

Construction Congestion Cost (CO³) User Delay Software

MDOT's CO³ internet page:

http://www.michigan.gov/mdot/0,1607,7-151-9625_54944-227053--,00.html

MDOT System Operations Advisories (several related to CO3):

http://michigan.gov/mdot/0,1607,7-151-9625_54944-229054--,00.html

RECOMMENDED WORK ZONE CAPACITIES

NUMBER OF LANES		AVERAGE CAPACITY	
NORMAL	OPEN	VPH	VPHPL
3	1	1,400	1,400
2	1	1,550	1,550
5	2	3,200	1,600
4	2	3,400	1,700
3	2	3,400	1,700
4	3	5,250	1,750

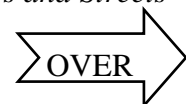
(STANDARD LANE CAPACITY IS ASSUMED 2,000 VPHPL, BUT VARIES WITH SPEED. SEE *HIGHWAY CAPACITY MANUAL 2000*, EXHIBITS 12-1, 12-2, 13-2 AND 13-3.)

ADJUSTMENTS

1. If % of commercial traffic > 10%, then reduce VPH by 10%
2. If an entrance ramp is within the closure zone, reduce freeway lane 1, VPHPL volume by the minimum of either:
 - a. Ramp entering volume in VPHPL; or
 - b. 800 VPHPL
3. Add (or subtract) 10% of the VPH for above (or below) average work activities. Work activities which are in close proximity and/or involve larger equipment and numbers of workers would decrease capacity. Work activities which involve minimal noise and dust and are remote from open travel lanes would increase capacity.
4. Through signalized areas, use 750 VPHPL

Speed when Demand is Low (D~0) (mph)	Speed (when D=C) (mph)		
	Low Volume	Intermediate Volume	Volume Approaching Capacity
30	28	26	25
35	32	30	28
40	36	34	31
45	40	37	34
50	44	41	35
55	48	44	36
60	51	48	37
65	55	51	38
70	58	54	38

Based on Figure II-22, 1990 AASHTO "A Policy on Geometric Design of Highways and Streets"



PennDOT AADT Distribution (hourly percentages)

Hour (24 hour clock)	Traffic Pattern Group					
	Interstate		Principal Arterial		Minor Arterial	
	Urban	Rural	Urban	Rural	Urban	Rