6	1	0	1	3	1	0	1	4	9	0	1	1	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	10	6	1	0	1	3	1	0	1	4	9	0	1	1	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	3	2	0	0	0	1	0	0	0	1	2	0	0	0	0
Total Analysis Volume [veh/h]	0	10	6	1	0	1	3	1	0	1	4	9	0	1	1	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	896	931	1006	941
Degree of Utilization, x	0.02	0.01	0.01	0.00

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.06	0.02	0.04	0.01
95th-Percentile Queue Length [m]	0.44	0.12	0.32	0.07
Approach Delay [s/veh]	7.10	6.89	6.63	6.84
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	6.88			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 28: 15th Ave & 70th Street

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	88.51				88.51				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	1	59	1	0	1	122	1	0	1	1	2	0	1	1	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	59	1	0	1	122	1	0	1	1	2	0	1	1	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	0	15	0	0	0	31	0	0	0	0	1	0	0	0	0
Total Analysis Volume [veh/h]	0	1	59	1	0	1	122	1	0	1	1	2	0	1	1	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.73	7.44	0.00	0.00	8.39	7.31	0.00	0.00	9.66	9.66	10.09	8.88	9.67	9.67	10.08	8.57
Movement LOS	A	A	A	A	A	A	A	A	A	A	B	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
95th-Percentile Queue Length [m/ln]	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.11	0.11	0.11	0.11	0.08	0.08	0.08	0.08
d_A, Approach Delay [s/veh]	0.12				0.06				9.38				9.44			
Approach LOS	A				A				A				A			
d_I, Intersection Delay [s/veh]	0.42															
Intersection LOS	B															

Vistro File: K:\...\15th Ave Vistro.vistro

Report File: K:\...\Existing AM.pdf

Scenario 1 Existing AM

7/26/2024

Network Statistics

Number of Intersections	4
- Signalized	*0*
- Roundabout	*0*
- Two-way stop	*2*
- Two-way yield	*0*
- All-way stop	*2*
- Uncontrolled	*0*
- Unknown	*0*
Number of Links	26
Number of Zones	0
Number of Gates	0
Number of Paths	0
Number of Routes	0
Total Link Length [km]	32.0
Network Width [km]	6.3
Network Height [km]	2.8
Total Fuel Consumption [L/h]	0.0
Total Emitted CO [g/h]	0.0
Total Emitted NOx [g/h]	0.0
Total Emitted VOC [g/h]	0.0

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	15th Ave & 60th Street	All-way stop	HCM 2010	EB Left	0.005	6.8	A
22	15th Ave & 40th Street	Two-way stop	HCM 2010	WB Left	0.003	10.4	B
25	15th Ave & 50th Street	All-way stop	HCM 2010	NB Left	0.031	6.9	A
28	15th Ave & 70th Street	Two-way stop	HCM 2010	EB Thru	0.002	10.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: 15th Ave & 60th Street

Control Type:	All-way stop	Delay (sec / veh):	6.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	60th Street North								15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	60th Street North								15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	1	1	1	0	1	1	2	0	2	2	1	0	1	2	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	1	1	0	1	1	2	0	2	2	1	0	1	2	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	0
Total Analysis Volume [veh/h]	0	1	1	1	0	1	1	2	0	2	2	1	0	1	2	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	942	972	921	935
Degree of Utilization, x	0.00	0.00	0.01	0.00

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.01	0.01	0.02	0.01
95th-Percentile Queue Length [m]	0.07	0.09	0.12	0.10
Approach Delay [s/veh]	6.84	6.72	6.93	6.87
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	6.85			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 22: 15th Ave & 40th Street

Control Type:	Two-way stop	Delay (sec / veh):	10.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	100.00				100.00				100.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	28	39	1	0	2	45	2	0	3	30	72	0	2	13	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	6.00	6.00	6.00	0.00	13.00	13.00	13.00	0.00	1.00	1.00	1.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	28	39	1	0	2	45	2	0	3	30	72	0	2	13	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	7	10	0	0	1	11	1	0	1	8	18	0	1	3	0
Total Analysis Volume [veh/h]	0	28	39	1	0	2	45	2	0	3	30	72	0	2	13	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.07	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	8.62	7.39	0.00	0.00	8.30	7.40	0.00	0.00	10.04	10.05	10.43	9.02	10.40	10.43	10.04	8.60
Movement LOS	A	A	A	A	A	A	A	A	B	B	B	A	B	B	B	A
95th-Percentile Queue Length [veh/ln]	0.06	0.06	0.06	0.06	0.00	0.00	0.00	0.00	0.39	0.39	0.39	0.39	0.07	0.07	0.07	0.07
95th-Percentile Queue Length [m/ln]	0.42	0.42	0.42	0.42	0.03	0.03	0.03	0.03	2.96	2.96	2.96	2.96	0.51	0.51	0.51	0.51
d_A, Approach Delay [s/veh]	3.04				0.30				9.45				10.00			
Approach LOS	A				A				A				A			
d_I, Intersection Delay [s/veh]	5.77															
Intersection LOS	B															

Intersection Level Of Service Report
Intersection 25: 15th Ave & 50th Street

Control Type:	All-way stop	Delay (sec / veh):	6.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.031

Intersection Setup

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	🛧				🛧				🛧				🛧			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	13	5	1	0	1	9	1	0	1	1	30	0	4	3	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	13	5	1	0	1	9	1	0	1	1	30	0	4	3	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	3	1	0	0	0	2	0	0	0	0	8	0	1	1	0
Total Analysis Volume [veh/h]	0	13	5	1	0	1	9	1	0	1	1	30	0	4	3	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	873	902	1043	889
Degree of Utilization, x	0.02	0.01	0.03	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.07	0.04	0.09	0.03
95th-Percentile Queue Length [m]	0.51	0.28	0.72	0.21
Approach Delay [s/veh]	7.22	7.04	6.56	7.09
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	6.87			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 28: 15th Ave & 70th Street

Control Type:	Two-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	88.51				88.51				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	6	87	1	0	1	120	1	0	1	1	2	0	1	1	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	10.00	10.00	10.00	0.00	15.00	15.00	15.00	0.00	16.00	16.00	16.00	0.00	8.00	8.00	8.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	6	87	1	0	1	120	1	0	1	1	2	0	1	1	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	2	22	0	0	0	30	0	0	0	0	1	0	0	0	0
Total Analysis Volume [veh/h]	0	6	87	1	0	1	120	1	0	1	1	2	0	1	1	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.73	7.55	0.00	0.00	8.54	7.52	0.00	0.00	9.94	10.17	10.57	9.05	9.94	10.06	10.45	8.79
Movement LOS	A	A	A	A	A	A	A	A	A	B	B	A	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01
95th-Percentile Queue Length [m/ln]	0.10	0.10	0.10	0.10	0.02	0.02	0.02	0.02	0.12	0.12	0.12	0.12	0.09	0.09	0.09	0.09
d_A, Approach Delay [s/veh]	0.48				0.06				9.71				9.77			
Approach LOS	A				A				A				A			
d_I, Intersection Delay [s/veh]	0.54															
Intersection LOS	B															

Vistro File: K:\...\15th Ave Vistro.vistro

Report File: K:\...\Existing PM.pdf

Scenario 2 Existing PM

7/26/2024

Network Statistics

Number of Intersections	4
- Signalized	*0*
- Roundabout	*0*
- Two-way stop	*2*
- Two-way yield	*0*
- All-way stop	*2*
- Uncontrolled	*0*
- Unknown	*0*
Number of Links	26
Number of Zones	0
Number of Gates	0
Number of Paths	0
Number of Routes	0
Total Link Length [km]	32.0
Network Width [km]	6.3
Network Height [km]	2.8
Total Fuel Consumption [L/h]	0.0
Total Emitted CO [g/h]	0.0
Total Emitted NOx [g/h]	0.0
Total Emitted VOC [g/h]	0.0

Vistro File: K:\...\15th Ave Vistro.vistro

Report File: K:\...\Build 2045 AM.pdf

Scenario 3 Forecast AM

7/26/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	15th Ave & 60th Street	All-way stop	HCM 2010	NB Left	0.101	7.6	A
22	15th Ave & 40th Street	Two-way stop	HCM 2010	EB Left	0.002	14.1	B
25	15th Ave & 50th Street	All-way stop	HCM 2010	WB Thru	0.154	7.6	A
28	15th Ave & 70th Street	Two-way stop	HCM 2010	EB Thru	0.002	11.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: 15th Ave & 60th Street

Control Type:	All-way stop	Delay (sec / veh):	7.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.101

Intersection Setup

Name	60th Street North								15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	60th Street North								15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	78	1	4	0	1	1	1	0	1	41	22	0	5	57	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	78	1	4	0	1	1	1	0	1	41	22	0	5	57	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	20	0	1	0	0	0	0	0	0	10	6	0	1	14	0
Total Analysis Volume [veh/h]	0	78	1	4	0	1	1	1	0	1	41	22	0	5	57	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	825	865	902	857
Degree of Utilization, x	0.10	0.00	0.07	0.07

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.33	0.01	0.23	0.24
95th-Percentile Queue Length [m]	2.55	0.08	1.74	1.81
Approach Delay [s/veh]	7.86	7.18	7.30	7.53
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.58			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 22: 15th Ave & 40th Street

Control Type:	Two-way stop	Delay (sec / veh):	14.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	⊬				⊬				⊬				⊬			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	100.00				100.00				100.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	85	63	1	0	18	36	27	0	1	48	23	0	8	109	51
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	6.00	6.00	6.00	0.00	13.00	13.00	13.00	0.00	1.00	1.00	1.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	85	63	1	0	18	36	27	0	1	48	23	0	8	109	51
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	21	16	0	0	5	9	7	0	0	12	6	0	2	27	13
Total Analysis Volume [veh/h]	0	85	63	1	0	18	36	27	0	1	48	23	0	8	109	51
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.06	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.09	0.02	0.00	0.02	0.20	0.05
d_M, Delay for Movement [s/veh]	8.62	7.52	0.00	0.00	8.62	7.48	0.00	0.00	14.06	14.09	12.16	9.22	13.94	13.98	13.64	10.65
Movement LOS	A	A	A	A	A	A	A	A	B	B	B	A	B	B	B	B
95th-Percentile Queue Length [veh/ln]	0.18	0.18	0.18	0.18	0.04	0.04	0.04	0.04	0.37	0.37	0.37	0.37	1.07	1.07	1.07	1.07
95th-Percentile Queue Length [m/ln]	1.36	1.36	1.36	1.36	0.28	0.28	0.28	0.28	2.84	2.84	2.84	2.84	8.13	8.13	8.13	8.13
d_A, Approach Delay [s/veh]	4.29				1.66				11.24				12.75			
Approach LOS	A				A				B				B			
d_I, Intersection Delay [s/veh]	7.93															
Intersection LOS	B															

Intersection Level Of Service Report
Intersection 25: 15th Ave & 50th Street

Control Type:	All-way stop	Delay (sec / veh):	7.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.154

Intersection Setup

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	✚				✚				✚				✚			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	22	7	1	0	1	4	1	0	1	62	11	0	1	135	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	22	7	1	0	1	4	1	0	1	62	11	0	1	135	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	6	2	0	0	0	1	0	0	0	16	3	0	0	34	0
Total Analysis Volume [veh/h]	0	22	7	1	0	1	4	1	0	1	62	11	0	1	135	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	803	835	894	889
Degree of Utilization, x	0.04	0.01	0.08	0.15

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.12	0.02	0.27	0.54
95th-Percentile Queue Length [m]	0.89	0.17	2.06	4.14
Approach Delay [s/veh]	7.65	7.34	7.39	7.79
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.64			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 28: 15th Ave & 70th Street

Control Type:	Two-way stop	Delay (sec / veh):	11.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	88.51				88.51				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	48	73	1	0	1	150	13	0	10	1	33	0	1	1	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	48	73	1	0	1	150	13	0	10	1	33	0	1	1	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	12	18	0	0	0	38	3	0	3	0	8	0	0	0	0
Total Analysis Volume [veh/h]	0	48	73	1	0	1	150	13	0	10	1	33	0	1	1	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.04	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.19	7.61	0.00	0.00	8.47	7.34	0.00	0.00	11.17	11.17	11.55	9.29	11.30	11.30	11.36	8.65
Movement LOS	A	A	A	A	A	A	A	A	B	B	B	A	B	B	B	A
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.17	0.17	0.17	0.17	0.01	0.01	0.01	0.01
95th-Percentile Queue Length [m/ln]	0.79	0.79	0.79	0.79	0.01	0.01	0.01	0.01	1.33	1.33	1.33	1.33	0.10	0.10	0.10	0.10
d_A, Approach Delay [s/veh]	2.99				0.04				9.77				10.44			
Approach LOS	A				A				A				B			
d_I, Intersection Delay [s/veh]	2.50															
Intersection LOS	B															

Network Statistics

Number of Intersections	4
- Signalized	*0*
- Roundabout	*0*
- Two-way stop	*2*
- Two-way yield	*0*
- All-way stop	*2*
- Uncontrolled	*0*
- Unknown	*0*
Number of Links	26
Number of Zones	0
Number of Gates	0
Number of Paths	0
Number of Routes	0
Total Link Length [km]	32.0
Network Width [km]	6.3
Network Height [km]	2.8
Total Fuel Consumption [L/h]	0.0
Total Emitted CO [g/h]	0.0
Total Emitted NOx [g/h]	0.0
Total Emitted VOC [g/h]	0.0

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	15th Ave & 60th Street	All-way stop	HCM 2010	NB Left	0.185	7.7	A
22	15th Ave & 40th Street	Two-way stop	HCM 2010	WB Left	0.014	16.6	C
25	15th Ave & 50th Street	All-way stop	HCM 2010	EB Thru	0.231	8.1	A
28	15th Ave & 70th Street	Two-way stop	HCM 2010	EB Thru	0.002	12.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: 15th Ave & 60th Street

Control Type:	All-way stop	Delay (sec / veh):	7.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.185

Intersection Setup

Name	60th Street North								15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	60th Street North								15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	45	1	5	0	1	1	2	0	2	92	79	0	6	46	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	45	1	5	0	1	1	2	0	2	92	79	0	6	46	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	11	0	1	0	0	0	1	0	1	23	20	0	2	12	0
Total Analysis Volume [veh/h]	0	45	1	5	0	1	1	2	0	2	92	79	0	6	46	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	796	855	936	851
Degree of Utilization, x	0.06	0.00	0.18	0.06

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.20	0.01	0.68	0.20
95th-Percentile Queue Length [m]	1.56	0.11	5.14	1.52
Approach Delay [s/veh]	7.83	7.23	7.71	7.51
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.69			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 22: 15th Ave & 40th Street

Control Type:	Two-way stop	Delay (sec / veh):	16.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.014

Intersection Setup

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	100.00				100.00				100.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	35	57	6	0	64	71	27	0	4	138	89	0	5	80	25
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	6.00	6.00	6.00	0.00	13.00	13.00	13.00	0.00	1.00	1.00	1.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	35	57	6	0	64	71	27	0	4	138	89	0	5	80	25
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	9	14	2	0	16	18	7	0	1	35	22	0	1	20	6
Total Analysis Volume [veh/h]	0	35	57	6	0	64	71	27	0	4	138	89	0	5	80	25
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.26	0.09	0.00	0.01	0.15	0.02
d_M, Delay for Movement [s/veh]	9.01	7.51	0.00	0.00	8.60	7.56	0.00	0.00	15.78	15.80	14.71	11.71	16.49	16.56	13.24	10.03
Movement LOS	A	A	A	A	A	A	A	A	C	C	B	B	C	C	B	B
95th-Percentile Queue Length [veh/ln]	0.07	0.07	0.07	0.07	0.14	0.14	0.14	0.14	1.61	1.61	1.61	1.61	0.69	0.69	0.69	0.69
95th-Percentile Queue Length [m/ln]	0.56	0.56	0.56	0.56	1.04	1.04	1.04	1.04	12.25	12.25	12.25	12.25	5.29	5.29	5.29	5.29
d_A, Approach Delay [s/veh]	2.68				2.99				13.58				12.66			
Approach LOS	A				A				B				B			
d_I, Intersection Delay [s/veh]	8.78															
Intersection LOS	C															

Intersection Level Of Service Report
Intersection 25: 15th Ave & 50th Street

Control Type:	All-way stop	Delay (sec / veh):	8.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.231

Intersection Setup

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	19	6	1	0	1	11	1	0	1	169	37	0	5	93	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	19	6	1	0	1	11	1	0	1	169	37	0	5	93	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	5	2	0	0	0	3	0	0	0	42	9	0	1	23	0
Total Analysis Volume [veh/h]	0	19	6	1	0	1	11	1	0	1	169	37	0	5	93	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	762	784	895	851
Degree of Utilization, x	0.03	0.02	0.23	0.12

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.11	0.05	0.89	0.39
95th-Percentile Queue Length [m]	0.81	0.39	6.81	3.00
Approach Delay [s/veh]	7.90	7.67	8.23	7.79
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.06			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 28: 15th Ave & 70th Street

Control Type:	Two-way stop	Delay (sec / veh):	12.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	88.51				88.51				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	45	107	1	0	8	148	4	0	18	1	79	0	1	1	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	10.00	10.00	10.00	0.00	15.00	15.00	15.00	0.00	16.00	16.00	16.00	0.00	8.00	8.00	8.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	45	107	1	0	8	148	4	0	18	1	79	0	1	1	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	11	27	0	0	2	37	1	0	5	0	20	0	0	0	0
Total Analysis Volume [veh/h]	0	45	107	1	0	8	148	4	0	18	1	79	0	1	1	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free		Free		Stop		Stop	
Flared Lane					No		No	
Storage Area [veh]	0		0		0		0	
Two-Stage Gap Acceptance					No		No	
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.09	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.37	7.69	0.00	0.00	8.66	7.58	0.00	0.00	11.93	12.25	12.59	9.85	12.33	12.52	11.81	8.90
Movement LOS	A	A	A	A	A	A	A	A	B	B	B	A	B	B	B	A
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.10	0.10	0.02	0.02	0.02	0.02	0.43	0.43	0.43	0.43	0.02	0.02	0.02	0.02
95th-Percentile Queue Length [m/ln]	0.77	0.77	0.77	0.77	0.13	0.13	0.13	0.13	3.30	3.30	3.30	3.30	0.12	0.12	0.12	0.12
d_A, Approach Delay [s/veh]	2.26				0.38				10.32				11.08			
Approach LOS	A				A				B				B			
d_I, Intersection Delay [s/veh]	3.51															
Intersection LOS	B															

Vistro File: K:\...\15th Ave Vistro.vistro

Report File: K:\...\Build 2045 PM.pdf

Scenario 4 Forecast PM

7/26/2024

Network Statistics

Number of Intersections	4
- Signalized	*0*
- Roundabout	*0*
- Two-way stop	*2*
- Two-way yield	*0*
- All-way stop	*2*
- Uncontrolled	*0*
- Unknown	*0*
Number of Links	26
Number of Zones	0
Number of Gates	0
Number of Paths	0
Number of Routes	0
Total Link Length [km]	32.0
Network Width [km]	6.3
Network Height [km]	2.8
Total Fuel Consumption [L/h]	0.0
Total Emitted CO [g/h]	0.0
Total Emitted NOx [g/h]	0.0
Total Emitted VOC [g/h]	0.0

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	15th Ave & 60th Street	All-way stop	HCM 2010	EB Thru	0.283	8.3	A
22	15th Ave & 40th Street	Two-way stop	HCM 2010	WB Left	0.018	19.3	C
25	15th Ave & 50th Street	All-way stop	HCM 2010	EB Thru	0.329	8.7	A
28	15th Ave & 70th Street	Two-way stop	HCM 2010	WB Left	0.002	14.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: 15th Ave & 60th Street

Control Type:	All-way stop	Delay (sec / veh):	8.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.283

Intersection Setup

Name	60th Street North								15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	✚				✚				✚				✚			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	60th Street North								15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	45	1	5	0	1	1	2	0	2	177	79	0	6	46	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	45	1	5	0	1	1	2	0	2	177	79	0	6	46	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	11	0	1	0	0	0	1	0	1	44	20	0	2	12	0
Total Analysis Volume [veh/h]	0	45	1	5	0	1	1	2	0	2	177	79	0	6	46	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	763	816	913	832
Degree of Utilization, x	0.07	0.00	0.28	0.06

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.21	0.01	1.17	0.20
95th-Percentile Queue Length [m]	1.63	0.11	8.88	1.55
Approach Delay [s/veh]	8.05	7.43	8.49	7.62
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.29			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 22: 15th Ave & 40th Street

Control Type:	Two-way stop	Delay (sec / veh):	19.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

Intersection Setup

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	100.00				100.00				100.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	35	57	6	0	64	71	27	0	4	223	89	0	5	80	25
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	6.00	6.00	6.00	0.00	13.00	13.00	13.00	0.00	1.00	1.00	1.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	35	57	6	0	64	71	27	0	4	223	89	0	5	80	25
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	9	14	2	0	16	18	7	0	1	56	22	0	1	20	6
Total Analysis Volume [veh/h]	0	35	57	6	0	64	71	27	0	4	223	89	0	5	80	25
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free		Free		Stop		Stop	
Flared Lane					No		No	
Storage Area [veh]	0		0		0		0	
Two-Stage Gap Acceptance					No		No	
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.41	0.09	0.00	0.02	0.15	0.02
d_M, Delay for Movement [s/veh]	9.01	7.51	0.00	0.00	8.60	7.56	0.00	0.00	18.76	18.79	17.69	14.70	19.18	19.27	13.30	10.09
Movement LOS	A	A	A	A	A	A	A	A	C	C	C	B	C	C	B	B
95th-Percentile Queue Length [veh/ln]	0.07	0.07	0.07	0.07	0.14	0.14	0.14	0.14	2.94	2.94	2.94	2.94	0.71	0.71	0.71	0.71
95th-Percentile Queue Length [m/ln]	0.56	0.56	0.56	0.56	1.04	1.04	1.04	1.04	22.38	22.38	22.38	22.38	5.42	5.42	5.42	5.42
d_A, Approach Delay [s/veh]	2.68				2.99				16.86				12.85			
Approach LOS	A				A				C				B			
d_I, Intersection Delay [s/veh]	10.92															
Intersection LOS	C															

Intersection Level Of Service Report
Intersection 25: 15th Ave & 50th Street

Control Type:	All-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.329

Intersection Setup

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	19	6	1	0	1	11	1	0	1	254	37	0	5	93	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	19	6	1	0	1	11	1	0	1	254	37	0	5	93	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	5	2	0	0	0	3	0	0	0	64	9	0	1	23	0
Total Analysis Volume [veh/h]	0	19	6	1	0	1	11	1	0	1	254	37	0	5	93	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	733	753	887	834
Degree of Utilization, x	0.04	0.02	0.33	0.12

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.11	0.05	1.45	0.40
95th-Percentile Queue Length [m]	0.84	0.40	11.01	3.07
Approach Delay [s/veh]	8.10	7.87	9.04	7.90
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.69			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 28: 15th Ave & 70th Street

Control Type:	Two-way stop	Delay (sec / veh):	14.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	88.51				88.51				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	45	107	1	0	8	148	4	0	18	1	164	0	1	1	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	10.00	10.00	10.00	0.00	15.00	15.00	15.00	0.00	16.00	16.00	16.00	0.00	8.00	8.00	8.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	45	107	1	0	8	148	4	0	18	1	164	0	1	1	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	11	27	0	0	2	37	1	0	5	0	41	0	0	0	0
Total Analysis Volume [veh/h]	0	45	107	1	0	8	148	4	0	18	1	164	0	1	1	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.19	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.89	7.69	0.00	0.00	8.66	7.58	0.00	0.00	12.54	12.86	13.20	10.47	13.77	14.01	11.82	8.91
Movement LOS	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	A
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.10	0.10	0.02	0.02	0.02	0.02	0.86	0.86	0.86	0.86	0.02	0.02	0.02	0.02
95th-Percentile Queue Length [m/ln]	0.77	0.77	0.77	0.77	0.13	0.13	0.13	0.13	6.58	6.58	6.58	6.58	0.13	0.13	0.13	0.13
d_A, Approach Delay [s/veh]	2.26				0.38				10.72				11.58			
Approach LOS	A				A				B				B			
d_I, Intersection Delay [s/veh]	4.82															
Intersection LOS	B															

Vistro File: K:\...\15th Ave Vistro.vistro

Report File: K:\...\2045 Summer Friday Peak.pdf

Scenario 5 Friday Summer Peak

7/26/2024

Network Statistics

Number of Intersections	4
- Signalized	*0*
- Roundabout	*0*
- Two-way stop	*2*
- Two-way yield	*0*
- All-way stop	*2*
- Uncontrolled	*0*
- Unknown	*0*
Number of Links	26
Number of Zones	0
Number of Gates	0
Number of Paths	0
Number of Routes	0
Total Link Length [km]	32.0
Network Width [km]	6.3
Network Height [km]	2.8
Total Fuel Consumption [L/h]	0.0
Total Emitted CO [g/h]	0.0
Total Emitted NOx [g/h]	0.0
Total Emitted VOC [g/h]	0.0

Vistro File: K:\...\15th Ave Vistro.vistro

Report File: K:\...\High Build 2045 AM.pdf

Scenario 6 High Forecast AM Peak

8/6/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	15th Ave & 60th Street	All-way stop	HCM 2010	WB Thru	0.229	8.3	A
22	15th Ave & 40th Street	Two-way stop	HCM 2010	WB Left	0.135	53.8	F
25	15th Ave & 50th Street	All-way stop	HCM 2010	NB Left	0.187	8.2	A
28	15th Ave & 70th Street	Two-way stop	HCM 2010	EB Thru	0.002	13.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: 15th Ave & 60th Street

Control Type:	All-way stop	Delay (sec / veh):	8.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.229

Intersection Setup

Name	60th Street North								15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	✛				✛				✛				✛			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	60th Street North								15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	83	1	10	0	1	1	1	0	1	70	22	0	20	171	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	83	1	10	0	1	1	1	0	1	70	22	0	20	171	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	21	0	3	0	0	0	0	0	0	18	6	0	5	43	0
Total Analysis Volume [veh/h]	0	83	1	10	0	1	1	1	0	1	70	22	0	20	171	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	768	789	850	839
Degree of Utilization, x	0.12	0.00	0.11	0.23

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.42	0.01	0.37	0.88
95th-Percentile Queue Length [m]	3.17	0.09	2.80	6.71
Approach Delay [s/veh]	8.34	7.58	7.76	8.56
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.30			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 22: 15th Ave & 40th Street

Control Type:	Two-way stop		Delay (sec / veh):	53.8
Analysis Method:	HCM 2010		Level Of Service:	F
Analysis Period:	15 minutes		Volume to Capacity (v/c):	0.135

Intersection Setup

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	100.00				100.00				100.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	189	79	5	0	2	38	12	0	11	110	121	0	34	278	29
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	6.00	6.00	6.00	0.00	13.00	13.00	13.00	0.00	1.00	1.00	1.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	189	79	5	0	2	38	12	0	11	110	121	0	34	278	29
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	47	20	1	0	1	10	3	0	3	28	30	0	9	70	7
Total Analysis Volume [veh/h]	0	189	79	5	0	2	38	12	0	11	110	121	0	34	278	29
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.27	0.12	0.00	0.14	0.69	0.03
d_M, Delay for Movement [s/veh]	9.12	7.68	0.00	0.00	8.62	7.49	0.00	0.00	34.95	35.04	19.62	14.27	53.67	53.77	48.38	43.14
Movement LOS	A	A	A	A	A	A	A	A	D	E	C	B	F	F	E	E
95th-Percentile Queue Length [veh/ln]	0.42	0.42	0.42	0.42	0.00	0.00	0.00	0.00	2.41	2.41	2.41	2.41	8.23	8.23	8.23	8.23
95th-Percentile Queue Length [m/ln]	3.21	3.21	3.21	3.21	0.03	0.03	0.03	0.03	18.38	18.38	18.38	18.38	62.68	62.68	62.68	62.68
d_A, Approach Delay [s/veh]	5.32				0.29				17.65				48.47			
Approach LOS	A				A				C				E			
d_I, Intersection Delay [s/veh]	24.52															
Intersection LOS	F															

Intersection Level Of Service Report
Intersection 25: 15th Ave & 50th Street

Control Type:	All-way stop	Delay (sec / veh):	8.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.187

Intersection Setup

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	97	8	10	0	1	4	1	0	1	62	32	0	20	135	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	97	8	10	0	1	4	1	0	1	62	32	0	20	135	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	24	2	3	0	0	1	0	0	0	16	8	0	5	34	0
Total Analysis Volume [veh/h]	0	97	8	10	0	1	4	1	0	1	62	32	0	20	135	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	785	794	865	834
Degree of Utilization, x	0.15	0.01	0.11	0.19

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.51	0.02	0.37	0.68
95th-Percentile Queue Length [m]	3.90	0.17	2.81	5.22
Approach Delay [s/veh]	8.37	7.57	7.68	8.31
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.15			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 28: 15th Ave & 70th Street

Control Type:	Two-way stop	Delay (sec / veh):	13.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	88.51				88.51				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	79	81	1	0	1	167	51	0	32	1	46	0	1	1	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	79	81	1	0	1	167	51	0	32	1	46	0	1	1	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	20	20	0	0	0	42	13	0	8	0	12	0	0	0	0
Total Analysis Volume [veh/h]	0	79	81	1	0	1	167	51	0	32	1	46	0	1	1	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.05	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.70	7.80	0.00	0.00	8.51	7.36	0.00	0.00	12.81	12.81	13.14	9.94	12.77	12.77	12.69	8.69
Movement LOS	A	A	A	A	A	A	A	A	B	B	B	A	B	B	B	A
95th-Percentile Queue Length [veh/ln]	0.18	0.18	0.18	0.18	0.00	0.00	0.00	0.00	0.40	0.40	0.40	0.40	0.02	0.02	0.02	0.02
95th-Percentile Queue Length [m/ln]	1.40	1.40	1.40	1.40	0.01	0.01	0.01	0.01	3.07	3.07	3.07	3.07	0.12	0.12	0.12	0.12
d_A, Approach Delay [s/veh]	3.83				0.03				11.14				11.38			
Approach LOS	A				A				B				B			
d_I, Intersection Delay [s/veh]	3.33															
Intersection LOS	B															

Network Statistics

Number of Intersections	4
- Signalized	*0*
- Roundabout	*0*
- Two-way stop	*2*
- Two-way yield	*0*
- All-way stop	*2*
- Uncontrolled	*0*
- Unknown	*0*
Number of Links	26
Number of Zones	0
Number of Gates	0
Number of Paths	0
Number of Routes	0
Total Link Length [km]	32.0
Network Width [km]	6.3
Network Height [km]	2.8
Total Fuel Consumption [L/h]	0.0
Total Emitted CO [g/h]	0.0
Total Emitted NOx [g/h]	0.0
Total Emitted VOC [g/h]	0.0

Vistro File: K:\...\15th Ave Vistro.vistro

Report File: K:\...\High Build 2045 PM.pdf

Scenario 7 High Forecast PM Peak

8/6/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	15th Ave & 60th Street	All-way stop	HCM 2010	EB Thru	0.287	8.4	A
22	15th Ave & 40th Street	Two-way stop	HCM 2010	WB Thru	0.804	10,000.0	F
25	15th Ave & 50th Street	All-way stop	HCM 2010	EB Thru	0.502	10.6	B
28	15th Ave & 70th Street	Two-way stop	HCM 2010	EB Thru	0.002	15.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: 15th Ave & 60th Street

Control Type:	All-way stop	Delay (sec / veh):	8.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.287

Intersection Setup

Name	60th Street North								15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	60th Street North								15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	45	1	5	0	1	1	3	0	3	175	79	0	6	108	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	45	1	5	0	1	1	3	0	3	175	79	0	6	108	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	11	0	1	0	0	0	1	0	1	44	20	0	2	27	0
Total Analysis Volume [veh/h]	0	45	1	5	0	1	1	3	0	3	175	79	0	6	108	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	742	804	897	832
Degree of Utilization, x	0.07	0.01	0.29	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.22	0.02	1.19	0.48
95th-Percentile Queue Length [m]	1.68	0.14	9.05	3.65
Approach Delay [s/veh]	8.21	7.51	8.62	8.02
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.40			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 22: 15th Ave & 40th Street

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.804

Intersection Setup

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	100.00				100.00				100.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	153	103	38	0	26	101	48	0	17	400	193	0	19	277	13
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	6.00	6.00	6.00	0.00	13.00	13.00	13.00	0.00	1.00	1.00	1.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	153	103	38	0	26	101	48	0	17	400	193	0	19	277	13
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	38	26	10	0	7	25	12	0	4	100	48	0	5	69	3
Total Analysis Volume [veh/h]	0	153	103	38	0	26	101	48	0	17	400	193	0	19	277	13
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.11	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.17	1.15	0.21	0.00	0.00	0.80	0.01
d_M, Delay for Movement [s/veh]	10.20	7.87	0.00	0.00	8.93	7.66	0.00	0.00	303.7	303.8	277.6	271.1	1000	1000	1000	1000
Movement LOS	B	A	A	A	A	A	A	A	F	F	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	0.36	0.36	0.36	0.36	0.06	0.06	0.06	0.06	33.29	33.29	33.29	33.29	41.42	41.42	41.42	41.42
95th-Percentile Queue Length [m/ln]	2.78	2.78	2.78	2.78	0.44	0.44	0.44	0.44	253.6	253.6	253.6	253.6	315.6	315.6	315.6	315.6
d_A, Approach Delay [s/veh]	4.09				1.14				276.29				10000.00			
Approach LOS	A				A				F				F			
d_I, Intersection Delay [s/veh]	2348.66															
Intersection LOS	F															

Intersection Level Of Service Report
Intersection 25: 15th Ave & 50th Street

Control Type:	All-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.502

Intersection Setup

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	⊼				⊼				⊼				⊼			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	58	7	1	0	1	12	1	0	1	313	111	0	5	211	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	58	7	1	0	1	12	1	0	1	313	111	0	5	211	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	15	2	0	0	0	3	0	0	0	78	28	0	1	53	0
Total Analysis Volume [veh/h]	0	58	7	1	0	1	12	1	0	1	313	111	0	5	211	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	649	660	846	781
Degree of Utilization, x	0.10	0.02	0.50	0.28

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.34	0.06	2.87	1.14
95th-Percentile Queue Length [m]	2.57	0.49	21.88	8.66
Approach Delay [s/veh]	9.17	8.57	11.47	9.38
Approach LOS	A	A	B	A
Intersection Delay [s/veh]	10.57			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 28: 15th Ave & 70th Street

Control Type:	Two-way stop	Delay (sec / veh):	15.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	88.51				88.51				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	72	119	1	0	8	164	41	0	48	1	127	0	1	1	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	10.00	10.00	10.00	0.00	15.00	15.00	15.00	0.00	16.00	16.00	16.00	0.00	8.00	8.00	8.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	72	119	1	0	8	164	41	0	48	1	127	0	1	1	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	18	30	0	0	2	41	10	0	12	0	32	0	0	0	0
Total Analysis Volume [veh/h]	0	72	119	1	0	8	164	41	0	48	1	127	0	1	1	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.10	0.00	0.15	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.13	7.88	0.00	0.00	8.73	7.60	0.00	0.00	14.31	14.71	14.98	11.25	14.71	14.98	13.17	8.97
Movement LOS	B	A	A	A	A	A	A	A	B	B	B	B	B	B	B	A
95th-Percentile Queue Length [veh/ln]	0.17	0.17	0.17	0.17	0.02	0.02	0.02	0.02	1.04	1.04	1.04	1.04	0.02	0.02	0.02	0.02
95th-Percentile Queue Length [m/ln]	1.32	1.32	1.32	1.32	0.13	0.13	0.13	0.13	7.94	7.94	7.94	7.94	0.14	0.14	0.14	0.14
d_A, Approach Delay [s/veh]	2.96				0.29				12.21				12.37			
Approach LOS	A				A				B				B			
d_I, Intersection Delay [s/veh]	4.82															
Intersection LOS	B															

Network Statistics

Number of Intersections	4
- Signalized	*0*
- Roundabout	*0*
- Two-way stop	*2*
- Two-way yield	*0*
- All-way stop	*2*
- Uncontrolled	*0*
- Unknown	*0*
Number of Links	26
Number of Zones	0
Number of Gates	0
Number of Paths	0
Number of Routes	0
Total Link Length [km]	32.0
Network Width [km]	6.3
Network Height [km]	2.8
Total Fuel Consumption [L/h]	0.0
Total Emitted CO [g/h]	0.0
Total Emitted NOx [g/h]	0.0
Total Emitted VOC [g/h]	0.0

Vistro File: K:\...\15th Ave Vistro.vistro

Report File: K:\...\2045 High Summer Friday Peak.pdf

Scenario 8 High Forecast Friday PM Peak

8/6/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	15th Ave & 60th Street	All-way stop	HCM 2010	EB Thru	0.386	9.1	A
22	15th Ave & 40th Street	Two-way stop	HCM 2010	WB Thru	0.804	10,000.0	F
25	15th Ave & 50th Street	All-way stop	HCM 2010	EB Thru	0.608	12.2	B
28	15th Ave & 70th Street	Two-way stop	HCM 2010	WB Left	0.003	17.1	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: 15th Ave & 60th Street

Control Type:	All-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.386

Intersection Setup

Name	60th Street North								15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	✛				✛				✛				✛			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	60th Street North								15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	45	1	5	0	1	1	3	0	3	260	79	0	6	108	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	45	1	5	0	1	1	3	0	3	260	79	0	6	108	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	11	0	1	0	0	0	1	0	1	65	20	0	2	27	0
Total Analysis Volume [veh/h]	0	45	1	5	0	1	1	3	0	3	260	79	0	6	108	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	714	770	885	814
Degree of Utilization, x	0.07	0.01	0.39	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.23	0.02	1.84	0.49
95th-Percentile Queue Length [m]	1.75	0.15	14.02	3.74
Approach Delay [s/veh]	8.43	7.71	9.61	8.15
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	9.14			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 22: 15th Ave & 40th Street

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.804

Intersection Setup

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	⊥				⊥				⊥				⊥			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	100.00				100.00				100.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	153	103	38	0	26	101	48	0	17	485	193	0	19	277	13
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	6.00	6.00	6.00	0.00	13.00	13.00	13.00	0.00	1.00	1.00	1.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	153	103	38	0	26	101	48	0	17	485	193	0	19	277	13
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	38	26	10	0	7	25	12	0	4	121	48	0	5	69	3
Total Analysis Volume [veh/h]	0	153	103	38	0	26	101	48	0	17	485	193	0	19	277	13
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.11	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.17	1.39	0.21	0.00	0.00	0.80	0.01
d_M, Delay for Movement [s/veh]	10.20	7.87	0.00	0.00	8.93	7.66	0.00	0.00	409.8	409.9	383.7	377.2	1000	1000	1000	1000
Movement LOS	B	A	A	A	A	A	A	A	F	F	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	0.36	0.36	0.36	0.36	0.06	0.06	0.06	0.06	43.86	43.86	43.86	43.86	41.42	41.42	41.42	41.42
95th-Percentile Queue Length [m/ln]	2.78	2.78	2.78	2.78	0.44	0.44	0.44	0.44	334.1	334.1	334.1	334.1	315.6	315.6	315.6	315.6
d_A, Approach Delay [s/veh]	4.09				1.14				382.58				10000.00			
Approach LOS	A				A				F				F			
d_I, Intersection Delay [s/veh]	2279.22															
Intersection LOS	F															

Intersection Level Of Service Report
Intersection 25: 15th Ave & 50th Street

Control Type:	All-way stop	Delay (sec / veh):	12.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.608

Intersection Setup

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	✚				✚				✚				✚			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	58	7	1	0	1	12	1	0	1	398	111	0	5	211	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	58	7	1	0	1	12	1	0	1	398	111	0	5	211	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	15	2	0	0	0	3	0	0	0	100	28	0	1	53	0
Total Analysis Volume [veh/h]	0	58	7	1	0	1	12	1	0	1	398	111	0	5	211	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	627	636	838	764
Degree of Utilization, x	0.11	0.02	0.61	0.28

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.35	0.07	4.23	1.17
95th-Percentile Queue Length [m]	2.67	0.51	32.20	8.92
Approach Delay [s/veh]	9.41	8.78	13.73	9.57
Approach LOS	A	A	B	A
Intersection Delay [s/veh]	12.17			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 28: 15th Ave & 70th Street

Control Type:	Two-way stop	Delay (sec / veh):	17.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	88.51				88.51				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	72	119	1	0	8	164	41	0	48	1	212	0	1	1	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	10.00	10.00	10.00	0.00	15.00	15.00	15.00	0.00	16.00	16.00	16.00	0.00	8.00	8.00	8.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	72	119	1	0	8	164	41	0	48	1	212	0	1	1	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	18	30	0	0	2	41	10	0	12	0	53	0	0	0	0
Total Analysis Volume [veh/h]	0	72	119	1	0	8	164	41	0	48	1	212	0	1	1	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.10	0.00	0.26	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.83	7.88	0.00	0.00	8.73	7.60	0.00	0.00	15.28	15.68	15.95	12.22	16.80	17.13	13.18	8.98
Movement LOS	B	A	A	A	A	A	A	A	C	C	C	B	C	C	B	A
95th-Percentile Queue Length [veh/ln]	0.17	0.17	0.17	0.17	0.02	0.02	0.02	0.02	1.67	1.67	1.67	1.67	0.02	0.02	0.02	0.02
95th-Percentile Queue Length [m/ln]	1.32	1.32	1.32	1.32	0.13	0.13	0.13	0.13	12.72	12.72	12.72	12.72	0.15	0.15	0.15	0.15
d_A, Approach Delay [s/veh]	2.96				0.29				12.87				13.10			
Approach LOS	A				A				B				B			
d_I, Intersection Delay [s/veh]	6.02															
Intersection LOS	C															

Vistro File: K:\...\15th Ave Vistro.vistro

Report File: K:\...\2045 High Summer Friday Peak.pdf

Scenario 8 High Forecast Friday PM Peak

8/6/2024

Network Statistics

Number of Intersections	4
- Signalized	*0*
- Roundabout	*0*
- Two-way stop	*2*
- Two-way yield	*0*
- All-way stop	*2*
- Uncontrolled	*0*
- Unknown	*0*
Number of Links	26
Number of Zones	0
Number of Gates	0
Number of Paths	0
Number of Routes	0
Total Link Length [km]	32.0
Network Width [km]	6.3
Network Height [km]	2.8
Total Fuel Consumption [L/h]	0.0
Total Emitted CO [g/h]	0.0
Total Emitted NOx [g/h]	0.0
Total Emitted VOC [g/h]	0.0

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	15th Ave & 60th Street	All-way stop	HCM 2010	WB Thru	0.229	8.3	A
22	15th Ave & 40th Street	Two-way stop	HCM 2010	NB Left	0.510	34.5	D
25	15th Ave & 50th Street	All-way stop	HCM 2010	NB Left	0.187	8.2	A
28	15th Ave & 70th Street	Two-way stop	HCM 2010	EB Thru	0.002	13.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: 15th Ave & 60th Street

Control Type:	All-way stop	Delay (sec / veh):	8.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.229

Intersection Setup

Name	60th Street North								15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	✛				✛				✛				✛			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	60th Street North								15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	83	1	10	0	1	1	1	0	1	70	22	0	20	171	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	83	1	10	0	1	1	1	0	1	70	22	0	20	171	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	21	0	3	0	0	0	0	0	0	18	6	0	5	43	0
Total Analysis Volume [veh/h]	0	83	1	10	0	1	1	1	0	1	70	22	0	20	171	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	768	789	850	839
Degree of Utilization, x	0.12	0.00	0.11	0.23

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.42	0.01	0.37	0.88
95th-Percentile Queue Length [m]	3.17	0.09	2.80	6.71
Approach Delay [s/veh]	8.34	7.58	7.76	8.56
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.30			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 22: 15th Ave & 40th Street

Control Type:	Two-way stop	Delay (sec / veh):	34.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.510

Intersection Setup

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	100.00				100.00				100.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	189	79	5	0	2	38	12	0	11	110	121	0	34	278	29
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	6.00	6.00	6.00	0.00	13.00	13.00	13.00	0.00	1.00	1.00	1.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	189	79	5	0	2	38	12	0	11	110	121	0	34	278	29
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	47	20	1	0	1	10	3	0	3	28	30	0	9	70	7
Total Analysis Volume [veh/h]	0	189	79	5	0	2	38	12	0	11	110	121	0	34	278	29
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.51	0.19	0.01	0.00	0.01	0.10	0.02	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	34.27	34.47	33.54	28.93	16.66	17.15	15.75	11.19	10.01	7.88	0.00	0.00	9.47	7.76	0.00	0.00
Movement LOS	D	D	D	D	C	C	C	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	5.30	5.30	5.30	5.30	0.42	0.42	0.42	0.42	0.03	0.03	0.03	0.03	0.08	0.08	0.08	0.08
95th-Percentile Queue Length [m/ln]	40.37	40.37	40.37	40.37	3.19	3.19	3.19	3.19	0.20	0.20	0.20	0.20	0.60	0.60	0.60	0.60
d_A, Approach Delay [s/veh]	34.10				14.75				0.36				0.77			
Approach LOS	D				B				A				A			
d_I, Intersection Delay [s/veh]	11.48															
Intersection LOS	D															

Intersection Level Of Service Report
Intersection 25: 15th Ave & 50th Street

Control Type:	All-way stop	Delay (sec / veh):	8.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.187

Intersection Setup

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	97	8	10	0	1	4	1	0	1	62	32	0	20	135	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	97	8	10	0	1	4	1	0	1	62	32	0	20	135	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	24	2	3	0	0	1	0	0	0	16	8	0	5	34	0
Total Analysis Volume [veh/h]	0	97	8	10	0	1	4	1	0	1	62	32	0	20	135	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	785	794	865	834
Degree of Utilization, x	0.15	0.01	0.11	0.19

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.51	0.02	0.37	0.68
95th-Percentile Queue Length [m]	3.90	0.17	2.81	5.22
Approach Delay [s/veh]	8.37	7.57	7.68	8.31
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.15			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 28: 15th Ave & 70th Street

Control Type:	Two-way stop	Delay (sec / veh):	13.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	⬍				⬍				⬍				⬍			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	88.51				88.51				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	79	81	1	0	1	167	51	0	32	1	46	0	1	1	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	79	81	1	0	1	167	51	0	32	1	46	0	1	1	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	20	20	0	0	0	42	13	0	8	0	12	0	0	0	0
Total Analysis Volume [veh/h]	0	79	81	1	0	1	167	51	0	32	1	46	0	1	1	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.05	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.70	7.80	0.00	0.00	8.51	7.36	0.00	0.00	12.81	12.81	13.14	9.94	12.77	12.77	12.69	8.69
Movement LOS	A	A	A	A	A	A	A	A	B	B	B	A	B	B	B	A
95th-Percentile Queue Length [veh/ln]	0.18	0.18	0.18	0.18	0.00	0.00	0.00	0.00	0.40	0.40	0.40	0.40	0.02	0.02	0.02	0.02
95th-Percentile Queue Length [m/ln]	1.40	1.40	1.40	1.40	0.01	0.01	0.01	0.01	3.07	3.07	3.07	3.07	0.12	0.12	0.12	0.12
d_A, Approach Delay [s/veh]	3.83				0.03				11.14				11.38			
Approach LOS	A				A				B				B			
d_I, Intersection Delay [s/veh]	3.33															
Intersection LOS	B															

Vistro File: K:\...\15th Ave Vistro.vistro

Report File: K:\...\High Build 2045 AM Mitigation Flip.pdf

Scenario 6 High Forecast AM Peak

8/6/2024

Network Statistics

Number of Intersections	4
- Signalized	*0*
- Roundabout	*0*
- Two-way stop	*2*
- Two-way yield	*0*
- All-way stop	*2*
- Uncontrolled	*0*
- Unknown	*0*
Number of Links	26
Number of Zones	0
Number of Gates	0
Number of Paths	0
Number of Routes	0
Total Link Length [km]	32.0
Network Width [km]	6.3
Network Height [km]	2.8
Total Fuel Consumption [L/h]	0.0
Total Emitted CO [g/h]	0.0
Total Emitted NOx [g/h]	0.0
Total Emitted VOC [g/h]	0.0

Vistro File: K:\...\15th Ave Vistro.vistro

Scenario 7 High Forecast PM Peak

Report File: K:\...\High Build 2045 PM Mitigation Flip.pdf

8/6/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	15th Ave & 60th Street	All-way stop	HCM 2010	EB Thru	0.287	8.4	A
22	15th Ave & 40th Street	Two-way stop	HCM 2010	NB Left	1.030	286.2	F
25	15th Ave & 50th Street	All-way stop	HCM 2010	EB Thru	0.502	10.6	B
28	15th Ave & 70th Street	Two-way stop	HCM 2010	EB Thru	0.002	15.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: 15th Ave & 60th Street

Control Type:	All-way stop	Delay (sec / veh):	8.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.287

Intersection Setup

Name	60th Street North								15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	60th Street North								15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	45	1	5	0	1	1	3	0	3	175	79	0	6	108	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	45	1	5	0	1	1	3	0	3	175	79	0	6	108	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	11	0	1	0	0	0	1	0	1	44	20	0	2	27	0
Total Analysis Volume [veh/h]	0	45	1	5	0	1	1	3	0	3	175	79	0	6	108	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	742	804	897	832
Degree of Utilization, x	0.07	0.01	0.29	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.22	0.02	1.19	0.48
95th-Percentile Queue Length [m]	1.68	0.14	9.05	3.65
Approach Delay [s/veh]	8.21	7.51	8.62	8.02
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.40			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 22: 15th Ave & 40th Street

Control Type:	Two-way stop	Delay (sec / veh):	286.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.030

Intersection Setup

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	100.00				100.00				100.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	153	103	38	0	26	101	48	0	17	400	193	0	19	277	13
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	6.00	6.00	6.00	0.00	13.00	13.00	13.00	0.00	1.00	1.00	1.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	153	103	38	0	26	101	48	0	17	400	193	0	19	277	13
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	38	26	10	0	7	25	12	0	4	100	48	0	5	69	3
Total Analysis Volume [veh/h]	0	153	103	38	0	26	101	48	0	17	400	193	0	19	277	13
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	1.03	0.37	0.07	0.00	0.17	0.42	0.07	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	285.5	286.1	274.9	268.3	49.78	50.99	42.67	32.54	10.16	7.86	0.00	0.00	13.18	8.73	0.00	0.00
Movement LOS	F	F	F	F	E	F	E	D	B	A	A	A	B	A	A	A
95th-Percentile Queue Length [veh/ln]	17.88	17.88	17.88	17.88	4.20	4.20	4.20	4.20	0.04	0.04	0.04	0.04	0.06	0.06	0.06	0.06
95th-Percentile Queue Length [m/ln]	136.2	136.2	136.2	136.2	32.03	32.03	32.03	32.03	0.31	0.31	0.31	0.31	0.45	0.45	0.45	0.45
d_A, Approach Delay [s/veh]	279.92				41.13				0.22				0.54			
Approach LOS	F				E				A				A			
d_I, Intersection Delay [s/veh]	64.69															
Intersection LOS	F															

Intersection Level Of Service Report
Intersection 25: 15th Ave & 50th Street

Control Type:	All-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.502

Intersection Setup

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration		✚				✚				✚				✚		
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	58	7	1	0	1	12	1	0	1	313	111	0	5	211	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	58	7	1	0	1	12	1	0	1	313	111	0	5	211	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	15	2	0	0	0	3	0	0	0	78	28	0	1	53	0
Total Analysis Volume [veh/h]	0	58	7	1	0	1	12	1	0	1	313	111	0	5	211	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	649	660	846	781
Degree of Utilization, x	0.10	0.02	0.50	0.28

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.34	0.06	2.87	1.14
95th-Percentile Queue Length [m]	2.57	0.49	21.88	8.66
Approach Delay [s/veh]	9.17	8.57	11.47	9.38
Approach LOS	A	A	B	A
Intersection Delay [s/veh]	10.57			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 28: 15th Ave & 70th Street

Control Type:	Two-way stop	Delay (sec / veh):	15.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	88.51				88.51				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	72	119	1	0	8	164	41	0	48	1	127	0	1	1	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	10.00	10.00	10.00	0.00	15.00	15.00	15.00	0.00	16.00	16.00	16.00	0.00	8.00	8.00	8.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	72	119	1	0	8	164	41	0	48	1	127	0	1	1	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	18	30	0	0	2	41	10	0	12	0	32	0	0	0	0
Total Analysis Volume [veh/h]	0	72	119	1	0	8	164	41	0	48	1	127	0	1	1	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.10	0.00	0.15	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.13	7.88	0.00	0.00	8.73	7.60	0.00	0.00	14.31	14.71	14.98	11.25	14.71	14.98	13.17	8.97
Movement LOS	B	A	A	A	A	A	A	A	B	B	B	B	B	B	B	A
95th-Percentile Queue Length [veh/ln]	0.17	0.17	0.17	0.17	0.02	0.02	0.02	0.02	1.04	1.04	1.04	1.04	0.02	0.02	0.02	0.02
95th-Percentile Queue Length [m/ln]	1.32	1.32	1.32	1.32	0.13	0.13	0.13	0.13	7.94	7.94	7.94	7.94	0.14	0.14	0.14	0.14
d_A, Approach Delay [s/veh]	2.96				0.29				12.21				12.37			
Approach LOS	A				A				B				B			
d_I, Intersection Delay [s/veh]	4.82															
Intersection LOS	B															

Vistro File: K:\...\15th Ave Vistro.vistro

Report File: K:\...\High Build 2045 PM Mitigation Flip.pdf

Scenario 7 High Forecast PM Peak

8/6/2024

Network Statistics

Number of Intersections	4
- Signalized	*0*
- Roundabout	*0*
- Two-way stop	*2*
- Two-way yield	*0*
- All-way stop	*2*
- Uncontrolled	*0*
- Unknown	*0*
Number of Links	26
Number of Zones	0
Number of Gates	0
Number of Paths	0
Number of Routes	0
Total Link Length [km]	32.0
Network Width [km]	6.3
Network Height [km]	2.8
Total Fuel Consumption [L/h]	0.0
Total Emitted CO [g/h]	0.0
Total Emitted NOx [g/h]	0.0
Total Emitted VOC [g/h]	0.0

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	15th Ave & 60th Street	All-way stop	HCM 2010	EB Thru	0.386	9.1	A
22	15th Ave & 40th Street	Roundabout	HCM 2010	EB Thru		13.6	B
25	15th Ave & 50th Street	All-way stop	HCM 2010	EB Thru	0.608	12.2	B
28	15th Ave & 70th Street	Two-way stop	HCM 2010	WB Left	0.003	17.1	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: 15th Ave & 60th Street

Control Type:	All-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.386

Intersection Setup

Name	60th Street North								15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	⊣				⊣				⊣				⊣			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	60th Street North								15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	45	1	5	0	1	1	3	0	3	260	79	0	6	108	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	45	1	5	0	1	1	3	0	3	260	79	0	6	108	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	11	0	1	0	0	0	1	0	1	65	20	0	2	27	0
Total Analysis Volume [veh/h]	0	45	1	5	0	1	1	3	0	3	260	79	0	6	108	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	714	770	885	814
Degree of Utilization, x	0.07	0.01	0.39	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.23	0.02	1.84	0.49
95th-Percentile Queue Length [m]	1.75	0.15	14.02	3.74
Approach Delay [s/veh]	8.43	7.71	9.61	8.15
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	9.14			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 22: 15th Ave & 40th Street

Control Type:	Roundabout	Delay (sec / veh):	13.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	⯑				⯑				⯑				⯑			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	100.00				100.00				100.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	40th Street North				40th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	153	103	38	0	26	101	48	0	17	485	193	0	19	277	13
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	6.00	6.00	6.00	0.00	13.00	13.00	13.00	0.00	1.00	1.00	1.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	153	103	38	0	26	101	48	0	17	485	193	0	19	277	13
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	38	26	10	0	7	25	12	0	4	121	48	0	5	69	3
Total Analysis Volume [veh/h]	0	153	103	38	0	26	101	48	0	17	485	193	0	19	277	13
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Number of Conflicting Circulating Lanes	1				1				1				1			
Circulating Flow Rate [veh/h]	536				464				163				289			
Exiting Flow Rate [veh/h]	328				140				499				560			
Demand Flow Rate [veh/h]	0	153	103	38	0	26	101	48	0	17	485	193	0	19	277	13
Adjusted Demand Flow Rate [veh/h]	0	153	103	38	0	26	101	48	0	17	485	193	0	19	277	13

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1130.00	1130.00	1130.00	1130.00
B (coefficient)	0.00100	0.00100	0.00100	0.00100
HV Adjustment Factor	0.94	0.88	0.99	0.98
Entry Flow Rate [veh/h]	312	198	702	316
Capacity of Entry and Bypass Lanes [veh/h]	661	711	961	847
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	624	629	951	831
X, volume / capacity	0.47	0.28	0.73	0.37

Movement, Approach, & Intersection Results

Lane LOS	B	A	C	A
95th-Percentile Queue Length [veh]	2.52	1.13	6.74	1.73
95th-Percentile Queue Length [m]	19.22	8.64	51.33	13.20
Approach Delay [s/veh]	13.18	9.31	16.99	8.75
Approach LOS	B	A	C	A
Intersection Delay [s/veh]	13.59			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 25: 15th Ave & 50th Street

Control Type:	All-way stop	Delay (sec / veh):	12.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.608

Intersection Setup

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	50.00				50.00				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	50th Street North				50th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	58	7	1	0	1	12	1	0	1	398	111	0	5	211	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	58	7	1	0	1	12	1	0	1	398	111	0	5	211	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	15	2	0	0	0	3	0	0	0	100	28	0	1	53	0
Total Analysis Volume [veh/h]	0	58	7	1	0	1	12	1	0	1	398	111	0	5	211	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	627	636	838	764
Degree of Utilization, x	0.11	0.02	0.61	0.28

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.35	0.07	4.23	1.17
95th-Percentile Queue Length [m]	2.67	0.51	32.20	8.92
Approach Delay [s/veh]	9.41	8.78	13.73	9.57
Approach LOS	A	A	B	A
Intersection Delay [s/veh]	12.17			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 28: 15th Ave & 70th Street

Control Type:	Two-way stop	Delay (sec / veh):	17.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	⊥				⊥				⊥				⊥			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [m]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [m]	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48	30.48
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [m]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [km/h]	88.51				88.51				50.00				50.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	70th Street North				70th Street North				15th Avenue North				15th Avenue North			
Base Volume Input [veh/h]	0	72	119	1	0	8	164	41	0	48	1	212	0	1	1	1
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	10.00	10.00	10.00	0.00	15.00	15.00	15.00	0.00	16.00	16.00	16.00	0.00	8.00	8.00	8.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	72	119	1	0	8	164	41	0	48	1	212	0	1	1	1
Peak Hour Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	18	30	0	0	2	41	10	0	12	0	53	0	0	0	0
Total Analysis Volume [veh/h]	0	72	119	1	0	8	164	41	0	48	1	212	0	1	1	1
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.10	0.00	0.26	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.83	7.88	0.00	0.00	8.73	7.60	0.00	0.00	15.28	15.68	15.95	12.22	16.80	17.13	13.18	8.98
Movement LOS	B	A	A	A	A	A	A	A	C	C	C	B	C	C	B	A
95th-Percentile Queue Length [veh/ln]	0.17	0.17	0.17	0.17	0.02	0.02	0.02	0.02	1.67	1.67	1.67	1.67	0.02	0.02	0.02	0.02
95th-Percentile Queue Length [m/ln]	1.32	1.32	1.32	1.32	0.13	0.13	0.13	0.13	12.72	12.72	12.72	12.72	0.15	0.15	0.15	0.15
d_A, Approach Delay [s/veh]	2.96				0.29				12.87				13.10			
Approach LOS	A				A				B				B			
d_I, Intersection Delay [s/veh]	6.02															
Intersection LOS	C															

Vistro File: K:\...\15th Ave Vistro.vistro

Report File: K:\...\High Build 2045 PM Mitigation RAB.pdf

Scenario 8 High Forecast Friday PM Peak

8/6/2024

Network Statistics

Number of Intersections	4
- Signalized	*0*
- Roundabout	*1*
- Two-way stop	*1*
- Two-way yield	*0*
- All-way stop	*2*
- Uncontrolled	*0*
- Unknown	*0*
Number of Links	26
Number of Zones	0
Number of Gates	0
Number of Paths	0
Number of Routes	0
Total Link Length [km]	32.0
Network Width [km]	6.3
Network Height [km]	2.8
Total Fuel Consumption [L/h]	0.0
Total Emitted CO [g/h]	0.0
Total Emitted NOx [g/h]	0.0
Total Emitted VOC [g/h]	0.0

Appendix C
FEMA Floodplain Maps

NOTES TO USERS

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To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

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Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

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NGS Information Services
NOAA, NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A — No Base Flood Elevations determined.

ZONE AE — Base Flood Elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR — Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

——— 1% annual chance floodplain boundary

——— 0.2% annual chance floodplain boundary

——— Floodway boundary

——— Zone D boundary

••••••••• CBRS and OPA boundary

▨▨▨ Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

∼∼∼513∼∼∼ Base Flood Elevation line and value; elevation in feet*

(EL 987) Base Flood Elevation value where elevation within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A———A Cross section line

23 - - - - 23 Transect line

45° 02' 08", 93° 02' 12" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere

4999000m 1000-meter Universal Transverse Mercator grid values, zone 14

DX5510 × Bench mark (see explanation in Notes to Users section of this FIRM panel)

*M1.5 River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
APRIL 17, 2012

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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To determine if flood insurance is available in this community contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250   0   500   1000 FEET

150   0   150   300 METERS

NATIONAL FLOOD INSURANCE PROGRAM

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ADMINISTRATIVE FLOODWAY

LEGEND

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OTHER FLOOD AREAS

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- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
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- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

~513~ Base Flood Elevation line and value; elevation in feet*

(EL 987) Base Flood Elevation value where within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

(A)——(A) Cross section line

(23)–––(23) Transect line

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DX5510 × Bench mark (see explanation in Notes to Users section of this FIRM panel)

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MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

Map labels

JOINS PANEL 0341
JOINS PANEL 0339
JOINS PANEL 0344
JOINS PANEL 0481

96° 41' 15"
46° 54' 22.5"
96° 39' 22.5"
46° 54' 22.5"
96° 41' 15"
46° 52' 30"
96° 39' 22.5"
46° 52' 30"

Clay County
Unincorporated Areas
275235

City of Dilworth
270080

ZONE AE
County Ditch No. 41 Lateral No. 1
ADMINISTRATIVE FLOODWAY* (SUBJECT TO LOCAL REGULATIONS)
PROFILE BASELINE
0.2% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CULVERT
BURLINGTON NORTHERN SANTA FE RAILROAD

SIXTH AVE NE
FIFTH AVE NE
FOURTH AVE NE
SOUTHWOOD DR
THIRD AVE NE
15TH AVE N

T. 140 N.
T. 139 N.
R. 48 W.
R. 47 W.

Appendix D
SRC Meeting Minutes

15th Ave N Corridor Study – SRC Meeting #1
Meeting Minutes

Date: 7/22/2024　　　　　　　　　**Time:** 11:00 AM
　　　　　　　　　　　　　　　　　Facilitator: Scott Middaugh

Attendees: Jeff Winter – Moland Township; Peyton Mastera – City of Dilworth; Michael Maddox – Metro COG; Justin Sorum – Clay County; Scott Middaugh, Veronica Richfield, Todd Hummel – KLJ

Introductions

1. Introductions for the group were made. Representatives from Moorhead and Oakport Townships were not present.
2. Carol Kurtyka (Moorhead Township) was out of town this week so was not able to attend.
3. Tim Brendemuhl (Oakport Township) was invited to the meeting but did not respond. Scott M will follow up with him later to ensure he is the correct person to contact for future SRC Meetings.

Study Overview

1. Scott M gave an overview of the study.
   a. 3 miles of 15th Ave N between CSAH 9 and CSAH 11
   b. 15th Ave N was identified in the TH 10 corridor study as an east/west reliever route for the metro area.
   c. Study aims to look at future improvements to the roadway along with future ownership and maintenance of the roadway.
   d. Study will be completed by December 2024.
2. SRC members will help guide the study and review materials before going to the public.
   a. SRC comprised of Metro COG, Clay County, City of Dilworth, Townships of Molin, Moorhead, and Oakport, and MnDOT District 4.

Existing Conditions

1. 15th Ave N is currently a gravel township roadway.
2. Oakport, Moorhead, and Moland townships share jurisdiction of the roadway.
3. All townships contract with Clay County for blading and snow removal.
   a. Townships are responsible for graveling operations.
   b. Peyton M stated that Dilworth has a financial agreement with Oakport and Moorhead Townships to pay for 50% of maintenance operations.
   c. Jeff W stated that the roadway is graveled about every three years.
4. Peyton M stated that the NE ¼ of 1-139-48 has been annexed by the City of Dilworth.
5. Veronica R discussed the existing traffic conditions throughout the corridor.
   a. Traffic counts were collected using tubes and cameras
      i. East of 50th St less than 100 vehicles per day
      ii. Between CSAH 9 and 50th St there are about 300 vehicles per day
      iii. Primary movements are eastbound to southbound and northbound to westbound at the 50th St intersection
      iv. Traffic data shows that drivers are using 15th Ave N to cross the Red River but not as a thru route.

b. Only 4 crashes were reported in recent crash data, all at the intersection of CSAH 9 and 15th Ave N.
      i. No fatalities or serious injuries
      ii. The only crash trend is winter weather related
      iii. Not a critical crash rate location
   c. There are no indications of speeding through the corridor.
6. There are existing utilities through the corridor:
   a. City of Dilworth has a sanitary forcemain on the north side of the roadway from 34th St to 14th St NE.
   b. There is a natural gas transmission line that crosses 15th Ave N approximately 1,200' east of CSAH 9.
   c. There are overhead powerlines on the south side of Drain 41 with crossings throughout the corridor.
   d. Based on KLJ's site visit and previous plans there are telecommunication lines on the north side of the corridor.
   e. Jeff W stated that 702 Communications has a proposal to bury fiver along CSAH 11, but is not installed yet.

Future Conditions
1. Because of the low existing traffic volumes, KLJ is going to complete an origin-destination study to determine how many trips are generated from the north end of the metro area to TH 336/TH 10 and TH 336/I-94.
   a. This will take into account future land use and growth rates
   b. Future traffic volumes will be established based on this methodology.
2. Veronica R asked the group if there are any future improvements/developments in the next 10-15 years.
   a. Michael M stated that MnDOT is currently conducting a study on I-94 to determine if a third lane in each direction should be added
   b. TH 10 from 14th St (in Moorhead) through Dilworth will be reconstructed in the future.
   c. Peyton M stated that Dilworth has purchased land in the NE ¼ of 2-139-48 and plans to construct a community park
      i. Dilworth plans to extend 14th St NE to 15th Ave N in the future
      ii. Metro COG is conducting a study to extend 8th Ave through Dilworth.
      iii. Peyton M stated that it is anticipated that the N ½ of 2-139-48 and E ½ of the NW ¼ of 1-139-48 will be the future growth areas for Dilworth.
   d. Peyton M stated that the city gets inquiries about the development for light industrial along the 34th St corridor.
      i. Michael M stated that KLJ should reach out to Joe with the Greater FM EDC to see if they have any insights into development in the area.

Known Issues
1. Scott M asked the group if there were any known issues throughout the corridor.
   a. Jeff W stated that trees in the NW corners of CSAH 9/15th Ave N, 50th St/15th Ave N, and NW corner of CSAH 11/15th Ave N can cause some sight distance issues.
   b. Justin S stated that Clay County gets complaints about dust in the area and conditions of 15th Ave N between CSAH 9 and 50th St.
      i. More blading is required in this section of the roadway.

ii. Justin S stated that he feels the roadway would get used more if it was improved.

iii. Traffic counts tripled on 15th Ave N between 34th St and CSAH 9 after it was paved.

iv. Peyton M. stated complaints regarding the amount of dust were received over the course of force main and other improvements over the past few years.

c. Jeff W stated that there is an underground aquifer that runs along CSAH 11 from south to North from Wolverton to Sabin. He stated that the Buffalo Red River Watershed District will know more about that.

d. Jeff W stated that traveling along 15th Ave N approaching CSAH 11 it is unclear that the eastern leg is a residential driveway.

Public Involvement

1. Scott M outlined the short-term public engagement strategy:

   a. Public Awareness:

      i. KLJ has a website set up with an interactive map to leave comments along with a survey for people to take.

      ii. KLJ will have a booth at Loco Daze to introduce the public to the study and determine what the existing issues are on the corridor.

         1. Payton M stated that another good opportunity to get in front of the public could be Night to Unite on August 6. Michael M will consider attending to hand out postcards and increase survey participation.

      iii. KLJ is planning for a pop-up event at a DGF football game in September.

   b. Stakeholder Coordination:

      i. KLJ is setting up meetings with various stakeholders such as:

         1. Dilworth Police
         2. Dilworth Fire
         3. Dilworth Maintenance
         4. Moorhead Engineering
         5. Buffalo Red River Watershed District
         6. Clay County Planning
         7. DGF School District Transportation

   c. Landowner Engagement

      i. KLJ has developed postcards to be mailed out to residents within 1,000 feet of the corridor to get their feedback.

         1. The postcards will have a QR code and website to direct landowners to the project website.
         2. KLJ contact information will be included if they would like to discuss the study.

Next Steps

1. KLJ will prepare the existing conditions/future conditions report and submit it to the SRC for review.

2. Scott M will send out an invite for SRC Meeting #2 on August 26

Study Review Committee #1

July 22, 2024

Agenda

- Introductions
- Study Overview
- Existing/Future Conditions
- Known Issues
- Public Involvement
- Going Forward

Study Overview
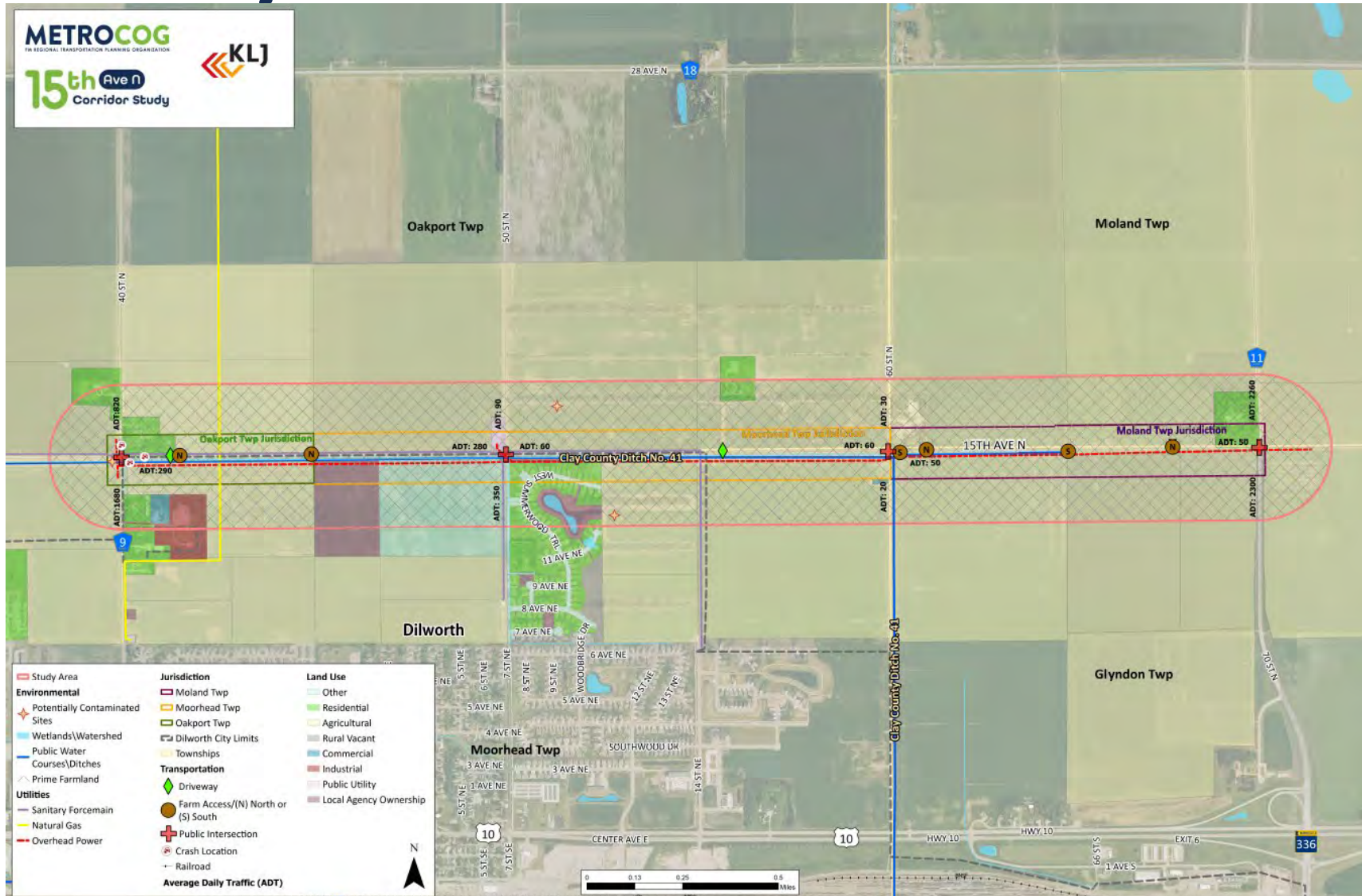
Existing Conditions
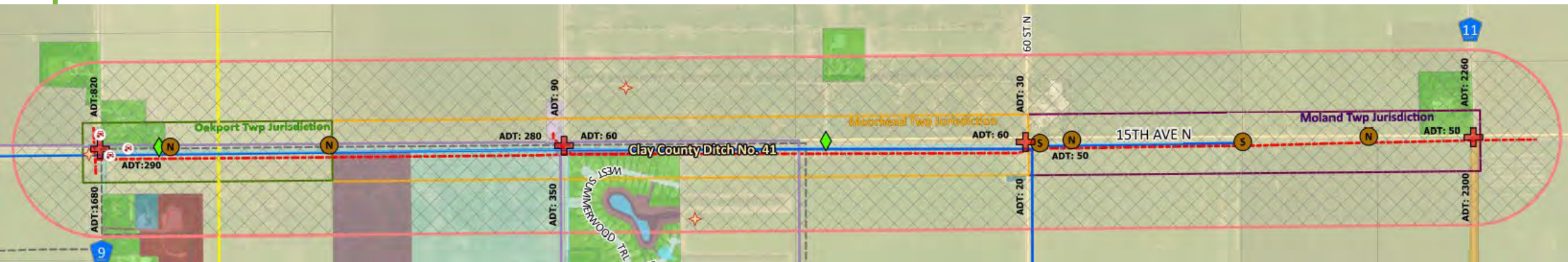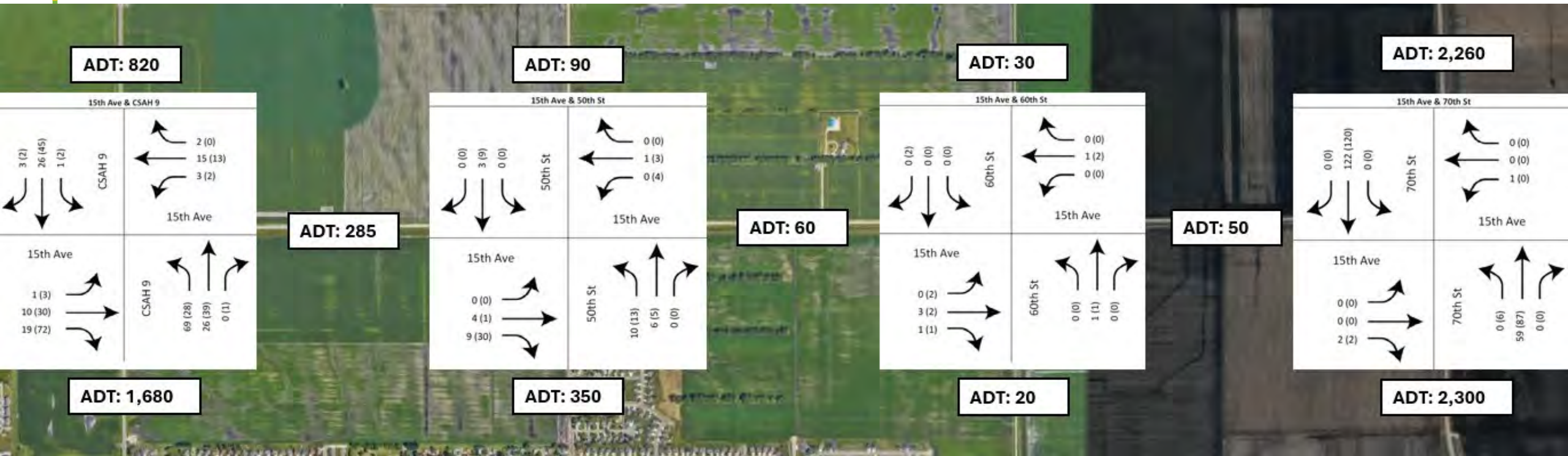
Traffic Volumes

Volumes listed as AM Peak (PM Peak)

AM Peak is 7-8 AM

PM Peak is 4:30-5:30 PM

Future Conditions Methodology

Three types of volumes being added to the corridor:

- Background growth rate

- Land use change

- Traffic diversion from I-94, US 10 & 28th Avenue
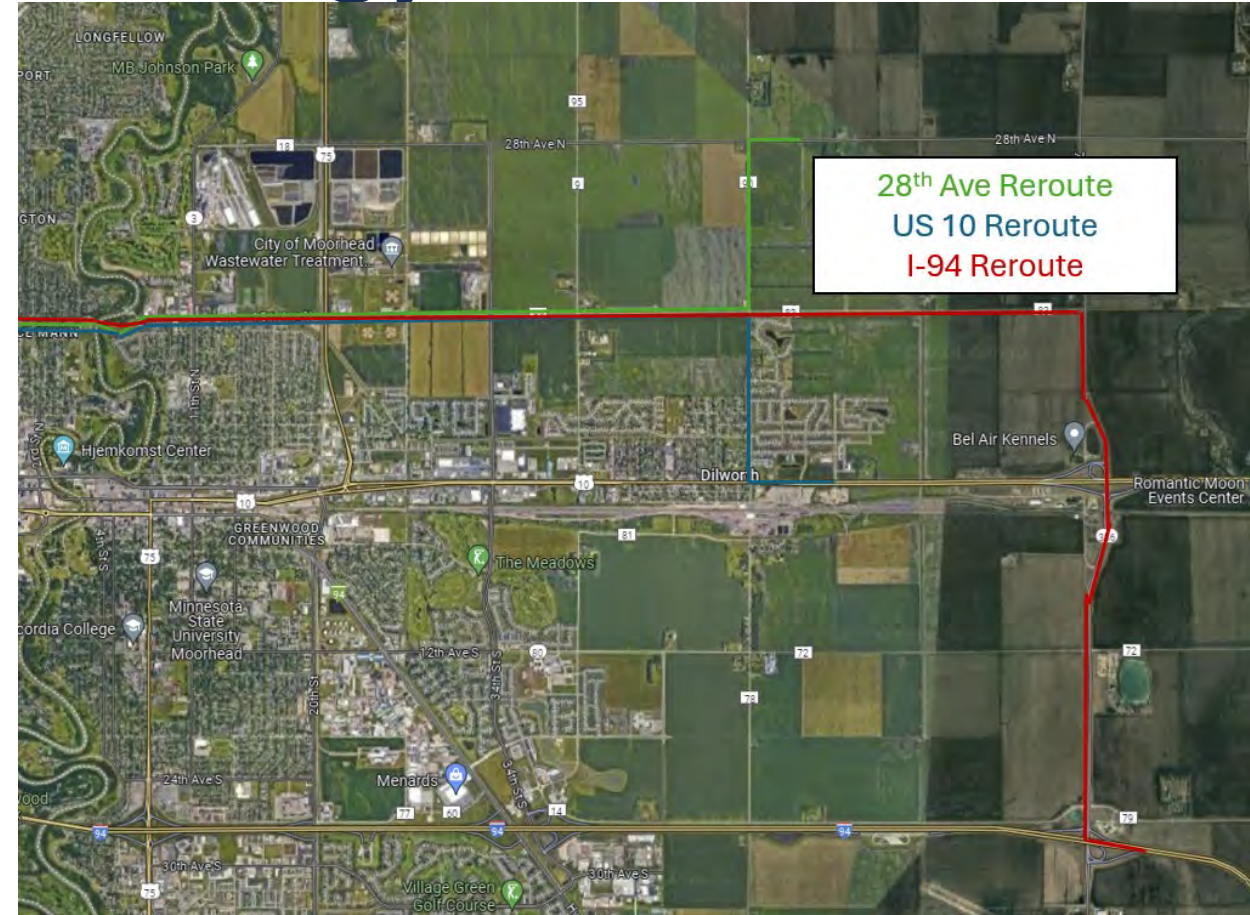
Crash Data

Crash 1

- September 2017
- No Injury
- Angle Crash
- Rain, Wet Road

Crash 2

- December 2019
- Possible Injury
- Angle Crash
- Icy Road, Slid through Intersection

Crash 3

- October 2023
- No Injury
- Angle Crash
- Unable to Stop

Crash 4

- December 2023
- No Injury
- Run Off Road
- Distracted Driver

All crashes occurred near one intersection:
15th Avenue & CSAH 9

0.548: Crash Rate
0.710: Critical Rate
0.77: Critical Index

15th Ave N Corridor Study

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Utilities

Natural Gas

Crosses 15th Ave underground between 40th St and 50th St

Overhead Power

Runs along south side of 15th Ave from 40th St to 70th St

Crosses 15th Ave to access substation at 50th St

Sanitary Forcemain

Along north side of 15th Ave from 40th St past 50th St subdevelopment

Branch lines cross 15th Ave

15th Ave N Corridor Study

METROCOG
FM REGIONAL TRANSPORTATION PLANNING ORGANIZATION

Know Corridor Issues?

Open Discussion

Public Involvement

- Loco Daze
  - Introduction to Project
  - Existing Conditions Map
  - Project Survey

- Stakeholder Meetings
  - Discuss known corridor issues

- Landowner Engagement
  - Post Card
  - Project Survey

Going Forward

- Loco Daze Public Engagement
- Future Conditions
- Existing Conditions/Future Conditions Report
- SRC Meeting #2 – Targeting week of 8/26
    - Stakeholder Recap
    - Future Conditions Review
    - Alternative Development Kickoff

15ᵗʰ Avenue N Corridor Study – SRC Meeting #2
Meeting Minutes

Date: 8/26/2024   **Time:** 11:00 AM
                                          Facilitator: Scott Middaugh

Attendees: Michael Maddox – Metro COG; Justin Sorum – Clay County; Peyton Mastera, Don Lorsung, Matthew Engbrecht – City of Dilworth; Mary Safgren – MnDOT; Carol Kurtyka – Moorhead Township; Jerry Gee – Oakport Township; Todd Hummel, Veroncia Richfield, Scott Middaugh - KLJ

Introductions
1. Introduction for the group were made. Representatives from Moland Township were not present.

Public Involvement
1. Scott M. gave an overview of the public involvement that has been completed to date:
    a. KLJ staff attended Loco Daze to introduce the public to the project and directed them to the project website and project survey.
    b. Postcards were mailed to landowners within 1,000' of the corridor to inform them of the study and direct them to the project survey.
2. Scott M. reviewed the results of the project survey as of 8/19/24
    a. To date 118 people have participated in the survey.
3. Scott M. asked the group if it was ok to close the survey as another round of public engagement will be completed later this fall.
    a. No opposition from the group.
4. Scott M. stated that two individuals along the corridor have reached out via email or phone to voice their opinion about the project
    a. One individual was strongly opposed to the project
    b. One individual was not opposed to the project but was opposed to losing a portion of their land for roadway improvements.

Existing Traffic Volumes Recap
1. Veronica R. gave an overview of the existing traffic volumes collected on the corridor.
    a. A combination of cameras and tube counters were used to collect the existing traffic data.
2. Scott M. stated that this information is available in the Existing and Future Conditions report that was sent out to the group last week.
    a. Scott M. requested that all comments on the report be received by 9/4/24.

Future Conditions
1. Veronica R. gave an overview of the methodology used to determine future traffic volumes for the corridor.
    a. Three components used to determine future traffic volumes:
        i. Background growth rate – observed through the entire metro area
        ii. Traffic diversion based on an origin-destination analysis – determining what percent of traffic will divert from 28ᵗʰ Ave, US 10, and I-94 if the corridor is improved

      iii.   New development in the area – looking at different development scenarios within Dilworth and adjacent to the corridor

2. Three scenarios were reviewed based on different ranges of the three components listed above:
    a. Low Increase – 2045 ADT of 500 to 2,700 along 15th Ave N
    b. Moderate Increase – 2045 ADT of 780 to 3,000 along 15th Ave N
    c. High Build-Out Increase – 2045 ADT of 1,350 to 7,700 along 15th Ave N
3. Veronica R. discussed possible new intersections with the corridor and the amount of traffic those intersections could generate based on the development adjacent to the corridor.
4. Based on the model results the corridor and its intersections operate at an acceptable level of service (LOS) if:
    a. On the moderate increase scenario, the two-way stop at CSAH 9/15th Ave N is swapped from an E/W stop control to a N/S stop control
    b. On the high build-out scenario CSAH 9 would need improved intersection control such as a roundabout to operate at LOS C
5. Don L. asked if traffic that would permanently use 15th Ave N in the future was considered in the analysis.
    a. Veronica R. stated that was incorporated as part of the origin-destination analysis.
6. Michael M. asked what the probability of meeting the high build-out traffic volumes was.
    a. Scott M. stated it wasn't too likely, but it was more of an exercise to determine if the area sees significant development would it create traffic volumes that would require a different roadway section than the lower scenario traffic forecasts.

Alternatives Development
1. Scott M. stated that the alternatives that have been developed are very high level and are to for the group to review and determine if there are any alternatives that shouldn't be carried forward or if there are any alternatives beyond what we present that should be considered.
2. Todd H. walked through the existing typical section and the proposed typical sections:
    a. Rural two lane
        i.   12' lanes with 1' shoulders
        ii. 12' lanes with 8' shoulders
            1. Either fully paved or just 2' of the 8' paved
    b. Urban two lane
        i.   12' lanes with curb and gutter
    c. Pedestrian facilities
        i.   Heartland Trail study includes an alternative to follow 15th Ave N
        ii. Alternatives could include a 10' sidewalk on either the north or south side of the roadway
    d. Todd H. stated that Drain 41 has 1:4 inslopes on the north side so it would be a safe slope adjacent to the roadway
        i.   Would need to discuss the clear zone with the group as the water level in the drain varies throughout the year
            1. Michael M. asked what clear zone we were using at the moment
                a. Scott M. stated that we haven't determined the clear zone as it will vary depending on design speed.
    e. Peyton M. stated that he feels that curb and gutter on this roadway feels excessive.

      f.   City of Dilworth stated that pedestrian facilities should be included, maybe not on the eastern mile of the study area, but it would be good to have an east/west connection to Moorhead.

3.   Scott M. stated that before the alternatives analysis can get too far, the group will need to meet and discuss future ownership and maintenance of the roadway. For example, standards for County design may require a different typical section than if the townships or City of Dilworth would own the roadway.

      a.   Michael M. agreed that future ownership needs to be determined as the lane width could be reduced to 11' depending on ownership.

Next Steps

1.   Scott M. stated that the next steps of for KLJ to continue the Alternative Development, which will have to work in tandem with the Implementation Plan.

      a.   Scott M. will be sending out a Doodle Poll to determine what time works best for the group to meet in person

            i.   Peyton M. and Justin S. stated that they both have conference rooms that could host the meeting.

            ii.   It was determined that the City of Dilworth, Clay County, and all townships should be involved in the meeting.

                  1.   Mary S. stated that MnDOT feels this should be a local road and does not need to be part of this meeting.

2.   Scott M. stated that the next SRC meeting is scheduled for the week of 10/13.

      a.   Justin S. said that Monday 10/14 at 11 seems to work for the group

      b.   Don L. asked if the meeting could be on Wednesday, 10/16.

            i.   Scott M. will send out a Doodle Poll to see who is available between the two times.

Study Review Committee #2

August 26, 2024

Agenda

- Introductions

- Public Involvement

- Existing Traffic Volumes Recap

- Future Conditions

- Alternatives Analysis Kickoff

- Next Steps

Public Involvement

- Attended Loco Daze
    - Introduced project
    - Directed public to survey

- Post cards
    - 1000' radius around project
    - Informed residents/landowners of project
    - Directed to project survey

Survey Results (as of 8/19/24)

Do you live, own, or rent property along the corridor?

■ Yes ■ No

How do you currently use the corridor?

■ I live along the corridor
■ Commuting/traveling through the corridor
■ Agricultural
■ Recreation
■ I don't currently use the corridor
■ Other
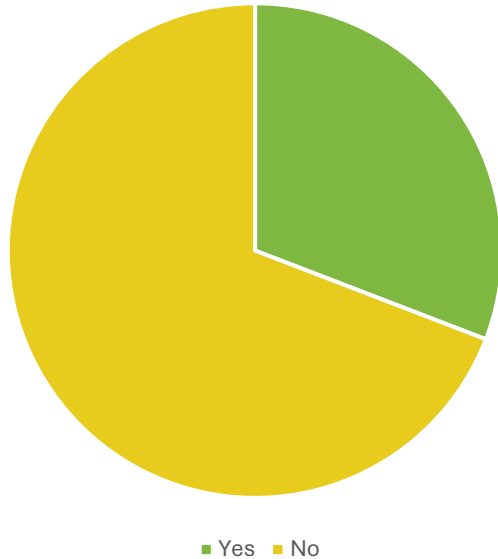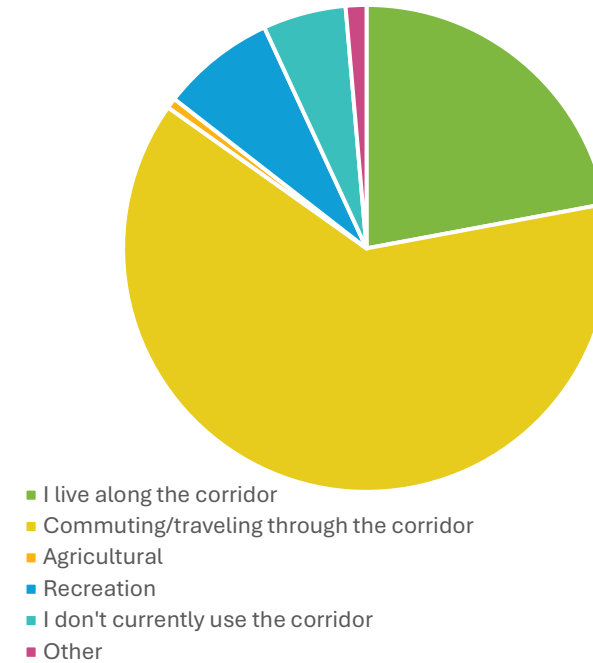
Survey Results (as of 8/19/24)

How frequently do you use the corridor?
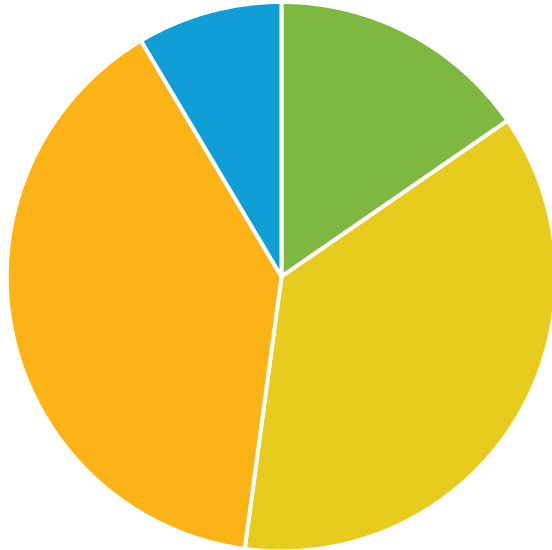
- Daily
- 2-4 times per week
- Less than once per week
- I don't use the corridor

Would you use the corridor if it was improved beyond a gravel roadway?
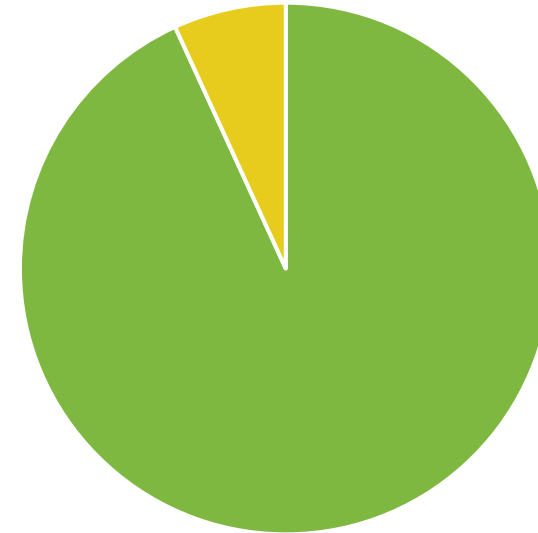
- Yes
- No

Survey Results (as of 8/19/24)

Would future improvements interfere with how you currently use the corridor?
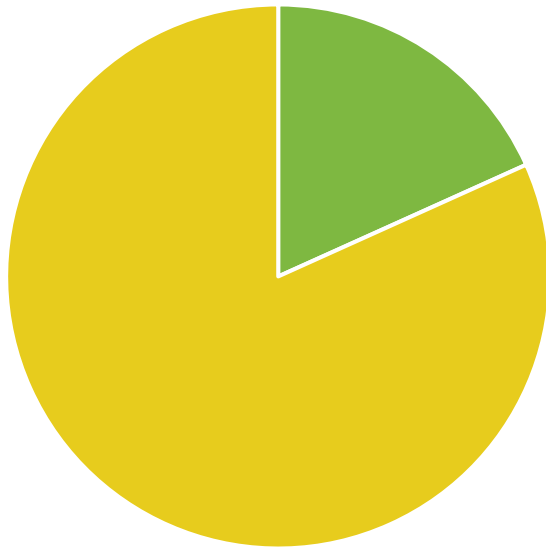
■ Yes ■ No

What would you like the roadway to include in the future?
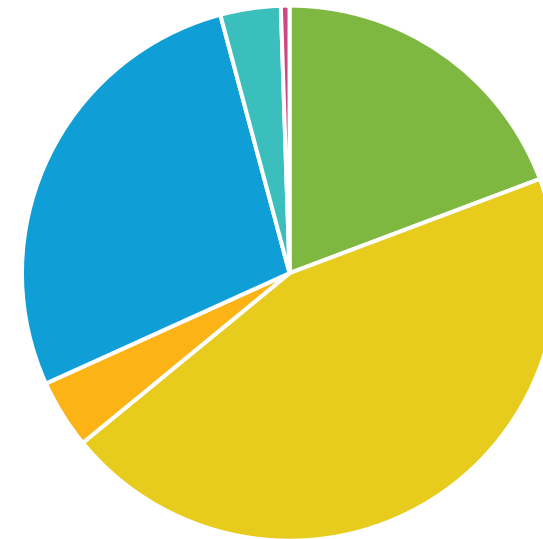
■ Paved urban roadway (includes curb and gutter)

■ Paved rural roadway (does not include curb and gutter)

■ Widened and improved gravel roadway

■ Bike/pedestrian sidewalk or trail

■ I do not want to see the roadway improved from its current condition

■ Other

Survey Results (as of 8/19/24)

Where do you live?

- Dilworth, MN
- Moorhead, MN
- Fargo, ND
- None of the above
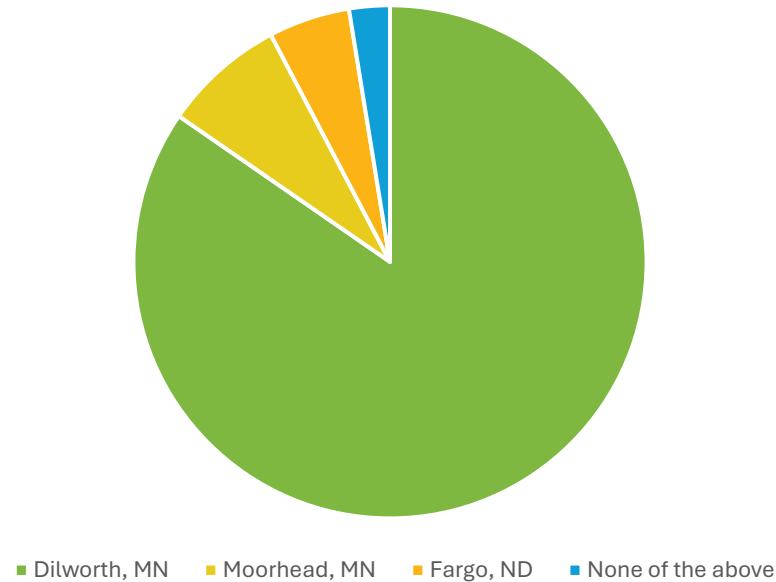
Survey Results (as of 8/19/24)

Survey Comment Box

- Common Themes
  - Excessive speeds
  - Add pedestrian facilities
  - Project costs/special assessments

Public Comments
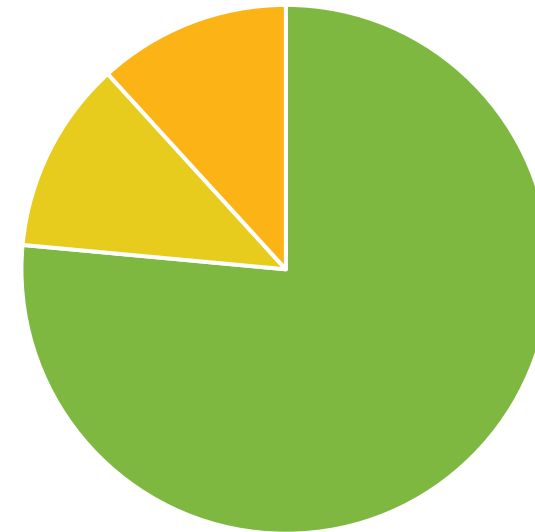
■ In Favor ■ Against ■ Nuetral

Existing Traffic Volumes Recap
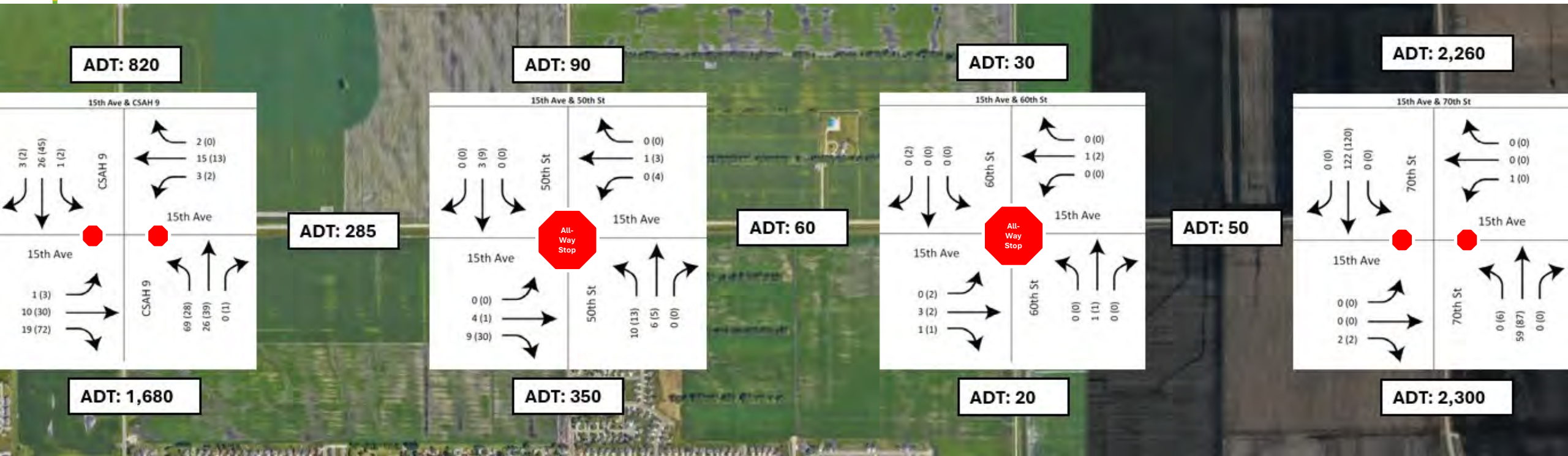
Volumes listed as AM Peak (PM Peak)

AM Peak is 7-8 AM

PM Peak is 4:30-5:30 PM

Future Conditions Methodology

Three components for future volumes:

(1) Background growth rate – (2) Traffic diversion (from O/D) – (3) New development

Scenario	Background Growth Rate	Diverted Traffic	Development Level
Low Increase	0.5%	Minimal	2045 Comprehensive Plan
Moderate Increase	1.0%	Expected	2045 Comprehensive Plan
High Build Out	1.5%	Increased	Expanded

Future Volumes – Diverted Traffic

StreetLight Origin-Destination (Top Routes) Analysis:

- Drivers traveling between north Fargo and east of the metro may opt to reroute along an improved 15th Ave

- Rerouting potential is highest along three routes: I-94, US 10, 28th Ave

	Proportion of North Fargo-East Metro Traffic Diverted		
Scenario	I-94	US 10	28th Avenue
Low Increase	0%	10%	25%
Moderate Increase	10%	35%	50%
High Build Out	10%	35%	100%
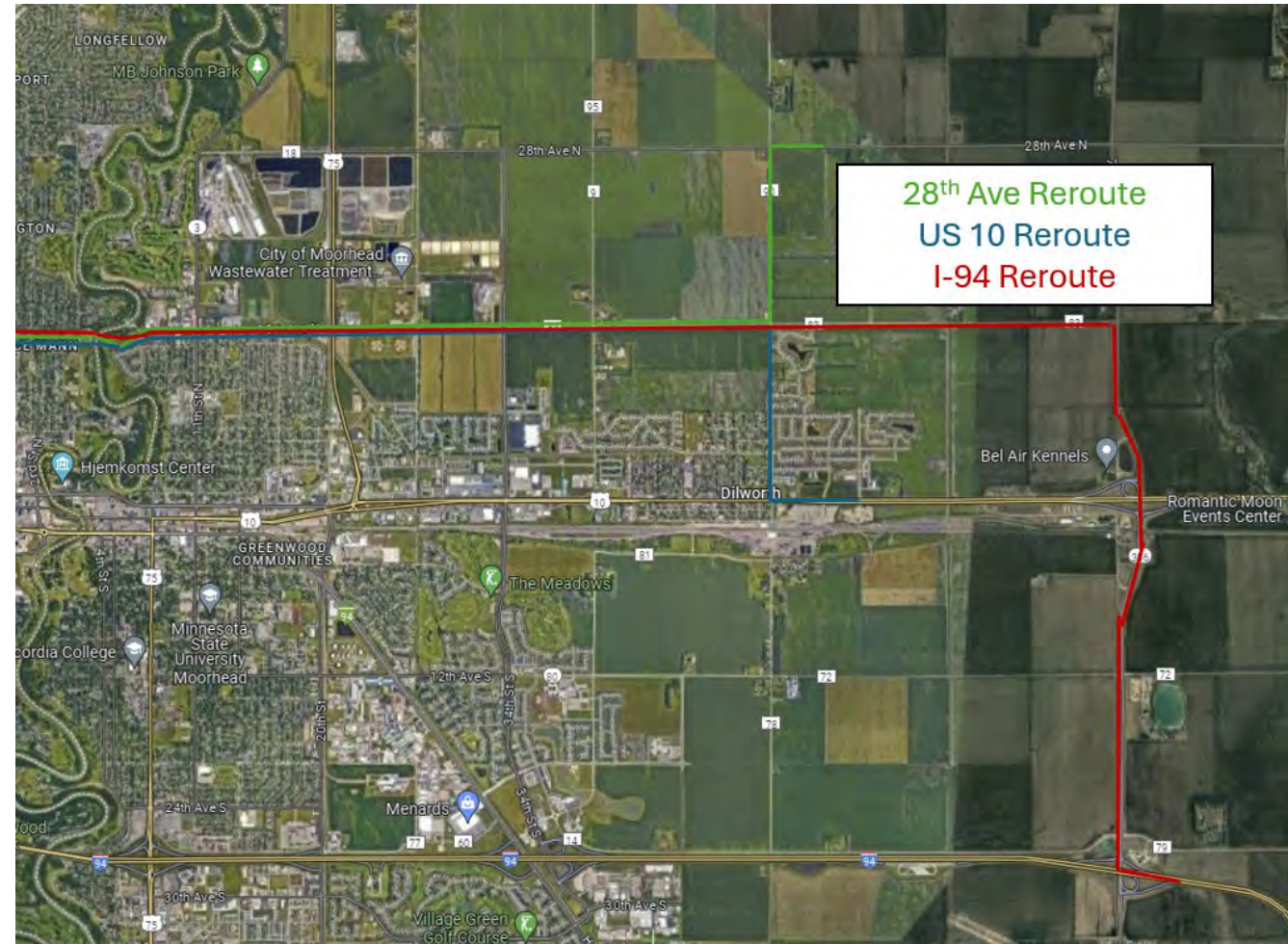
Future Volumes – New Developments

Scenario	New Trips Generated (Per Day, 2045)				
	Light Industrial	Single Family Housing	Multifamily Housing	Public Park	Commercial/ Retail
Low/Moderate Increase	390	1,266	454	140	0
High Build Out	390	3,165	1,135	140	1,906

Source: Institute of Transportation Engineers TripGen

Future Road Considerations

New roads may be constructed to connect future development:

- Between 40th & 50th

- Between 50th & 60th
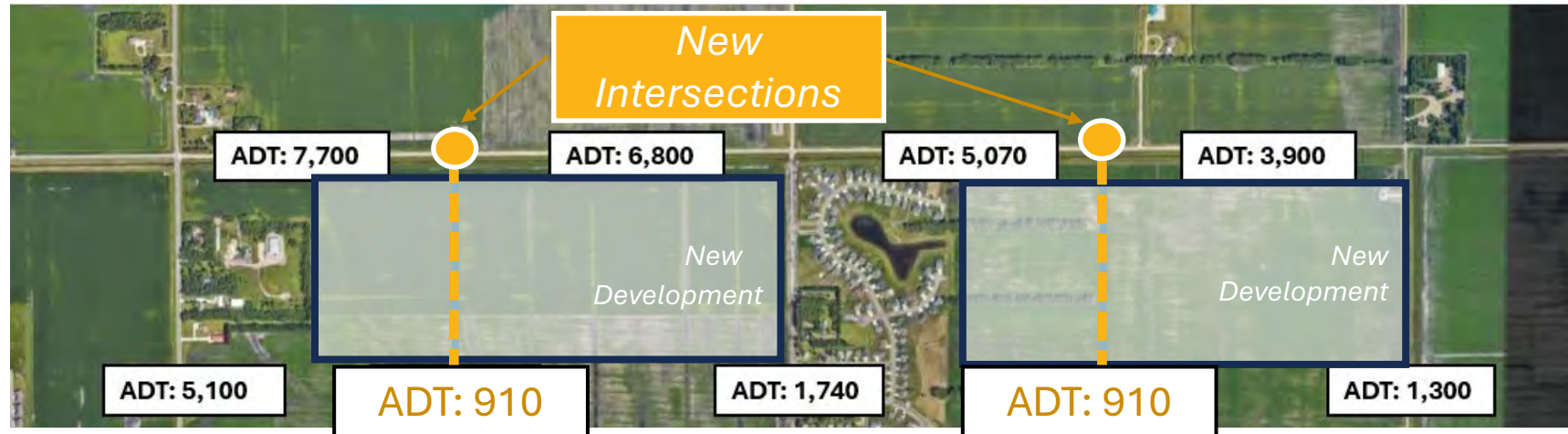
New roads not modeled in Future Level of Service analysis.

Future Volumes (2045)

Low Increase Scenario

Future Volumes (2045) [Continued]

Moderate Increase Scenario

ADT: 2,000 | ADT: 110 | ADT: 30 | ADT: 2,810

CSAH 9 | ADT: 3,000 | ADT: 2,050 | ADT: 780 | CSAH 11

LOS B* | LOS A | LOS A | LOS B

ADT: 2,100 | ADT: 430 | ADT: 1,300 | ADT: 3,200

15th Ave N Corridor Study

* Switching the Two-Way Stop Control between CSAH 9 and 15th Ave improves performance to Level of Service A.
*Friday PM Peak: Operates at Level of Service C.

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Future Volumes (2045) [Continued]

High Build-Out Scenario

ADT: 2,100

ADT: 120

ADT: 30

ADT: 3,140

CSAH 9

ADT: 7,700

ADT: 4,070

ADT: 1,350

CSAH 11

LOS F*

LOS B

LOS A

LOS B

ADT: 5,100

ADT: 1,740

ADT: 1,300

ADT: 3,700

Switching the Two-Way Stop Control between CSAH 9 and 15th Ave does not improve Level of Service.
A roundabout improves performance to Level of Service C.

Model Results

	Future (2045) Delay	Mitigation Warranted	Mitigation Type
Existing	Acceptable	No	-
Low Increase Scenario	Acceptable	No	-
Moderate Increase Scenario	Acceptable	No, but improves operations	Switch the stop-controlled approaches: CSAH 9 stops
High Build Out Scenario	Unacceptable	Yes	**Roundabout** at CSAH 9

Alternatives Development

- Rural 2 Lane

- Urban 2 Lane

- Pedestrian Facilities
    - North Side
    - South Side
    - Heartland Trail Incorporation

Existing Section

- **Land Acquisition**
- **Tree Impacts**
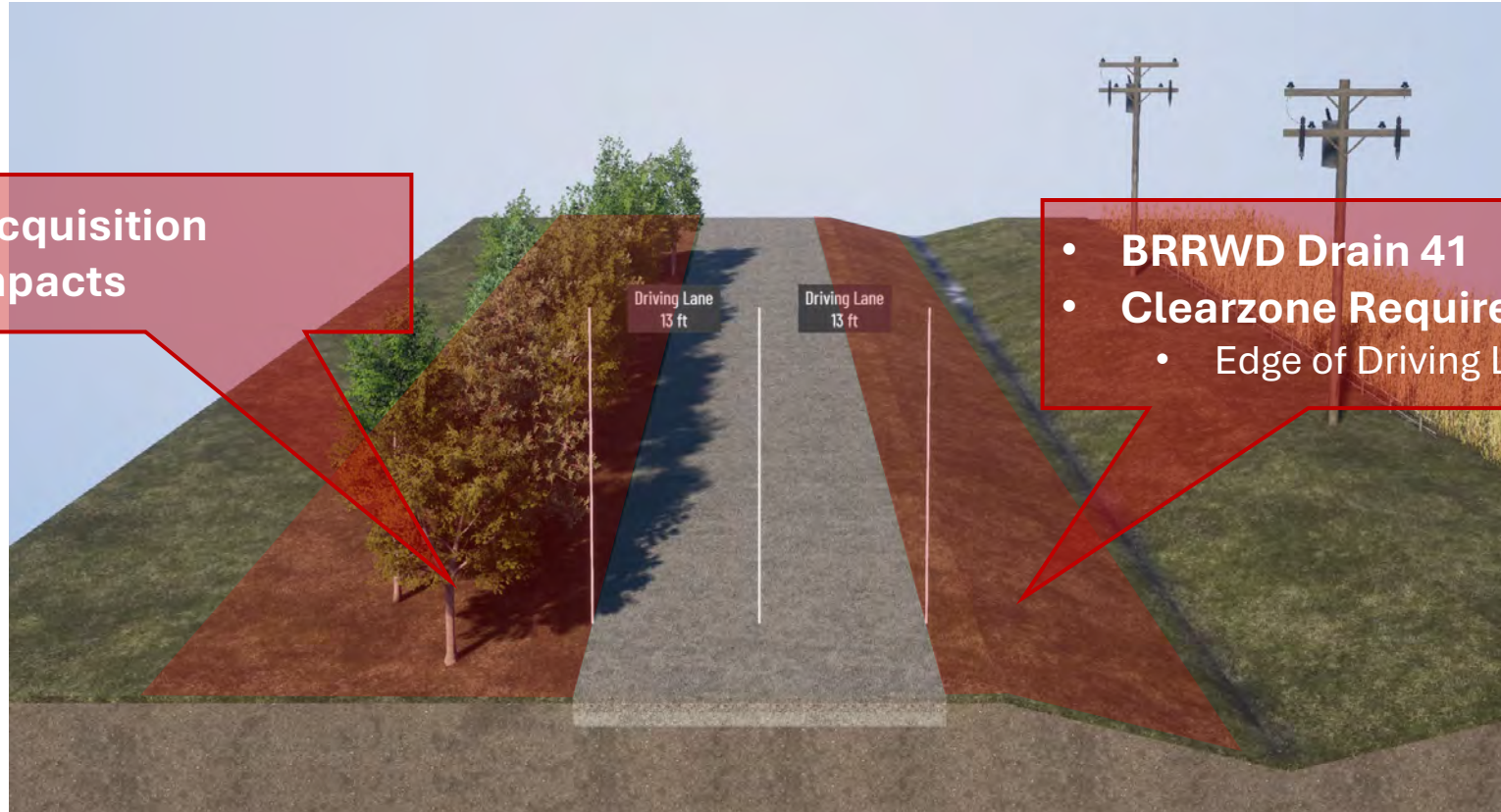
- **BRRWD Drain 41**
- **Clearzone Requirements**
  - Edge of Driving Lane

Driving Lane 13 ft

Driving Lane 13 ft

Rural 2 Lane (Matching West of CSAH 9)
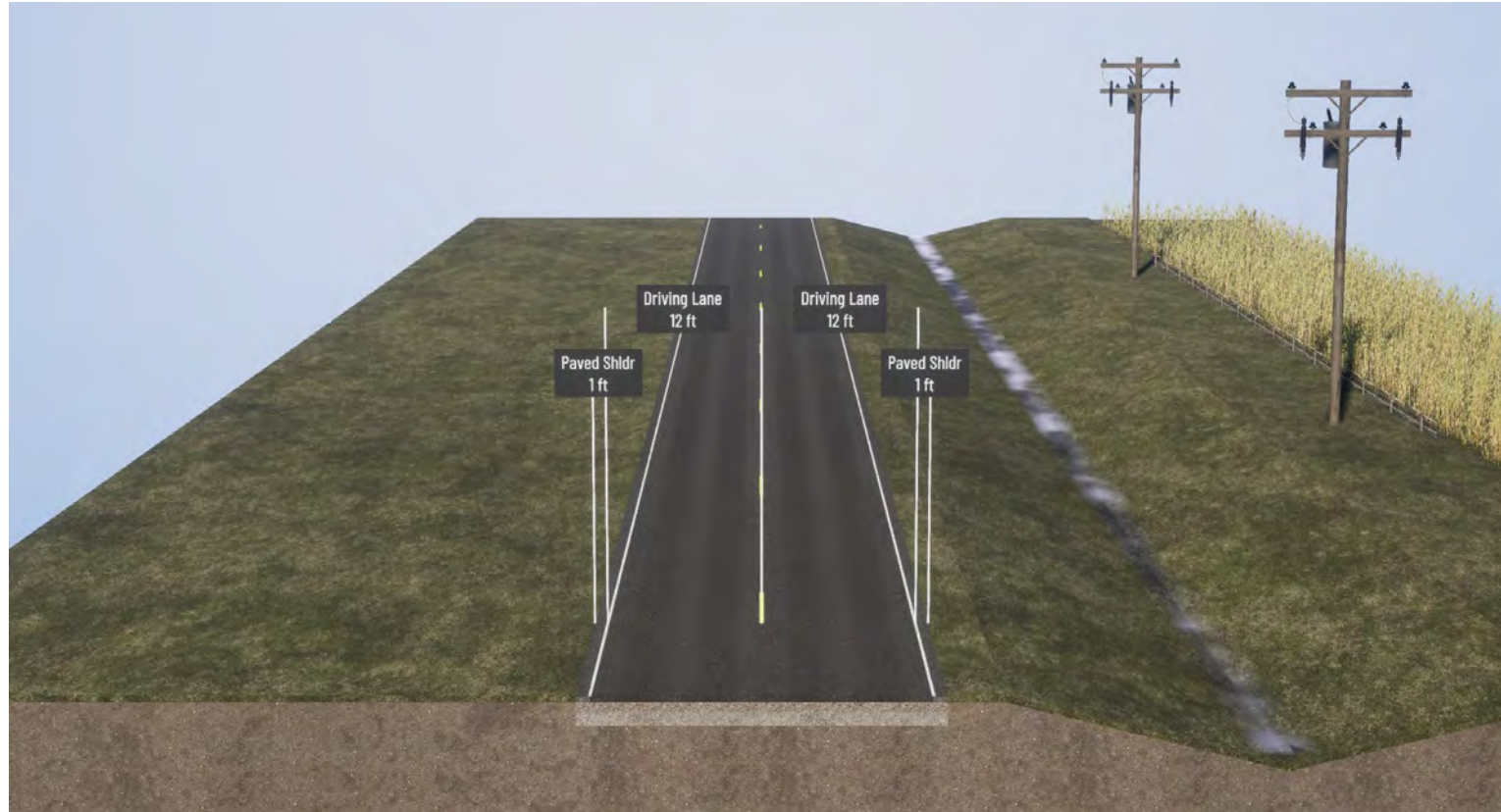
Rural 2 Lane with Gravel Shoulders
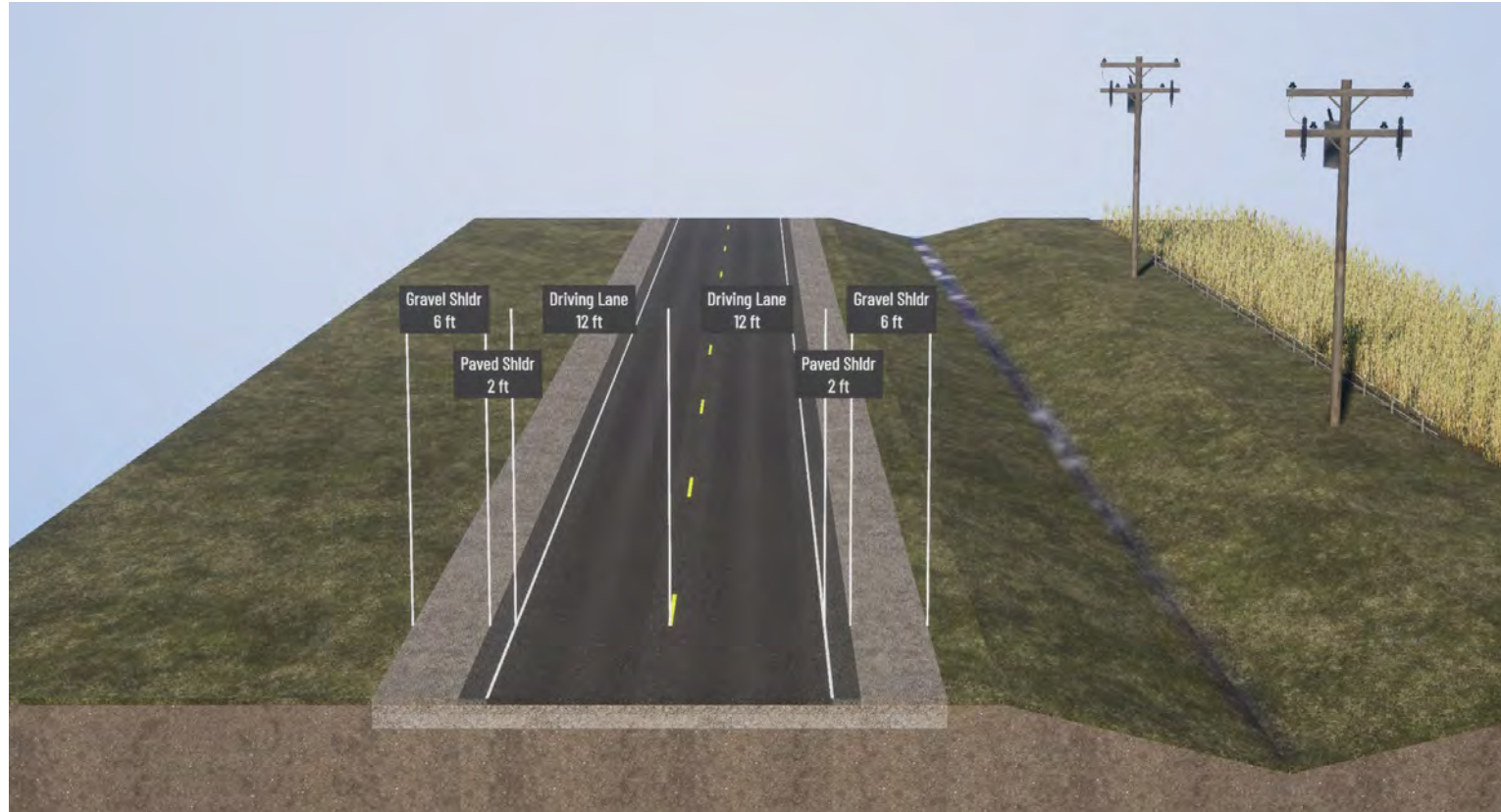
Rural 2 Lane with Paved Shoulders
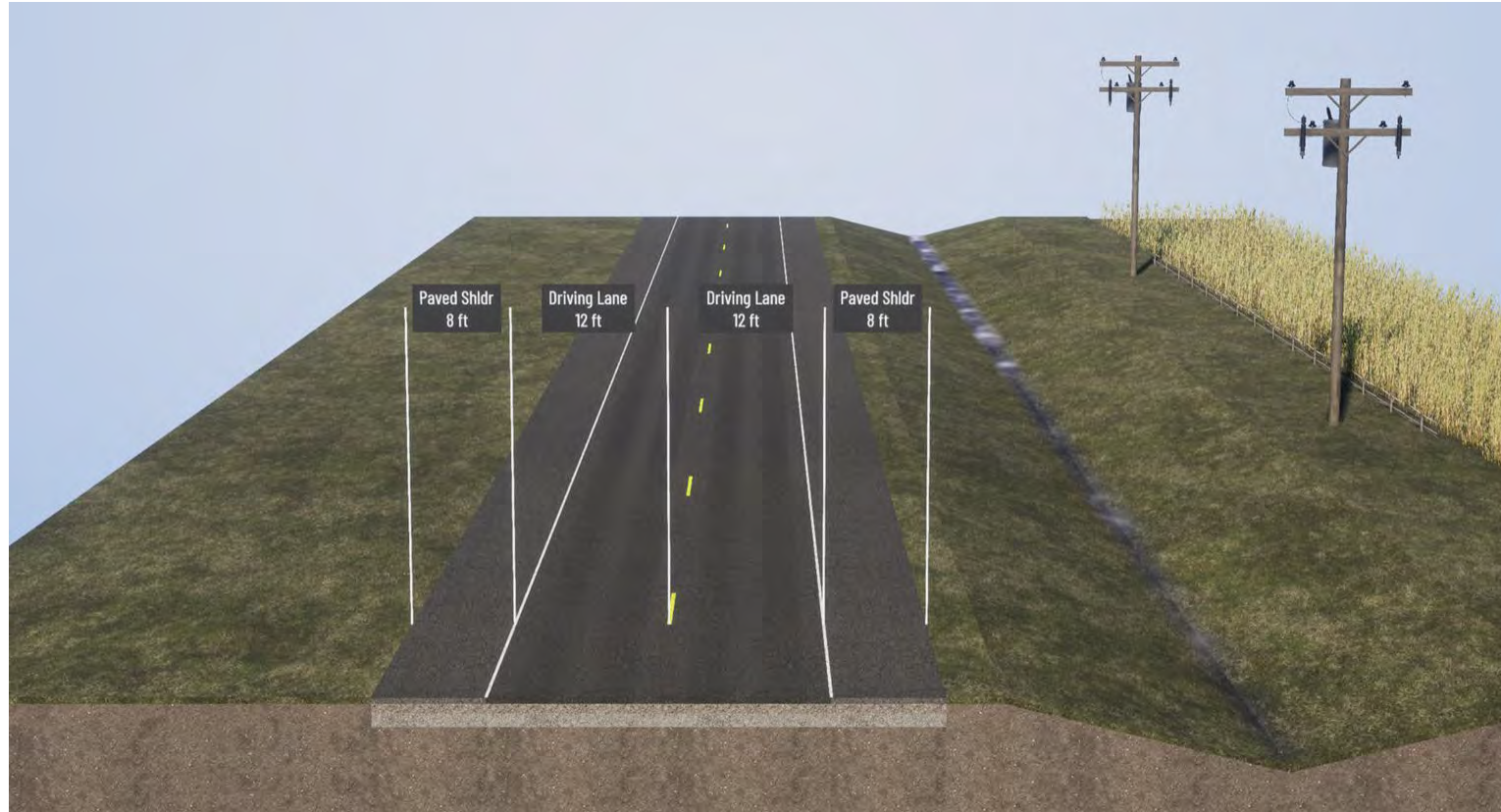
Rural Section with Path on North
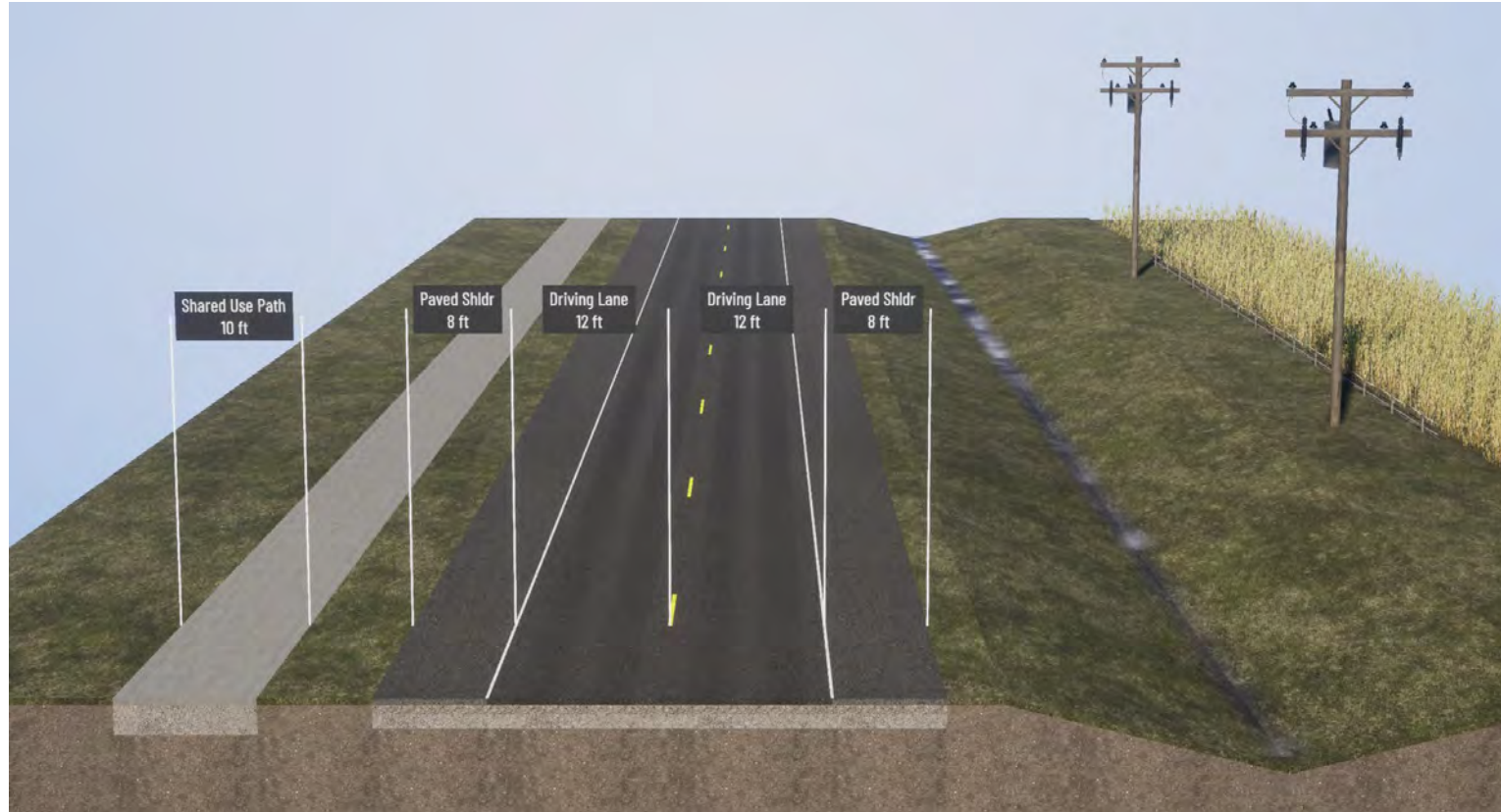
Rural Section with Path on South
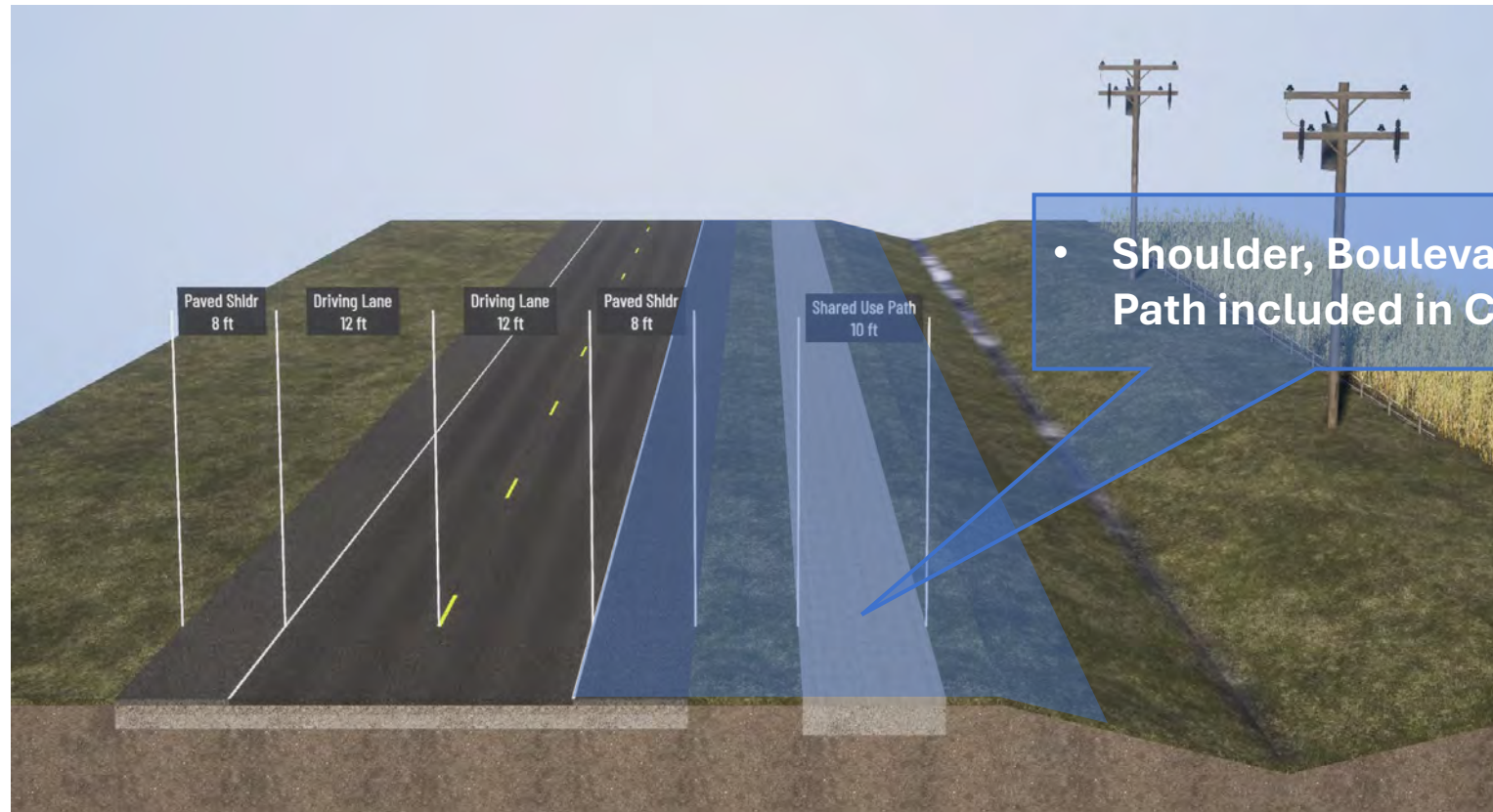
- **Shoulder, Boulevard, & Path included in Clearzone**

Paved Shldr 8 ft · Driving Lane 12 ft · Driving Lane 12 ft · Paved Shldr 8 ft · Shared Use Path 10 ft
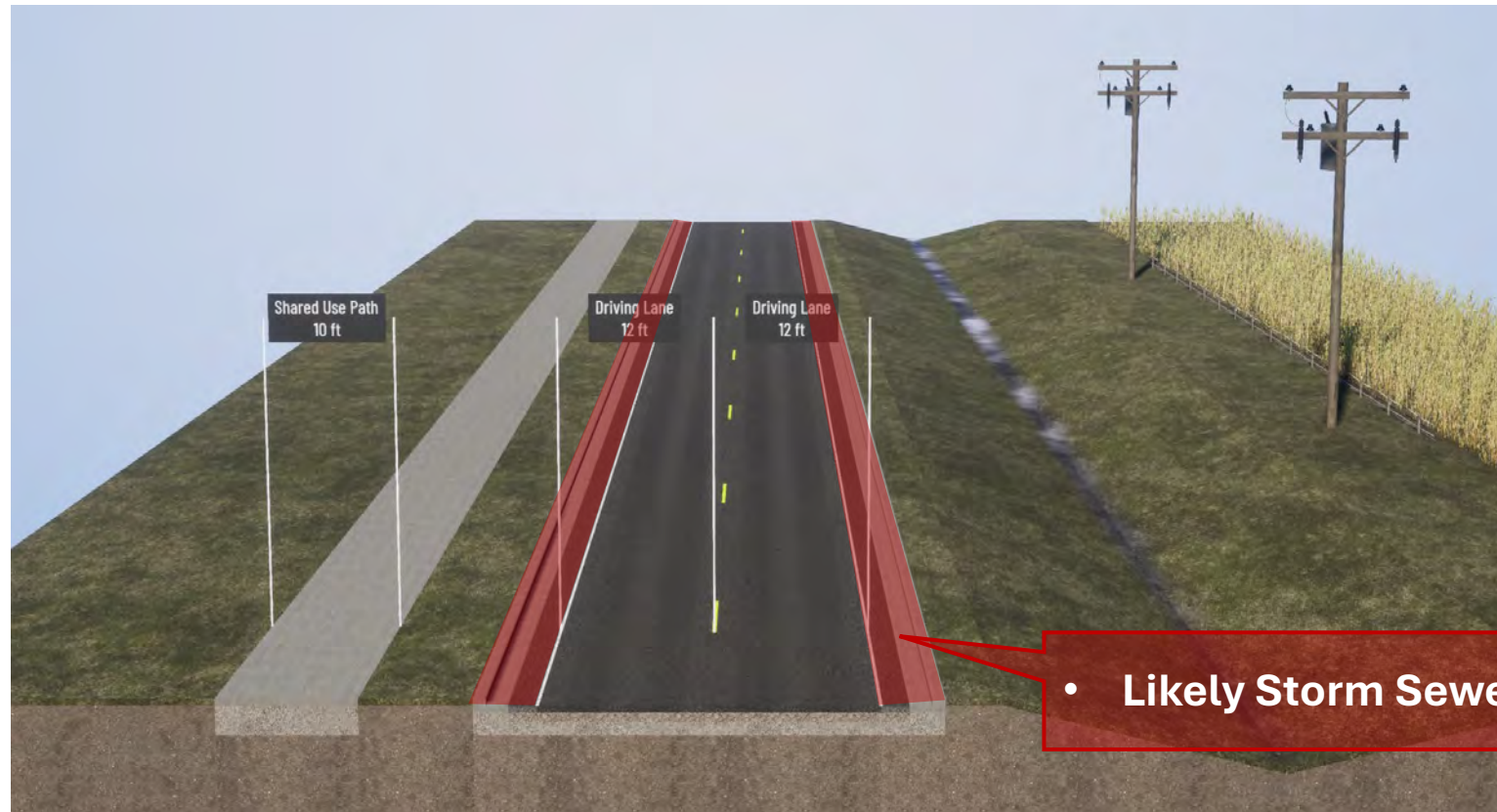
Urban 2 Lane with Path on North

Urban 2 Lane with Path on South
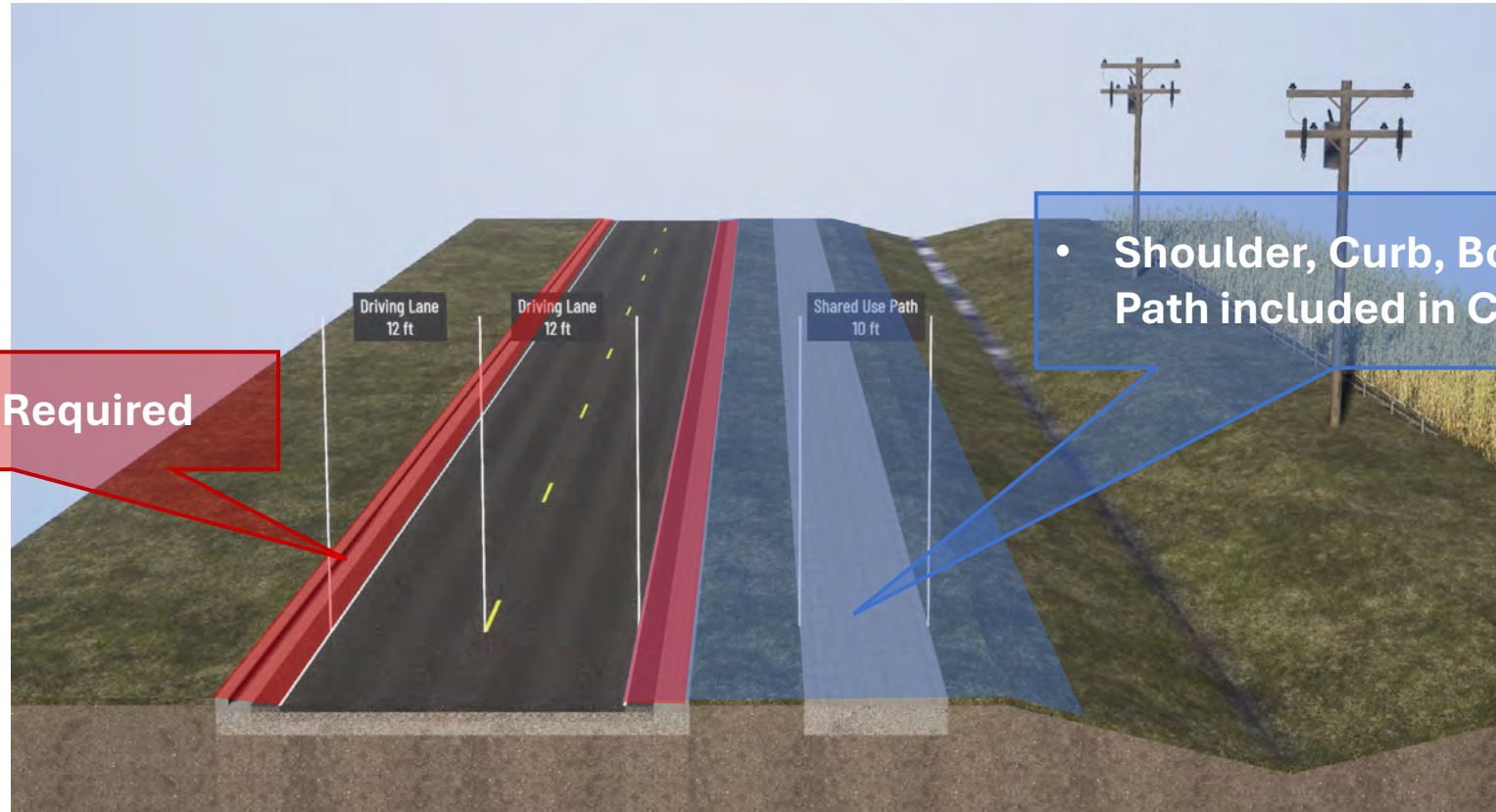
- **Storm Sewer Required**

- **Shoulder, Curb, Boulevard, & Path included in Clearzone**

Driving Lane 12 ft

Driving Lane 12 ft

Shared Use Path 10 ft

Next Steps

- Refine Alternatives & Scoring Criteria
- Begin Implementation Plan Development
- SRC #3 Planned for week of October 13th

15ᵗʰ Avenue N Corridor Study – SRC Meeting #3
Meeting Minutes

Date: 10/14/2024   **Time:** 11:00 AM

Facilitator: Scott Middaugh

Attendees: Michael Maddox – Metro COG; Justin Sorum – Clay County; Peyton Mastera, Matthew Engbrecht – City of Dilworth; Mary Safgren – MnDOT; Carol Kurtyka – Moorhead Township; Jerry Gee – Oakport Township; Jeff Winter – Moland Township; Todd Hummel, Scott Middaugh - KLJ

Alternatives Analysis

1. Todd H. gave an overview of the alternatives. Five typical sections have been developed:
   a. Rural Minimum – 2' shoulders, 11' driving lanes
   b. Rural Non-CSAH County Minimum – 4' shoulders, 11' driving lanes
   c. Rural CSAH County Minimum – 8' shoulders, 11' driving lanes
   d. Urban Option 1 – curb & gutter, 36' flow line to flow line of gutter
   e. Urban Option 2 – curb & gutter, 40' flow line to flow line of gutter
2. Based on the Future Ownership & Maintenance meeting held on 10/7 alternatives a & b above will be carried forward
3. There are options for each typical section to include a separate pedestrian path on the south side of the roadway
   a. The inclusion of a pedestrian path adds approximately 18' of right of way acquisition to the alternatives
4. Based on Northside Park Addition (south side of 15ᵗʰ Ave between CSAH 9 and 50ᵗʰ St) and the Summerwood Addition (south side of 15ᵗʰ Ave between 50ᵗʰ St to just east of 50ᵗʰ St) the design team assumed 50' minimum right of way acquisition north of the proposed centerline.
5. Because of Drain 41 paralleling the south side of 15ᵗʰ Ave, any widening for the roadway will need to be shifted to the north.
   a. There are two residential properties and a power pole guy wire at the substation that would be impacted by shifting the roadway north
6. When shifting the roadway north, the design team held the hinge point where the top of roadway breaks and the inslope of the drain begins.
7. Todd H. summarized the right of way needs for the different typical sections with and without a separate pedestrian path.
8. If the roadway is shifted north, the residential properties at the NE corner of 15ᵗʰ Ave/CSAH 9 and the NE corner of 15ᵗʰ Ave/60ᵗʰ St will be impacted
   a. Both of those property owners have reached out and expressed resistance to property impacts
   b. Justin S has stated that snow drifting has been an issue at the NE corner of 15ᵗʰ Ave/CSAH 9 because the trees are directly adjacent to the north side of the road
9. Michael M asked if turn lanes are required anywhere. Scott M stated that KLJ has ran the analysis and determined that some turn lanes are required, but not at all locations. The turn lanes will be incorporated into the alternative exhibits
10. In an effort to avoid residential property impacts, the design team has looked at shifting the roadway to the south at the NE corner of 15ᵗʰ Ave/CSAH 9 and the NE corner of 15ᵗʰ Ave/60ᵗʰ St
    a. This shift would require shifting Drain 41 and the overhead powerlines.

b. If separate pedestrian facilities are included, the further the drain will have to shift
c. The existing 33' right of way would be the northern edge of the corridor, everything would shift south from there
d. KLJ has discussed a drain shift with the Buffalo-Red River Watershed District (BRRWD) and they weren't opposed, but there is a process that needs to be followed
     i. Scott M will follow up with BRRWD to confirm nothing has changed
11. Todd H summarized the right of way needs for the different typical sections with and without a separate pedestrian path if the roadway was shifted to the south
     a. The right of way impacts are based on a 40 MPH curve design speed
     b. Justin S stated that if the roadway is owned by Clay County they may have to design to 55 MPH
          i. Justin said he would be fine if the roadway was signed at 55 MPH but the curves had an advisory sign of 40 MPH
12. Todd H reviewed the requirements for on and off road bike facilities in urban and rural conditions
13. Scott M updated the group with the latest on the Heartland Trail study and how it pertains to the 15th Ave project
     a. KLJ is met with the Heartland Trail study team on Tuesday (10/15) to discuss the two projects
     b. Currently, the preferred alignment for the trail is to enter Dilworth/Moorhead at the intersection of 12th Ave S/34th St, then follow 34th St N to 15th Ave N, then follow 15th Ave to Centennial Park
          i. This alignment was selected to avoid crossing the railroad at Main St in Dilworth
     c. In the future, when an overpass is constructed at 14th St in Dilworth, the trail will enter Dilworth at the intersection of 12th Ave S/14th St, head north along 14th St to 15th Ave N, then parallel 15th Ave N to Centennial Park in Moorhead
     d. The Heartland Trail team is going to look at the possibility of locating the trail on the south side of the drain to minimize right of way impacts for 15th Ave N on the north side of the drain.
14. The following questions were asked of the group:
     a. Should alternatives include options for pedestrian facilities?
          i. Peyton M stated that they should between CSAH 9 and 60th St
     b. How much right of way should be preserved on the corridor?
          i. The group concurred with the 50' assumed by the design team
     c. Should right of way be preserved for future rural to urban improvements?
          i. Peyton M stated that right of way should be acquired for Urban Option 1
          ii. Peyton M requested that KLJ contact Moore Engineering to coordinate with future city infrastructure
     d. Should options include realigning the roadway/ditch to the south to avoid residential property impacts on the north side of 15th Ave?
          i. Peyton M stated he did not think it was necessary due to costs
          ii. Michael M stated that with the NEPA process, costs cannot be a factor in determining alternatives, therefore the alignment shift should be included
15. Todd H summarized the scoring criteria that will be used to score the alternatives. The corridor study will not recommend a preferred alternative but instead can rely on scoring metrics to see what alternative scores the best

16. Scott M stated that KLJ will get going on the design alternatives and send out to the group for approval.
    a. The next step in this process will be to go to the public with our findings of the study
    b. Scott M asked if we needed to have the future ownership/maintenance clarified prior to the public input meeting.
        i. Peyton M stated that he didn't feel a conclusion was necessary for the public input meeting, but could be discussed as a general topic
    c. Peyton M stated that the public input meeting could be held at Dilworth's Depot Facility

Study Review Committee #3

October 14, 2024

Agenda

Alternatives Analysis Refinement

Alternative Scoring Criteria

Future Public Involvement

Next Steps

Alternatives Development

Rural Minimum (Industry Standards)

Rural Minimum (Non CSAH)

Rural State Aid (CSAH)

Urban Option 1 (36' face to face)

Urban Option 2 (40' face to face)

- Pedestrian Facilities/ Shared Use Paths Options

- Realignment Options

Alternatives Development
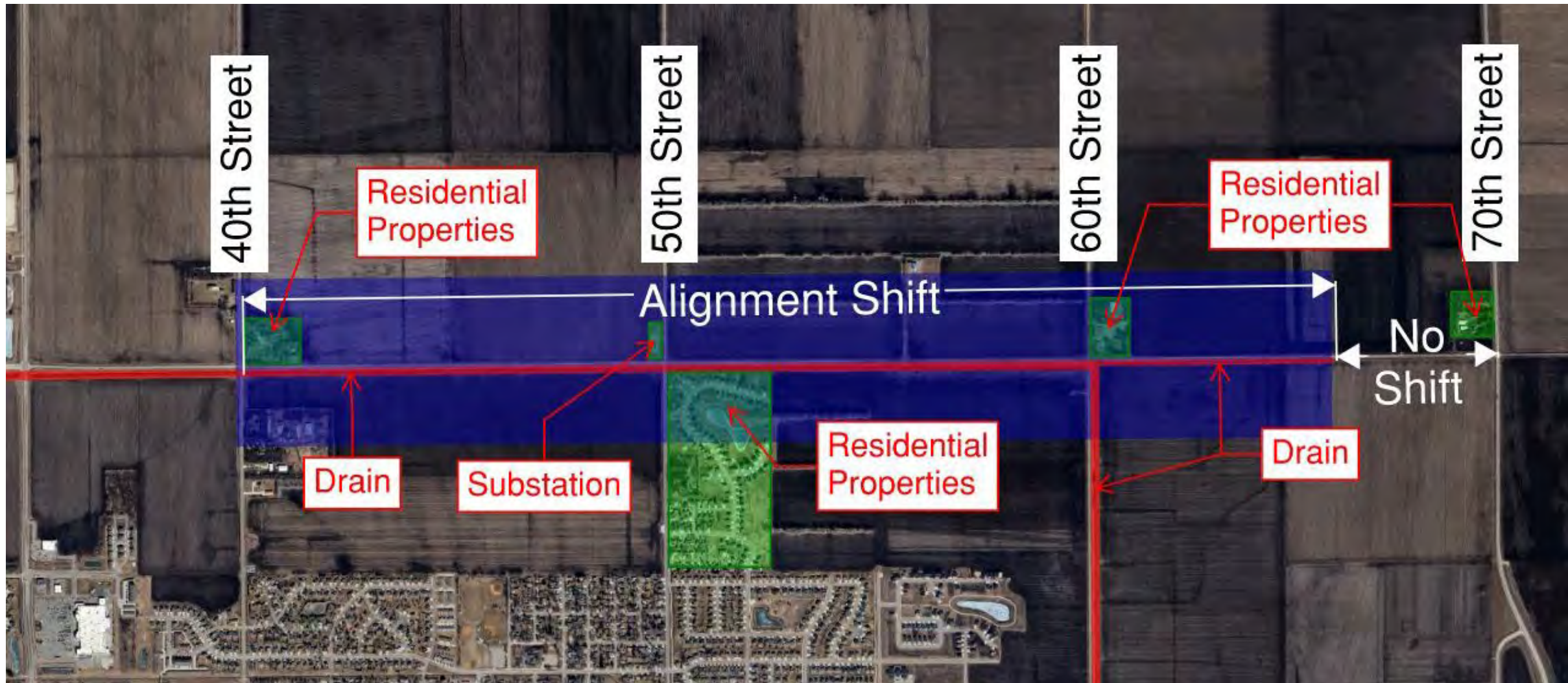
Rural Minimum (Industry Standards)
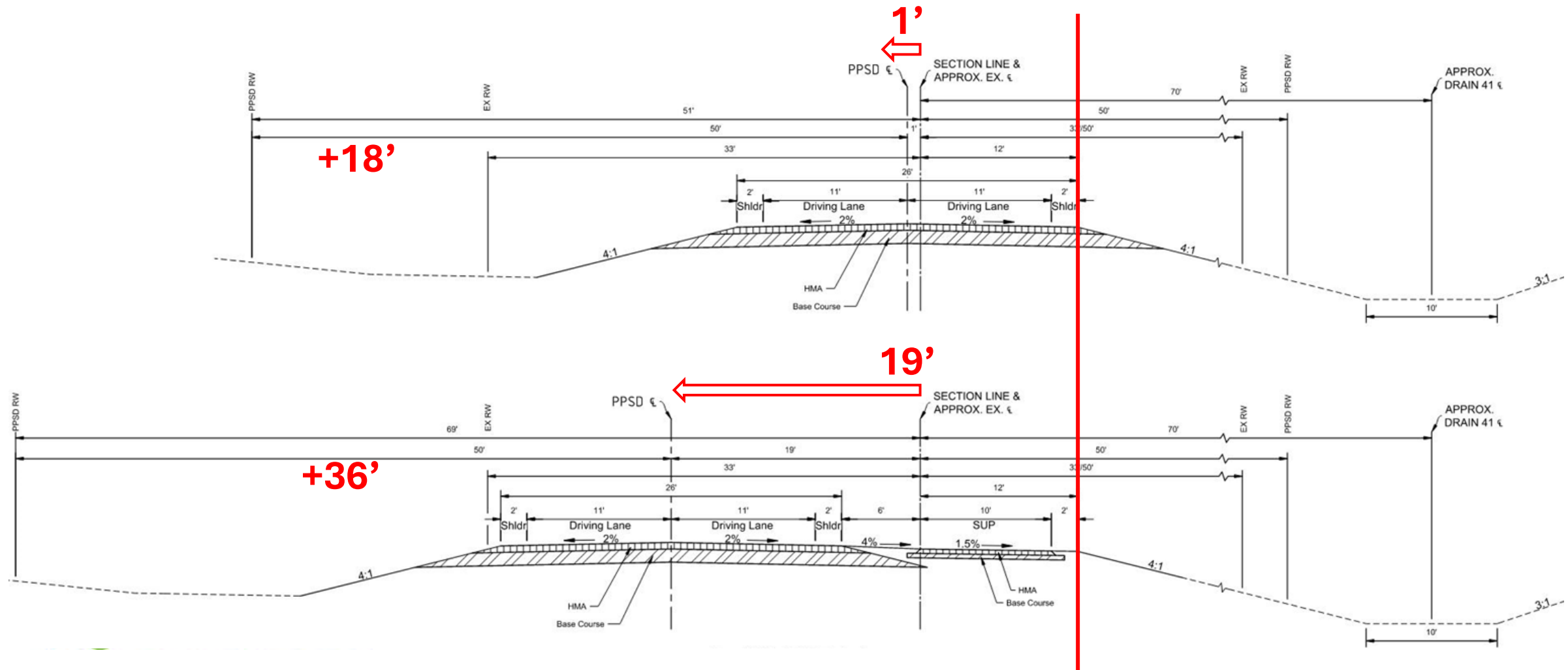
Rural Minimum (Non CSAH)
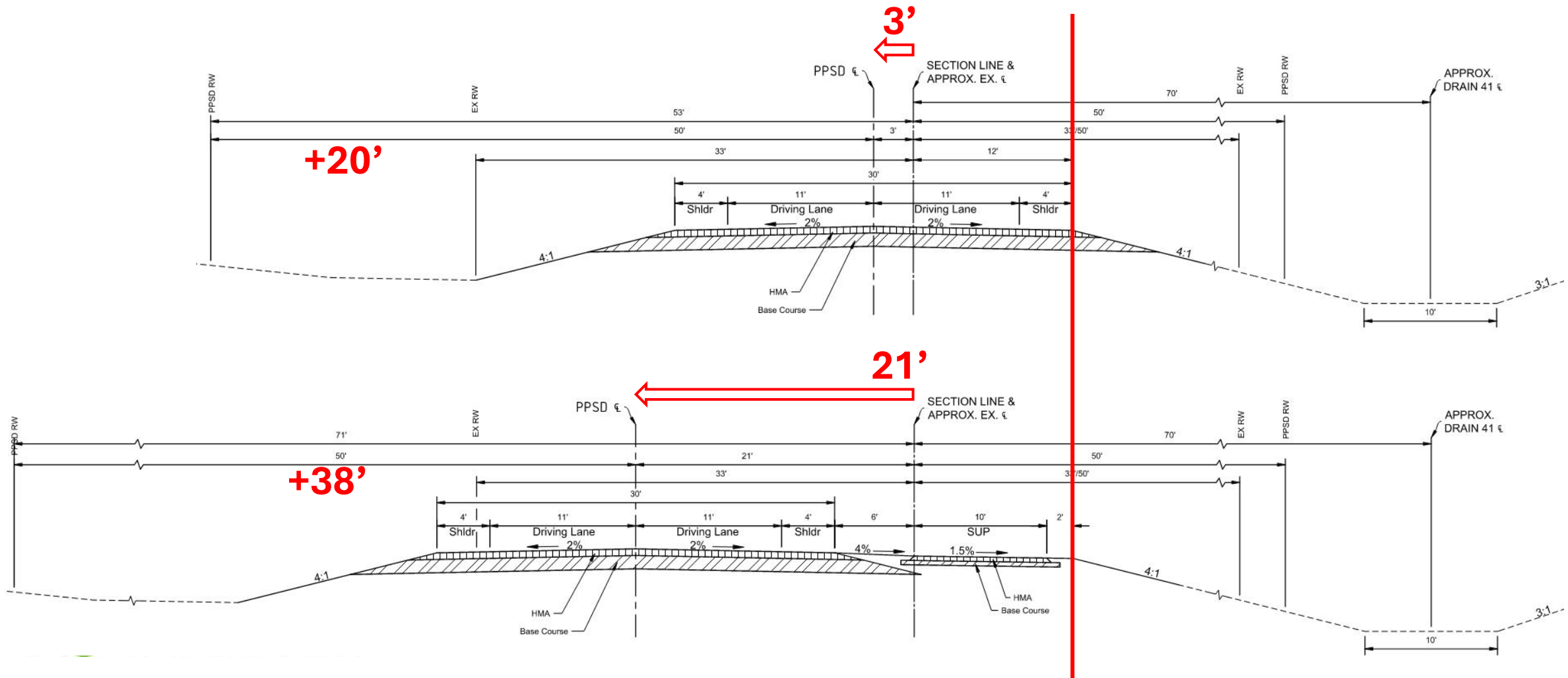
Rural State Aid (CSAH)
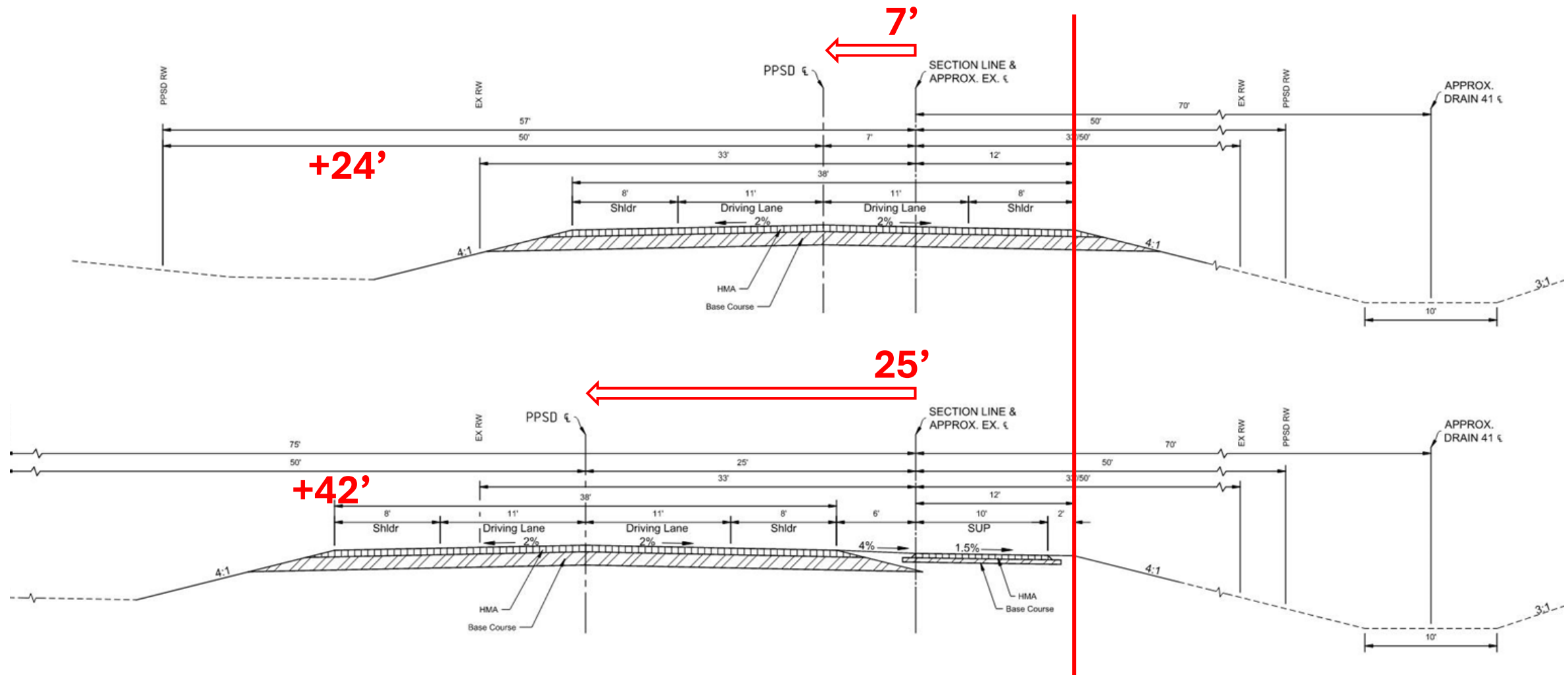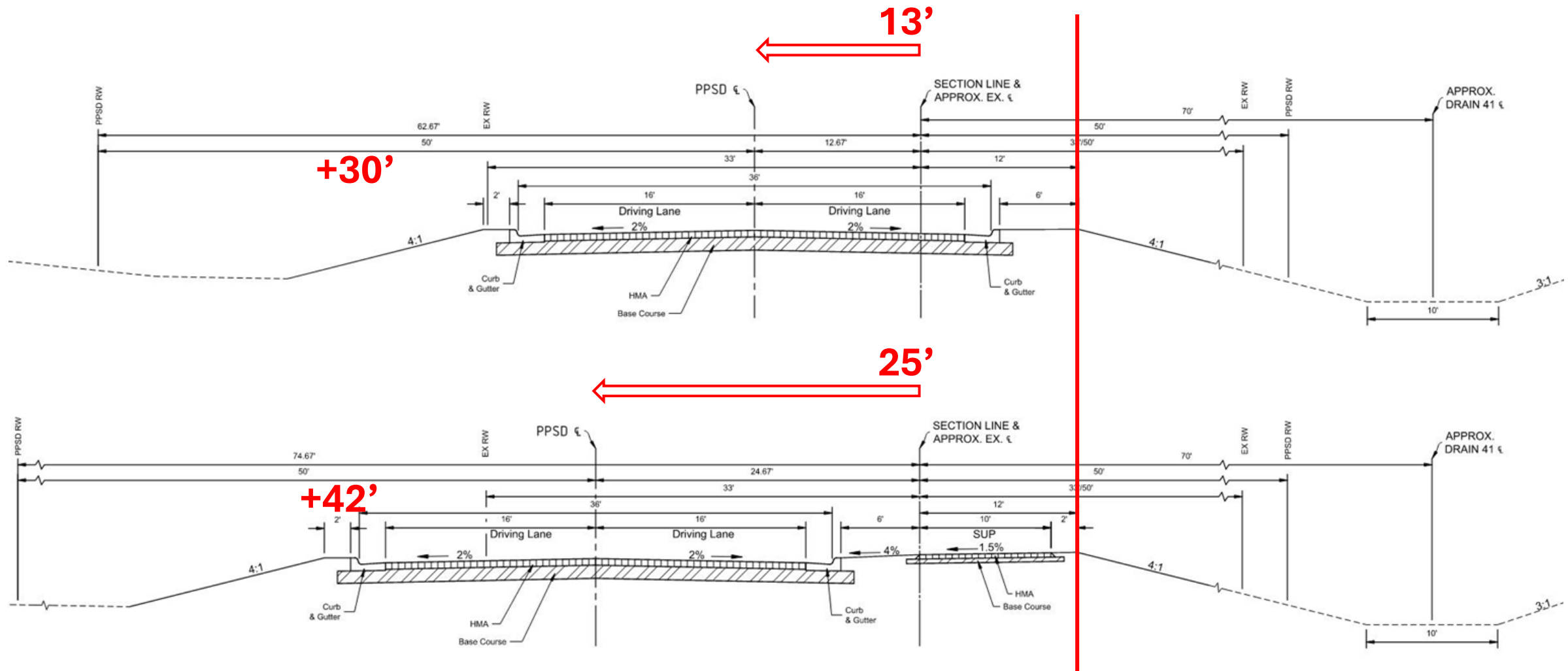
Urban Option 1

Urban Option 2
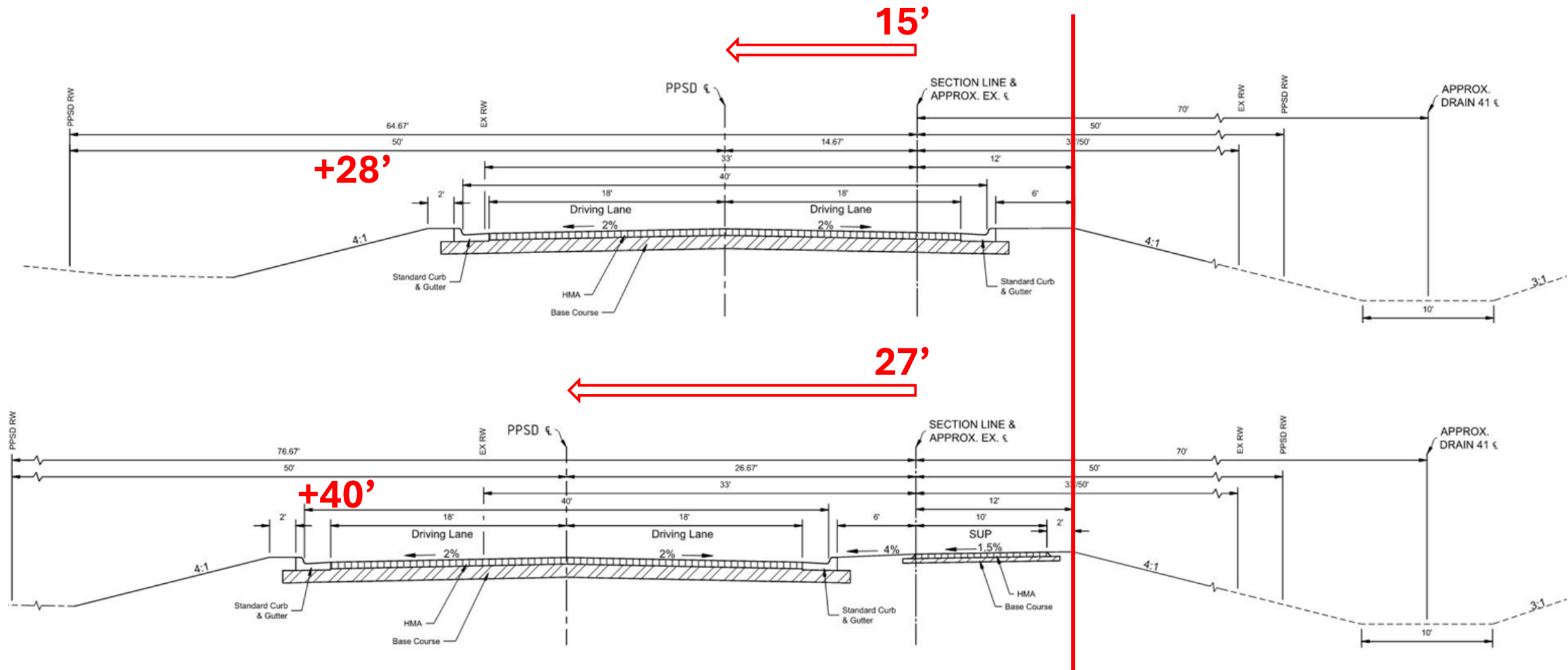
Proposed Right of Way Summary

	Rural Minimum		Rural Minimum		Rural State Aid		Urban Option 1		Urban Option 2	
	(Industry Standards Approved by State Aid Engineer)		(Non CSAH)		(CSAH)					
	11' Driving Lanes w/2' Shoulder		11' Driving Lanes w/4' Shoulder		11' Driving Lanes w/8' Shoulder		36' Face to Face		40' Face to Face	
	w/o SUP	w/ SUP	w/o SUP	w/ SUP	w/o SUP	w/ SUP	w/o SUP	w/ SUP	w/o SUP	w/ SUP
Alignment Shift (FT to North)	1'	19'	3'	21'	7'	25'	13'	25'	15'	27'
Additional ROW (FT to North)	18'	36'	20'	38'	24'	42'	30'	42'	32'	44'
Additional ROW (Acres)	6.55	13.09	7.27	13.82	8.73	15.27	10.91	15.27	11.64	16

15th Ave N Corridor Study

METROCOG
FM REGIONAL TRANSPORTATION PLANNING ORGANIZATION

Proposed Right of Way

Proposed Right of Way

Realignment at Residential Properties

Realignment at Residential Properties

Realignment at Residential Properties

Realignment at Residential Properties

~500' + Transitions

60th Street

15th Ave N

PI: 182+87.84

181+00   182+00   183+00   184+00   185+00   186+00   187+00

33.00'

33.00'

Varies

17.00'

Statutory RW

Statutory RW

Existing RW

Drain 41 RW
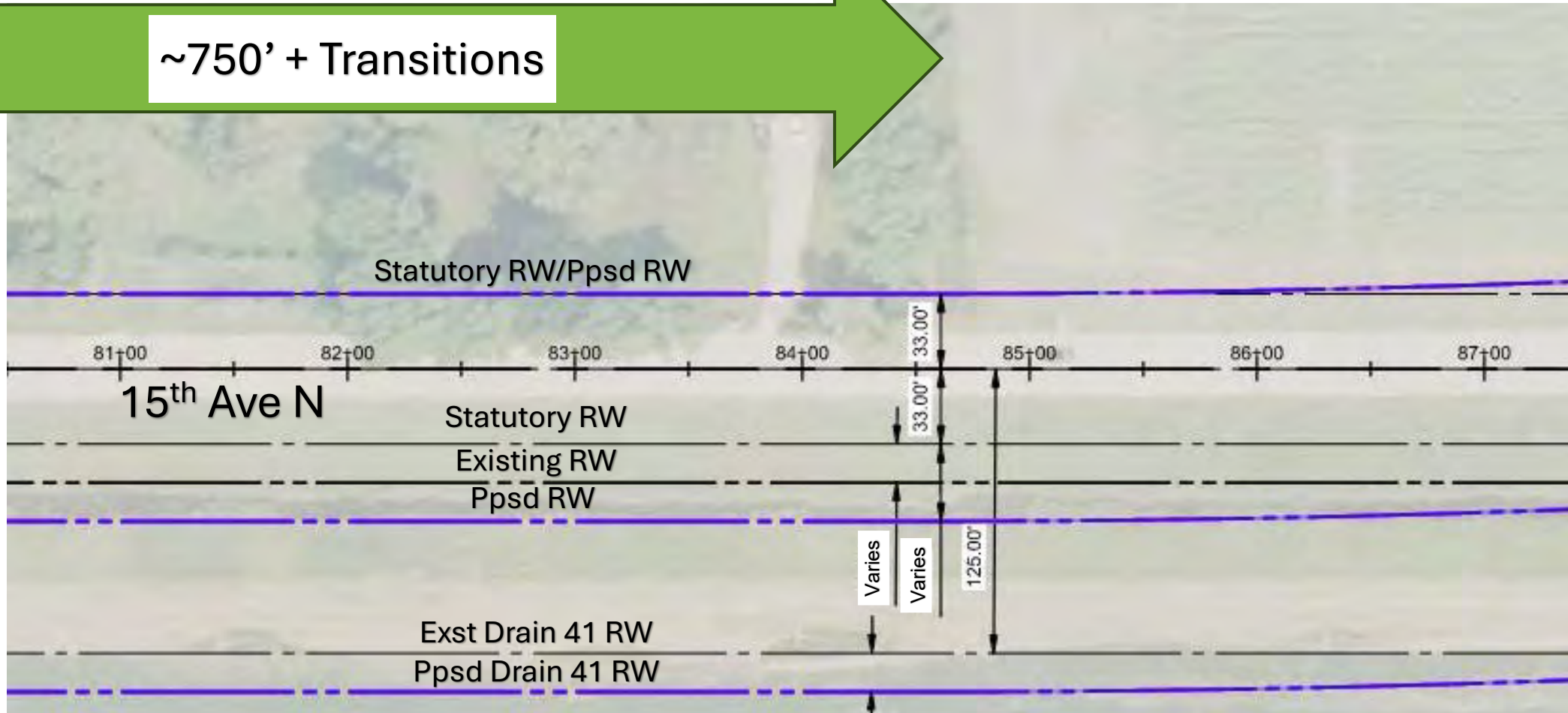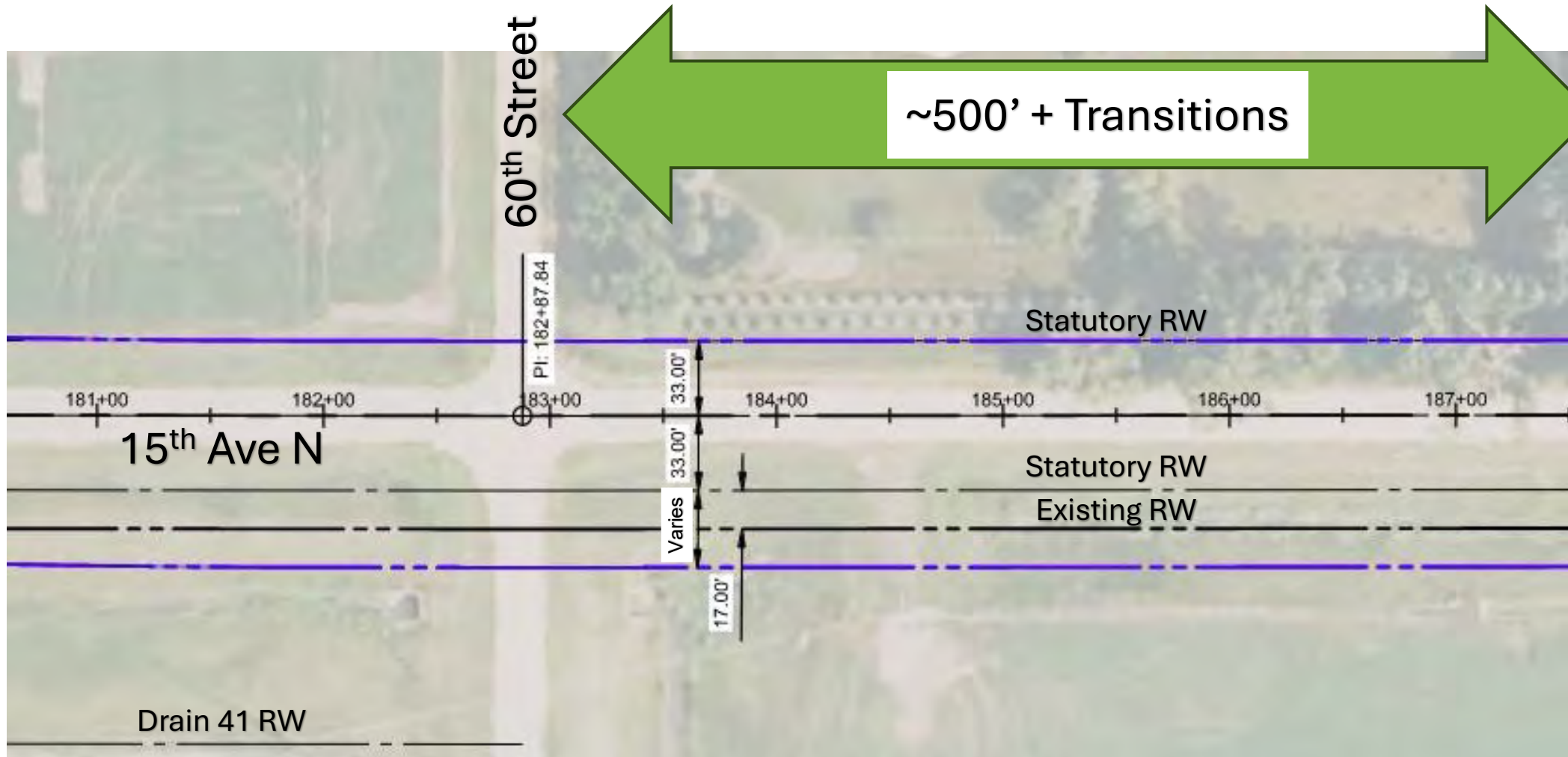
Proposed Right of Way Summary

	Rural Minimum		Rural Minimum		Rural State Aid		Urban Option 1		Urban Option 2	
	(Industry Standards)		(Non CSAH)		(CSAH)					
	11' Driving Lanes w/2' Shoulder		11' Driving Lanes w/4' Shoulder		11' Driving Lanes w/8' Shoulder		36' Face to Face		40' Face to Face	
	w/o SUP	w/ SUP	w/o SUP	w/ SUP	w/o SUP	w/ SUP	w/o SUP	w/ SUP	w/o SUP	w/ SUP
Alignment Shift (FT to South)	17'	17'	17'	17'	17'	17'	17'	17'	17'	17'
Drain 41 Shift (FT to South)	18'	36'	20'	38'	24'	42'	30'	42'	32'	44'
Approximate Drain 41 Realignment Length (40 MPH Curve)	3,818'	4,882'	3,954'	4,978'						

15th Ave N Corridor Study

METROCOG
FM REGIONAL TRANSPORTATION PLANNING ORGANIZATION

Pedestrian Facilities
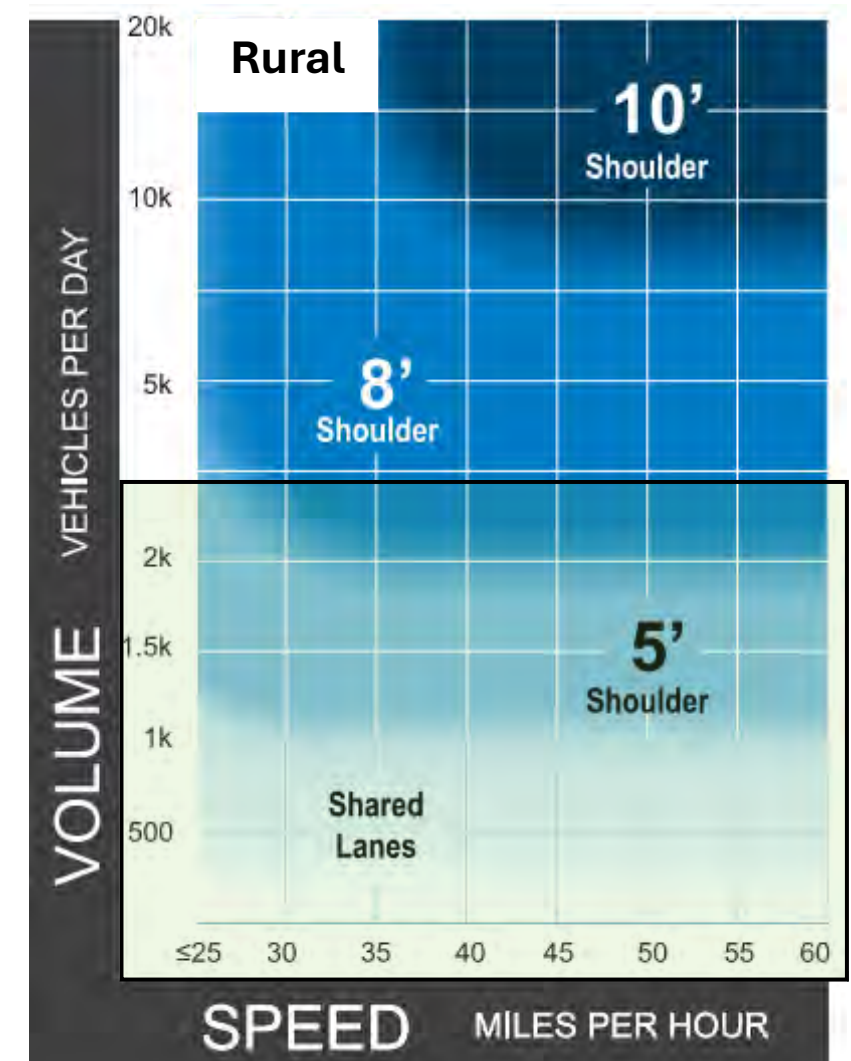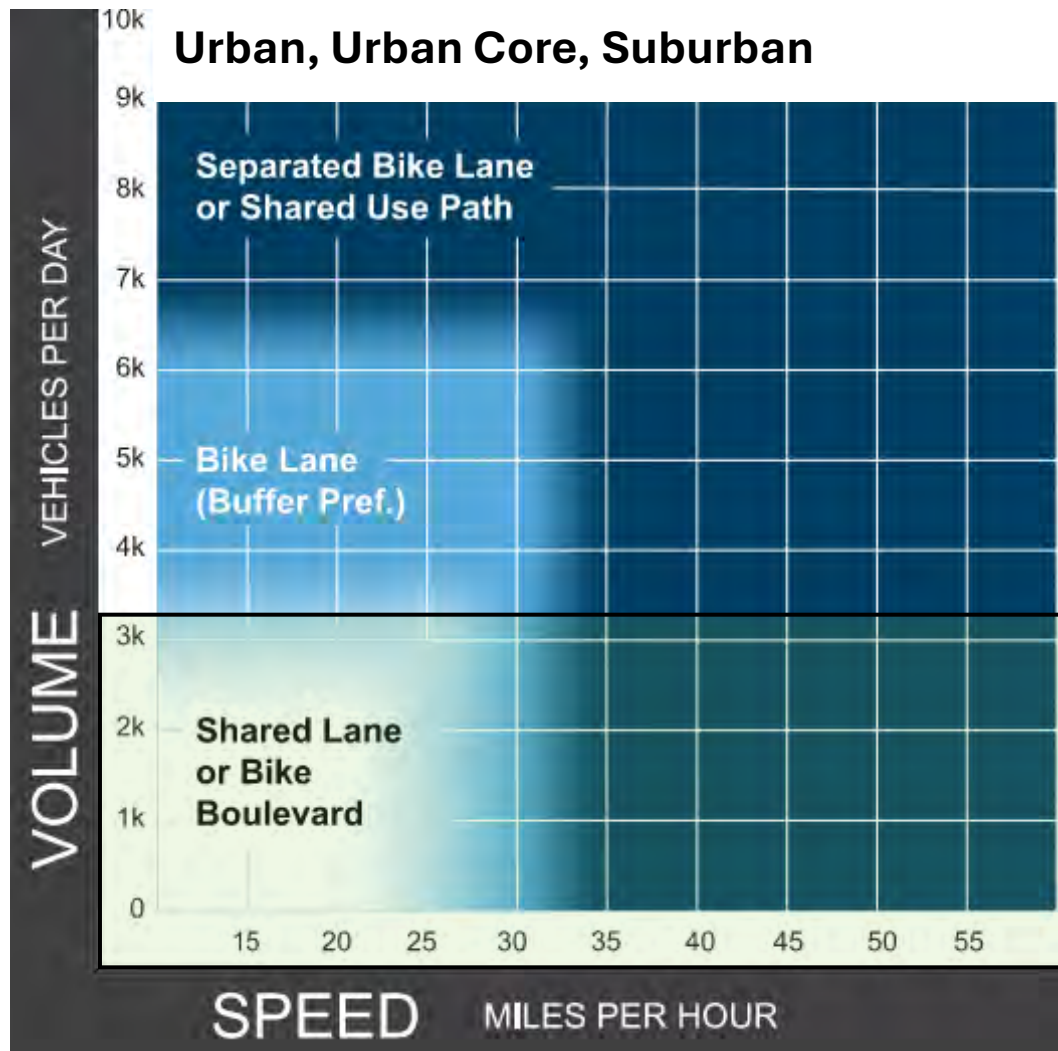
Pedestrian Facilities

For roadways which are being reconstructed or retrofitted where preferred Green Book shoulder widths cannot be provided, designers should provide the recommended shoulder width shown in Figure 10. Where those recommended widths cannot be provided, the following minimum paved shoulder widths can provide a minimum level of bicycle accommodation:

- A shoulder width of at least 3 feet on open-section roadways with no vertical obstructions immediately adjacent to the roadway and no rumble strips.

- A shoulder width of at least 5 feet is recommended from the face of a guardrail, curb, or other roadside barrier to provide additional operating width, as bicyclists generally shy away from a vertical face.

Increasing the width of shoulders is preferable where higher bicycle usage is expected and if motor vehicle speeds exceed 45 mph; if use by heavy trucks, buses, or recreational vehicles exceeds 5% of ADT; or if obstructions exist along the roadside.
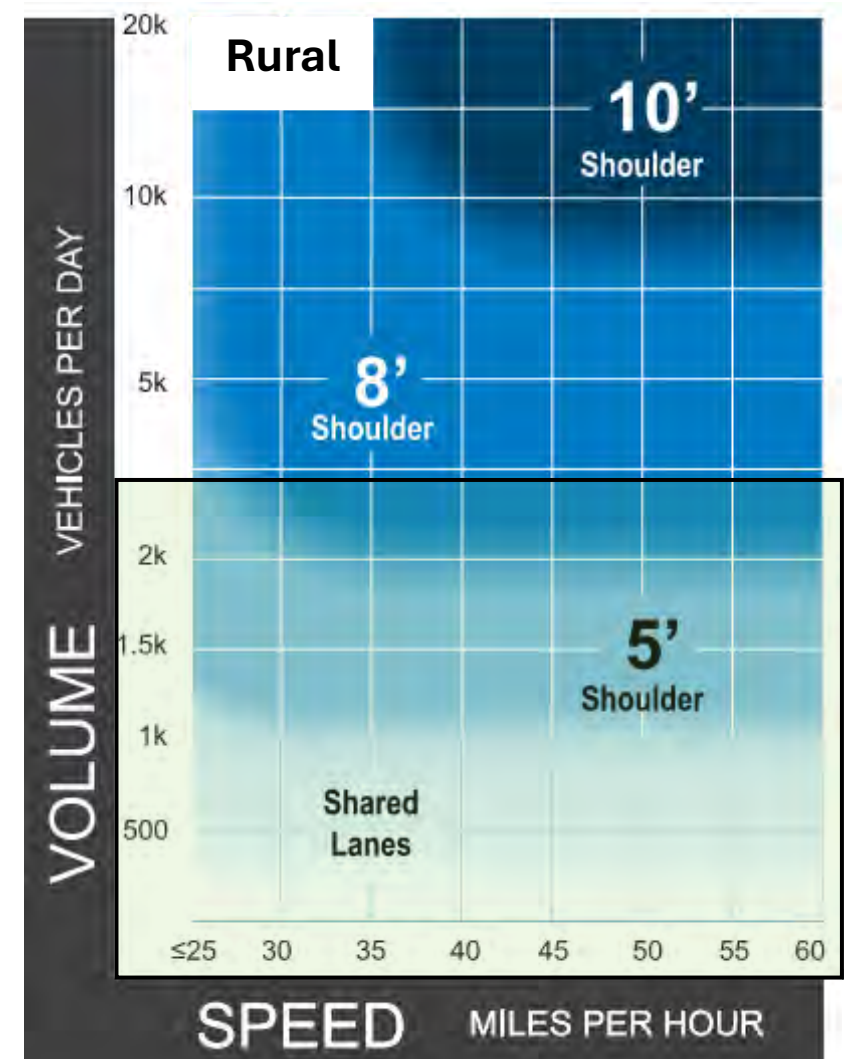
Alternatives Questions

Should alternatives include options for pedestrian facilities?

If including pedestrian facility options, what are the extents?
(40th to 50th, 40th to 60th, or 40th to 70th/entire corridor?)

How much right of way should be preserved on the corridor?

Should the right of way be preserved for future improvements?
(i.e. rural alternatives, but with the ROW for urban alternatives)

Should the options include realigning to avoid property impacts?

Rural Minimum (Industry Standards)

On Alignment
- w/o Shared Use Path
- w/ Shared Use Path

Realignment
- w/o Shared Use Path
- w/ Shared Use Path

Rural Minimum (Non CSAH)

On Alignment
- w/o Shared Use Path
- w/ Shared Use Path

Realignment
- w/o Shared Use Path
- w/ Shared Use Path

Scoring Criteria

Pedestrian Facilities

Right of Way

Drain 41 Impacts

Residential Property Impacts

Utility Impacts

Environmental and Cultural Impacts

Project Costs

Pedestrian Facilities

No Pedestrian Facilities	On Street Facilities	Separated Facilities
Little/No Benefit	Some Benefit	Greatest Benefit

Does the alternative provide safe, comfortable, and accessible bicycle and pedestrian facilities?

Right of Way

Most Right of Way		Least Right of Way
Little/No Benefit	Some Benefit	Greatest Benefit

Does the alternative require temporary or permanent right of way?

Drain 41 Impacts		
Most Drain 41 Impacts	Some Drain 41 Impacts	No Drain 41 Impacts
Little/No Benefit	Some Benefit	Greatest Benefit

Does the alternative require impact Drain 41?

Utility Impacts

Most Utility Impacts		Least Utility Impacts
Little/No Benefit	Some Benefit	Greatest Benefit

Does the alternative impact any existing private utilities?

Environmental & Cultural Impacts

Most Environmental & Cultural Impacts		Least Environmental & Cultural Impacts
Little/No Benefit	Some Benefit	Greatest Benefit

Does the alternative impact any existing environmental resources?

Project Costs

Highest Project Costs		**Lowest Project Costs**
Little/No Benefit	**Some Benefit**	**Greatest Benefit**

What is the approximate project construction cost for each alternative?

Public Involvement

- Public Input Meeting
  - Originally Proposed for mid-October
- Does SRC want Ownership/Maintenance discussed?
- Topics to Discuss
  - Existing Conditions
  - Phase I Feedback
  - Alternatives
  - Scoring
  - Survey

15ᵗʰ Avenue N Corridor Study – SRC Meeting #4
Meeting Minutes

Date: 12/18/2024   **Time:**   11:00 AM
Facilitator: Scott Middaugh

Attendees: Michael Maddox – Metro COG; Peyton Mastera, Don Lorsung – City of Dilworth; Mary Safgren – MnDOT; Carol Kurtyka – Moorhead Township; Jerry Gee – Oakport Township; Jeff Winter – Moland Township; Todd Hummel, Scott Middaugh, Wade Kline - KLJ

Alternatives Analysis

1. Scott M stated that the Alternatives Analysis was submitted to the SRC for review and comment. Only one comment has been received so far.
2. Scott M recapped the Alternatives Analysis report:
   a. Alternatives considered but dismissed
      i. Urban sections using City of Dilworth standards – dismissed due to cost, and does not align with near term usage and ownership of the corridor
      ii. Clay County CSAH – dismissed because Clay County does not have any CSAH miles available for this corridor and does not want to remove miles from any other CSAH route to apply to this corridor
   b. Alternatives Presented at Public Input Meeting
      i. Rural Minimum Industry Standards (Typical Section 2)
         1. 11' driving lanes, 2' shoulders (the same section recently constructed west of the corridor)
         2. $7-8 million in construction costs
         3. 6.61 acres of ROW
      ii. Rural Minimum Industry Standards with Path (Typical Section 3)
         1. 11' driving lanes, 2' shoulders, 10' shared use path
         2. $8-9 million in construction costs
         3. 10.18 acres of ROW
      iii. Clay County Minimum Standards (Typical Section 4)
         1. 11' driving lanes, 4' shoulders
         2. $9-10 million in construction costs
         3. 8.93 acres of ROW
      iv. Clay County Minimum Standards Path (Typical Section 5)
         1. 11' driving lanes, 4' shoulders, 10' shared use path
         2. $10-11 million in construction costs
         3. 12.65 acres of ROW
      v. Clay County Minimum Standards with Southern Alignment Shift (Typical Section 6)
         1. 11' driving lanes, 4' shoulders, realigned to avoid residential impacts north of 15ᵗʰ Ave
         2. $10.5-11.5 million in construction costs
         3. 10.73 acres of ROW
      vi. Clay County Minimum Standards with Southern Alignment Shift with Path (Typical Section 7)

1. 11' driving lanes, 4' shoulders, realigned to avoid residential impacts north of 15th Ave, 10' shared use path
                2. $11.5-12.5 million in construction costs
                3. 13.25 acres of ROW
        vii. Don L asked why ROW is shown as a need for the Rural Minimum Industry Standard. The project that was constructed in 2019 just to the west did not require any ROW.
                1. Scott M stated that the existing project didn't acquire ROW but utilized the existing 17' sanitary sewer easement for grading. KLJ showed ROW as a need to make sure that was clear in the report.
3. Scott M reviewed the scoring matrix and the categories that were used to score the different alternatives:
    a. Right of Way Acquisition
    b. Roadway Reliability
    c. Residential Property Impacts
    d. Meets Purpose & Need
    e. Pedestrian Mobility
    f. Construction Costs
4. Scott M stated that the Public Input meeting for the project was held on November 21, 2024 from 5-7 at the Dilworth Depot Facility
    a. Legal ads, press release, direct post card mailings, and social media posts were used to advertise the meeting
    b. 16 people attended in person, 60 online surveys completed
5. Scott M reviewed the survey results
    a. Question 1: Please rank the following metrics in order from most important to least important:
        i. Roadway Reliability
        ii. Meets Purpose & Need
        iii. Cost
        iv. Residential Property Impacts
        v. Pedestrian Mobility
        vi. Right of Way Acquisition
    b. Question 2 (online results): What is your preferred alternative:
        i. Clay County Minimum with Path (Typical Section 5)
        ii. Rural Minimum Industry Standard with Path (Typical Section 3)
        iii. Clay County Minimum (Typical Section 4)
        iv. Clay County Minimum with Southern Alignment Shift and Path (Typical Section 7)
        v. Rural Minimum Industry Standard (Typical Section 2)
        vi. No Build (Typical Section 1)
        vii. Clay County Minimum with Southern Alignment Shift (Typical Section 6)
    c. Question 2 (in person results): What is your preferred alternative:
        i. Clay County Minimum (Typical Section 4)
        ii. Clay County Minimum with Southern Alignment Shift and Path (Typical Section 7)
        iii. Clay County Minimum with Path (Typical Section 5)

iv. Clay County Minimum with Southern Alignment Shift (Typical Section 6)

v. No Build (Typical Section 1)

d. Question 3: Where do you live:

i. Dilworth, MN

ii. Moorhead, MN

iii. None of the above

iv. Do not wish to say

e. Jeff W asked who initiated this project.

i. Scott M stated that during the US 10 Corridor Study it was identified that that additional east/west corridors were needed through the metro area. Meto COG lead that corridor study and is the lead agency for this corridor study

ii. Jeff W asked what is Metro COG and who funds that

1. Michael M stated that Metro COG is the metropolitan planning organization for Fargo-Moorhead area. They represent Fargo, Moorhead, West Fargo, Dilworth, Horace, Clay County, and Cass County. They are funded by NDDOT and MnDOT.

iii. Peyton M stated that from Dilworth City limits encompass all parts of the roadway that Moorhead Township maintains.

iv. Peyton M stated that Dilworth is working with Metro COG to obligate approximately $1M of STBG funding to 15th Ave between CSAH 9 and 50th St in 2029.

6. Wade K discussed the draft Implementation Plan

a. Wade recommended that a memorandum of understanding that will outline a forum for corridor preservation, regular communication with stakeholders and public, and describe cost sharing be established. Wade echoed that there is funding available already for 2029 construction.

b. Wade described that the ming and phasing for this project will likely happen based on funding, but would generally be constructed from east to west, targe ng that the en re roadway be paved by 2030.

c. Wade discussed ownership and that the County has been a great steward for this corridor. Wade further stated that the County should likely be the short term owner that manages this corridor with cost sharing identified through an MOU. Local funding would also be identified through an MOU. Lastly, there could be LRIP funding that could be obtained in the next solicitation in the Fall of 2025

d. Wade K stated that func onal classifica on would be key in obtaining federal funding. Some of those federal funding sources could be the Surface Transporta on Block Grant Program STPBG through Metro COG (already secured) and the Carbon Reduc on Program (linked to the TH 10 relief/ construc on).

e. Jeff W asked if the City of Moorhead has been involved in the study and if they have any concerns with the increased traffic

i. Sco M stated that KLJ coordinated with the City of Moorhead early in the process. Moorhead realizes that traffic on 15th will con nue to increase over me. They don' have any concerns about roadway capacity within the City of Moorhead and they did not indicate any new traffic control improvements at the intersec on of 34th St/15th Ave

f. Michael M stated that the County has expressed concerns about not having long term ownership of this roadway and attempting to identify any metrics as to when the ownership would then transition to the City of Dilworth. Scott stated that it has been discussed, but that we have not yet identified any metrics that would be adequate with the numerous unknowns. Wade stated that it's difficult to transition the ownership back to the City through metrics because the City would need to have both sides of the corridor within the City limits.

g. Wade K asked who the recipient of the federal funding would be if the County would not be the owner.
    i. Michael M said the County or the City would need to be, however, the City may take the Federal funding for the first mile, and potentially the remaining sections of the corridor would need to go through the County.

h. Michale M stated that when US 10 though Dilworth in reconstructed by MnDOT traffic on 15th Ave will increase. It may be worth looking at the option to pave 60th St from US 10 to 15th Ave and 15th Ave from 60th St to CSAH 9. This could possibly eliminate the need to pave 15th Ave from 60th St to CSAH 11.

Study Review Committee #4

December 18, 2024

Agenda

Alternatives Analysis

Public Input Results

Implementation Plan

Next Steps

Alternatives Analysis

- Alternatives Consider but Dismissed

  - Rural CSAH Standards
    - Reason: Costly standards, not likely to be a CSAH

  - Dilworth Urban Section
    - Reason: Costly requirements and projected ownership in the short term

Alternatives Analysis

- $7M to $8M
- 6.61 Acres of ROW
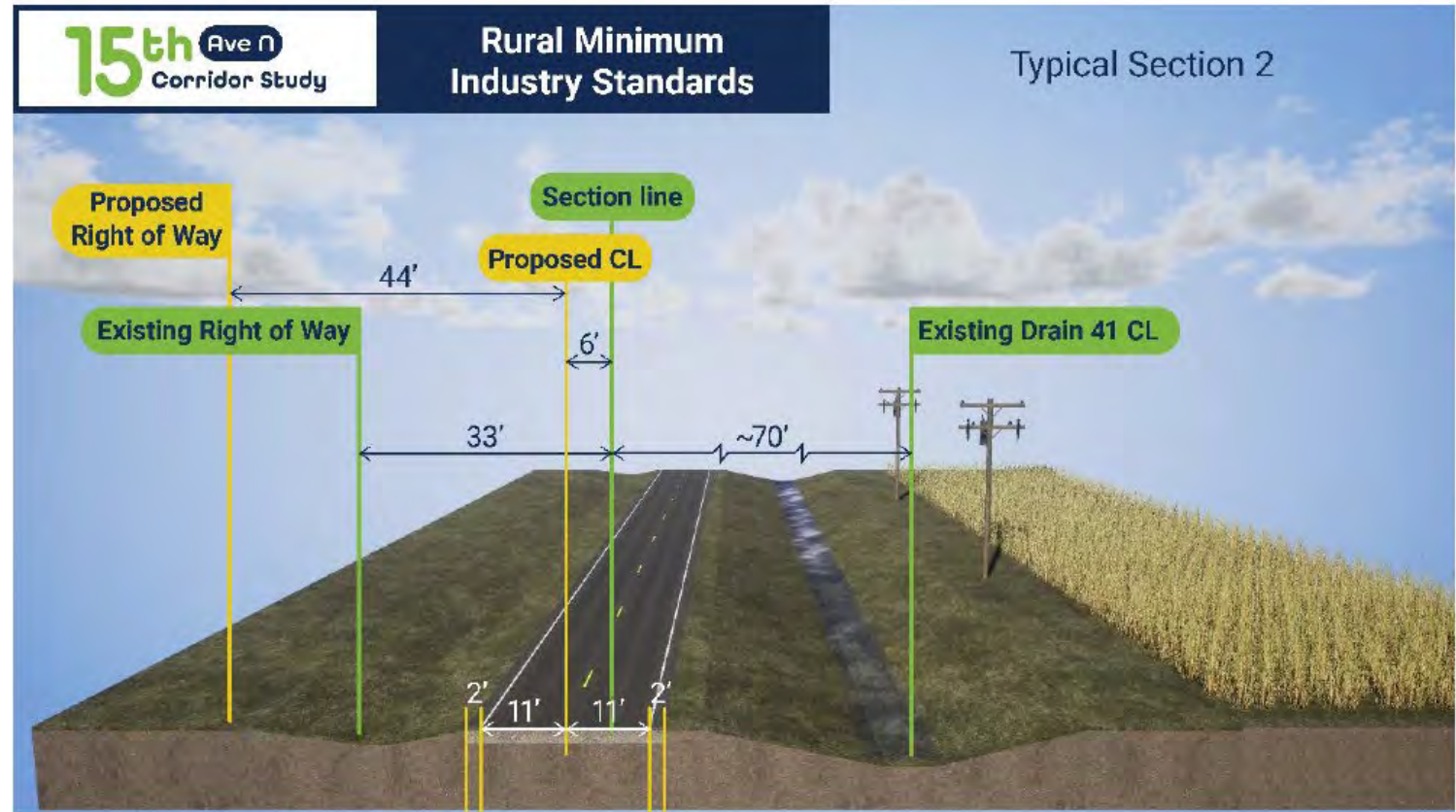
Alternatives Analysis

- $8M to $9M
- 10.18 Acres of ROW
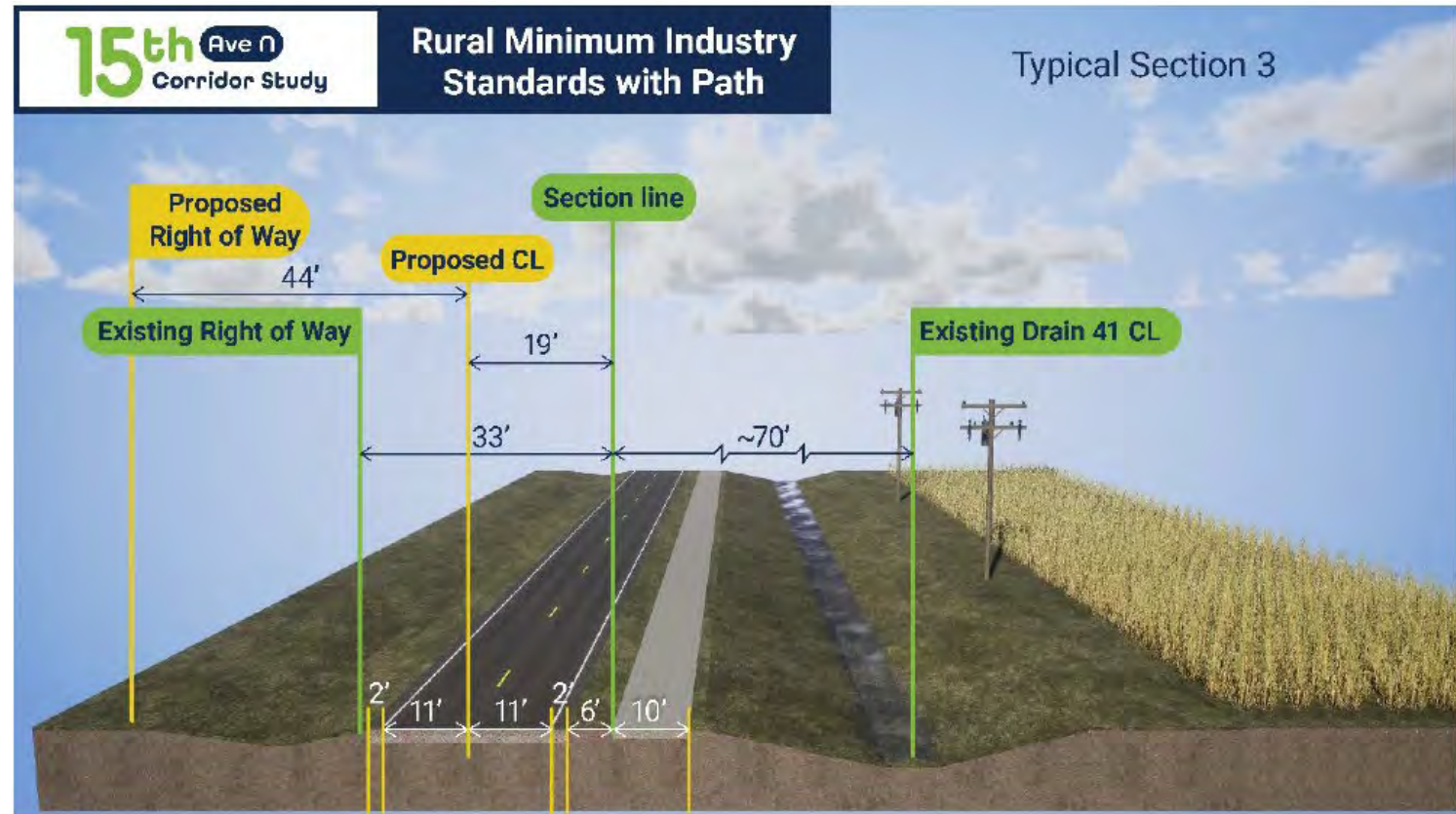
Alternatives Analysis

- $9M to $10M

- 8.93 Acres of ROW
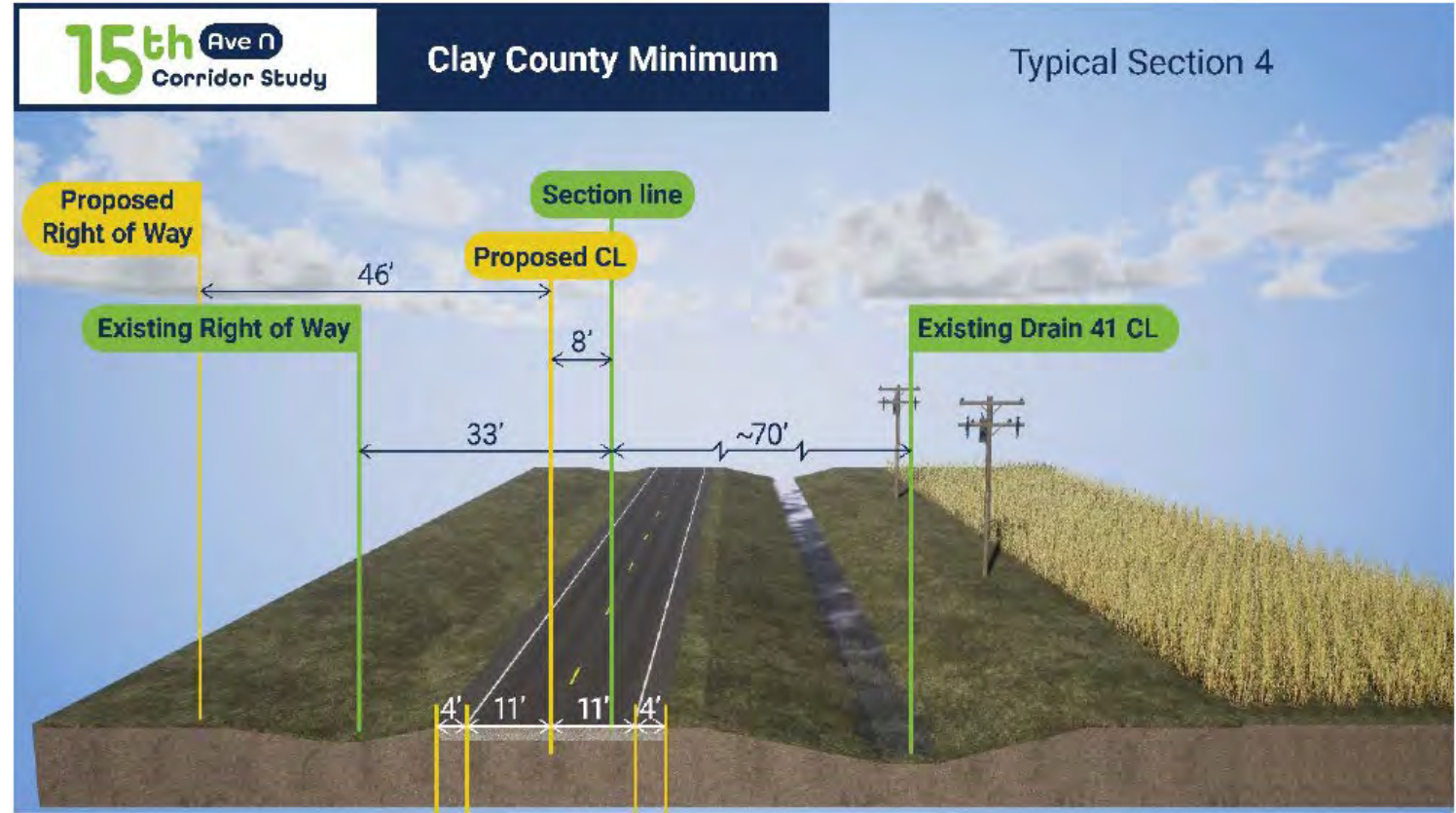
Alternatives Analysis

- $10M to $11M
- 12.65 Acres of ROW
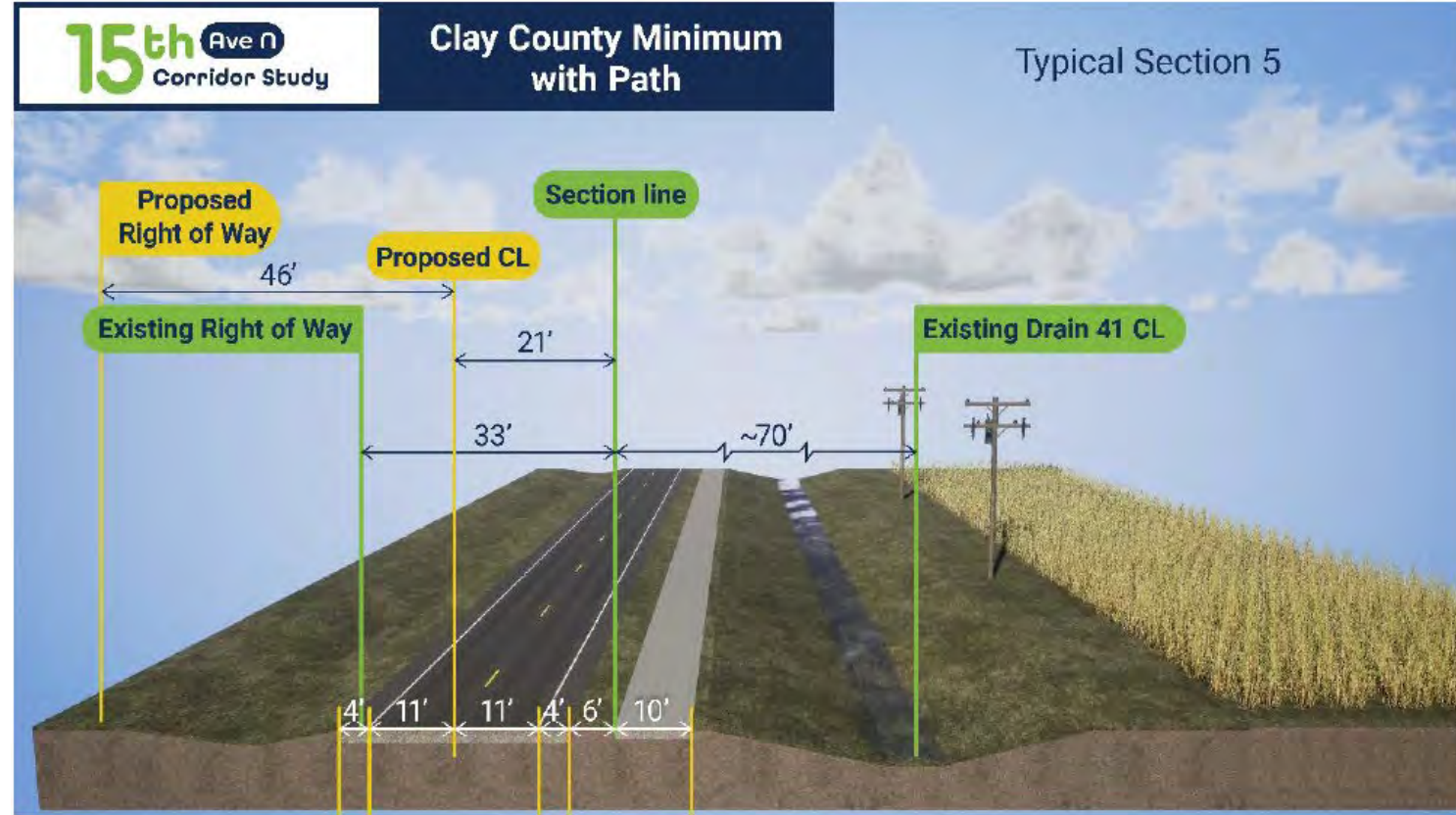
Alternatives Analysis

- $10.5M to $11.5M
- 10.73 Acres of ROW
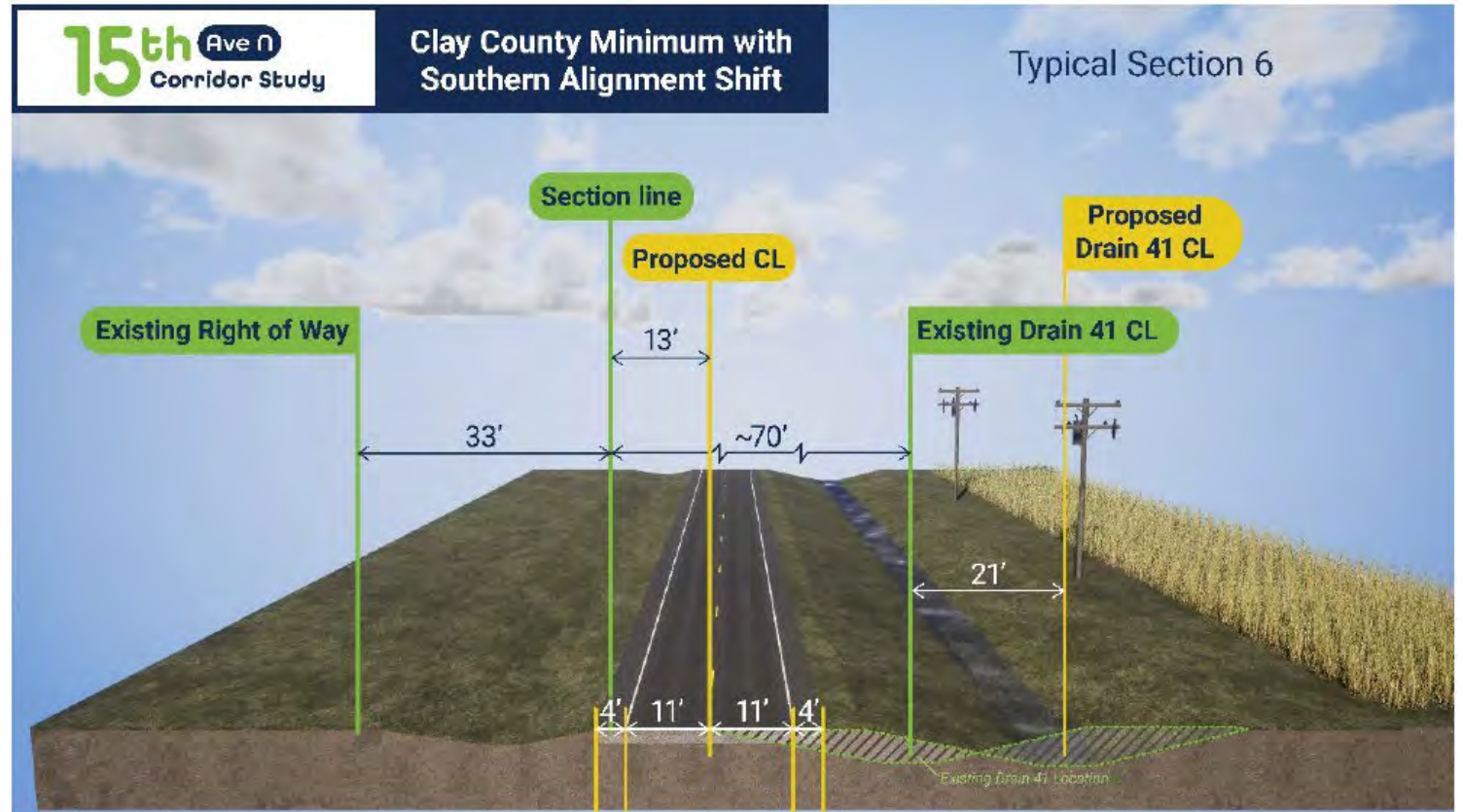
Alternatives Analysis

- $11.5M to $12.5M
- 13.25 Acres of ROW
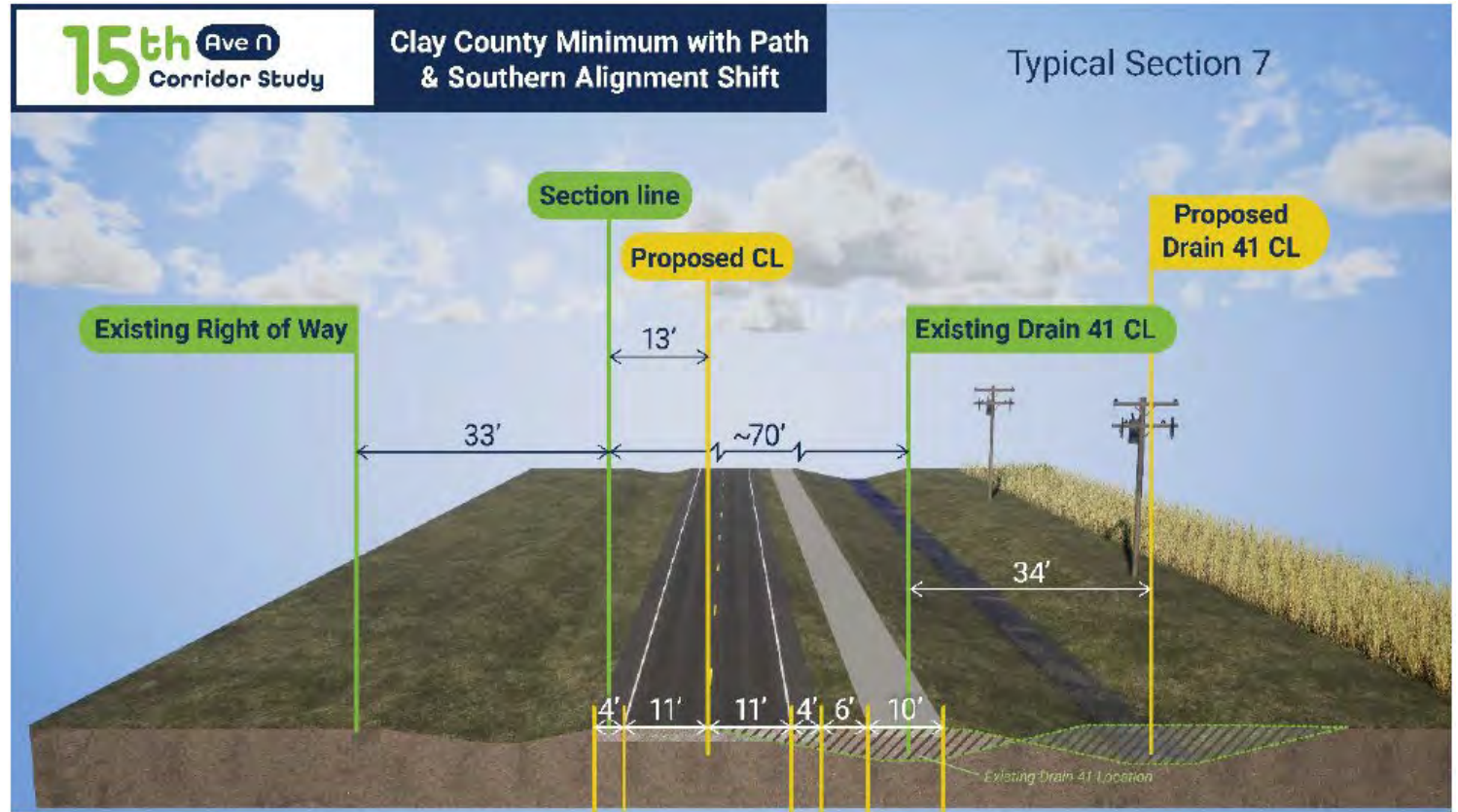
Alternative Scoring

Right of Way Acquisition

Alternative	Most Right of Way / Little to No Benefit ⟷ Least Right of Way / Greatest Benefit
Alternative 1: No Build	● (far right — Greatest Benefit)
Alternative 2: Rural Minimum Industry Standards	● (right of center)
Alternative 3: Rural Minimum Industry Standards with Path	● (left of center)
Alternative 4: Clay County Minimum	● (center-left)
Alternative 5: Clay County Minimum with Path	● (near far left)
Alternative 6: Clay County Minimum with Southern Alignment Shift	● (left of center)
Alternative 7: Clay County Minimum with Path & Southern Alignment Shift	● (far left — Little to No Benefit)

Roadway Reliability

Alternative	Least Roadway Reliability / Little to No Benefit ⟷ Most Roadway Reliability / Greatest Benefit
Alternative 1: No Build	● (far left — Little to No Benefit)
Alternative 2: Rural Minimum Industry Standards	● (far right — Greatest Benefit)
Alternative 3: Rural Minimum Industry Standards with Path	● (far right — Greatest Benefit)
Alternative 4: Clay County Minimum	● (far right — Greatest Benefit)
Alternative 5: Clay County Minimum with Path	● (far right — Greatest Benefit)
Alternative 6: Clay County Minimum with Southern Alignment Shift	● (far right — Greatest Benefit)
Alternative 7: Clay County Minimum with Path & Southern Alignment Shift	● (far right — Greatest Benefit)

Residential Property Impacts

Alternative	Most Property Impacts / Little to No Benefit ⟷ Least Property Impacts / Greatest Benefit
Alternative 1: No Build	● (far right — Greatest Benefit)
Alternative 2: Rural Minimum Industry Standards	● (right of center)
Alternative 3: Rural Minimum Industry Standards with Path	● (left of center)
Alternative 4: Clay County Minimum	● (center-left)
Alternative 5: Clay County Minimum with Path	● (far left — Little to No Benefit)
Alternative 6: Clay County Minimum with Southern Alignment Shift	● (far right — Greatest Benefit)
Alternative 7: Clay County Minimum with Path & Southern Alignment Shift	● (far right — Greatest Benefit)

Purpose & Need (P&N)

Alternative	Does Not Meet P&N / Little to No Benefit ⟷ Meets P&N / Greatest Benefit
Alternative 1: No Build	● (far left — Little to No Benefit)
Alternative 2: Rural Minimum Industry Standards	● (far right — Greatest Benefit)
Alternative 3: Rural Minimum Industry Standards with Path	● (far right — Greatest Benefit)
Alternative 4: Clay County Minimum	● (far right — Greatest Benefit)
Alternative 5: Clay County Minimum with Path	● (far right — Greatest Benefit)
Alternative 6: Clay County Minimum with Southern Alignment Shift	● (far right — Greatest Benefit)
Alternative 7: Clay County Minimum with Path & Southern Alignment Shift	● (far right — Greatest Benefit)

Pedestrian Mobility

Alternative	Least Pedestrian Mobility / Little to No Benefit ⟷ Most Pedestrian Mobility / Greatest Benefit
Alternative 1: No Build	● (far left — Little to No Benefit)
Alternative 2: Rural Minimum Industry Standards	● (near far left)
Alternative 3: Rural Minimum Industry Standards with Path	● (far right — Greatest Benefit)
Alternative 4: Clay County Minimum	● (left of center)
Alternative 5: Clay County Minimum with Path	● (far right — Greatest Benefit)
Alternative 6: Clay County Minimum with Southern Alignment Shift	● (left of center)
Alternative 7: Clay County Minimum with Path & Southern Alignment Shift	● (far right — Greatest Benefit)

Construction Costs

Alternative	Highest Costs / Little to No Benefit ⟷ Lowest Costs / Greatest Benefit
Alternative 1: No Build	● (far right — Greatest Benefit)
Alternative 2: Rural Minimum Industry Standards	● (right of center)
Alternative 3: Rural Minimum Industry Standards with Path	● (center-right)
Alternative 4: Clay County Minimum	● (far left — Little to No Benefit)
Alternative 5: Clay County Minimum with Path	● (left of center)
Alternative 6: Clay County Minimum with Southern Alignment Shift	● (near far left)
Alternative 7: Clay County Minimum with Path & Southern Alignment Shift	● (far left — Little to No Benefit)

15th Ave N Corridor Study

METROCOG — FM REGIONAL TRANSPORTATION PLANNING ORGANIZATION

Public Input Meeting

- 16 in person attendees
- 60 surveys completed
- Mailed post cards
- Social media posts
- Fargo Forum/FM Extra legal ads
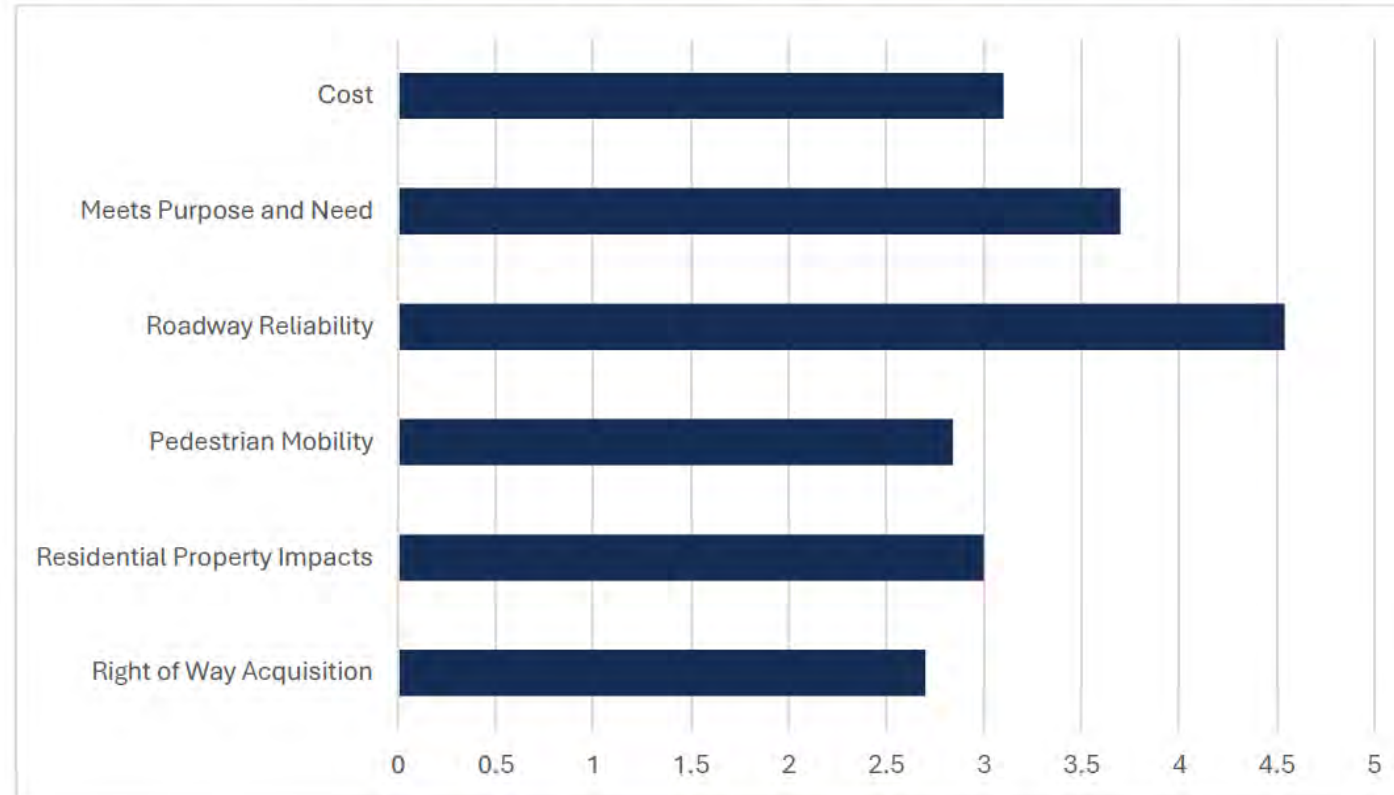- Press release to media
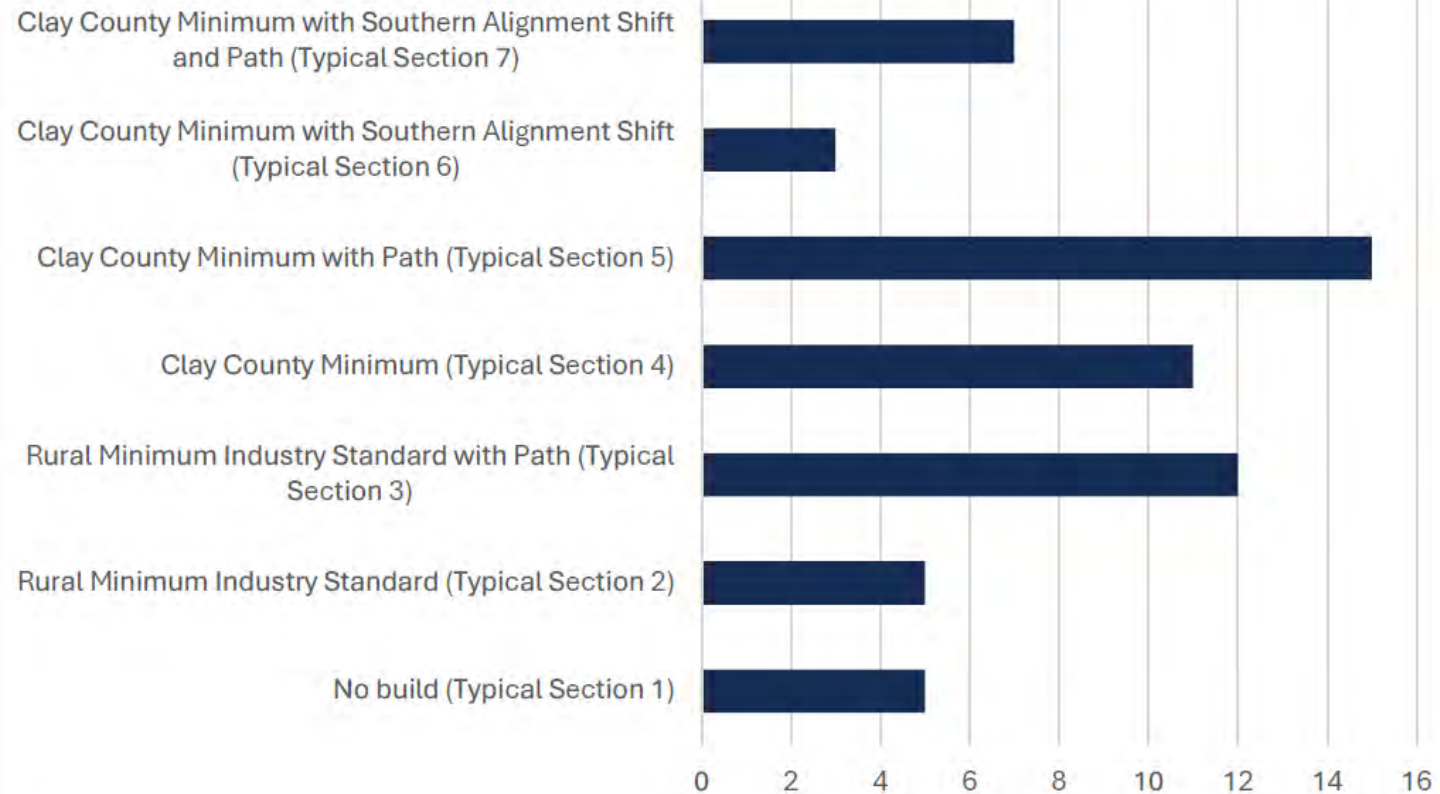
Public Input Meeting

Question 1: Please rank the following metrics in order from most important to least important.
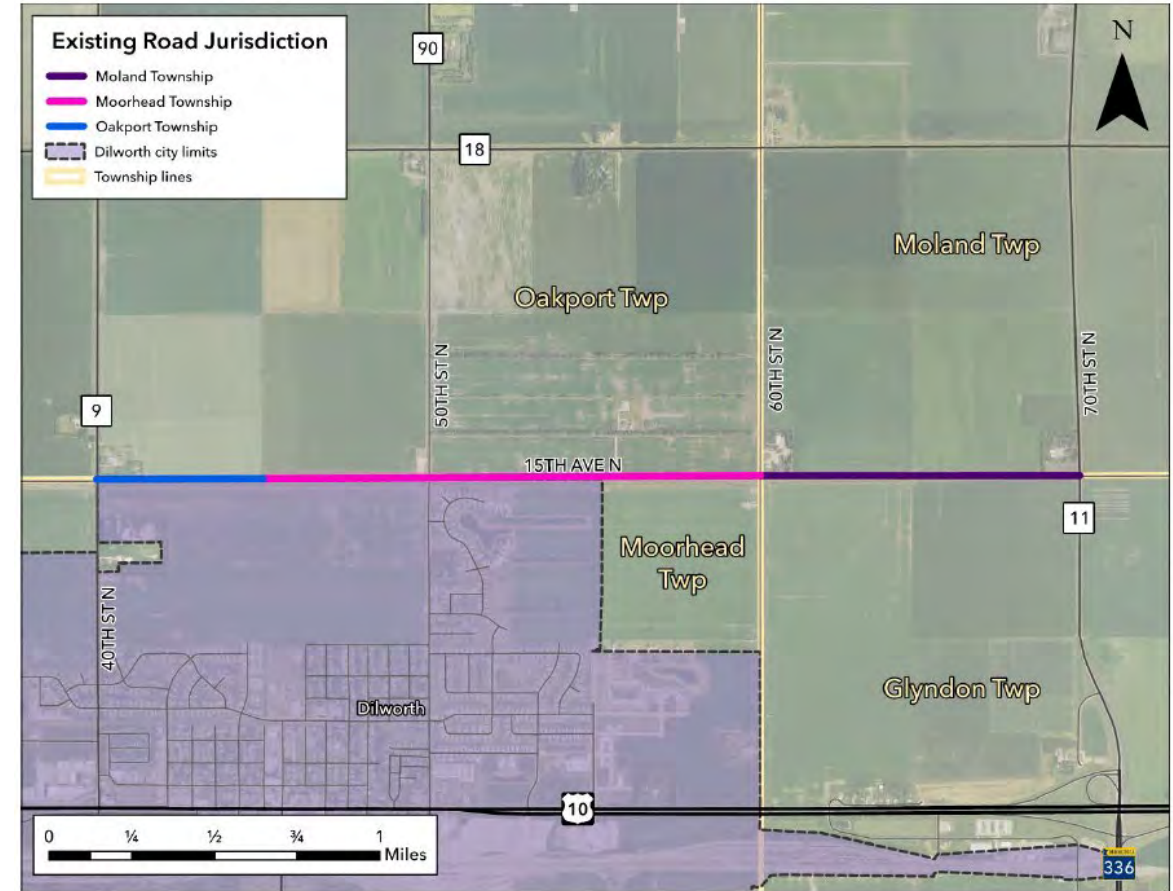
Public Input Meeting

Public Input Meeting

Question 3: Where do you live?

Implementation Plan

- **Memorandum of Understanding**
  - Forum for corridor preservation
  - Regular communication
  - Cost sharing
- **Timing / Phasing**
  - East to west
  - Fully paved by 2030

Implementation Plan

- **Ownership**
  - County
  - Cost sharing via MOU

- **Local Funding**
  - Identify cost shares in an MOU

- **State Funding**
  - Local Road Improvement Program (LRIP)
    - Fall 2025 (Next Solicitation)

Implementation Plan

- **Functional Classification**
  - Key to Federal Funding

- **Federal Funds**
  - Surface Transportation Block Grant Program (STPBG)
    - Through Metro COG
  - Carbon Reduction Program
    - Linking to TH 10 relief/congestion
  - Competitive/Discretionary Programs
    - Not a good fit for this corridor

Next Steps

- KLJ to finalize Corridor Study Report
- Presentations to Dilworth, Clay County, Metro COG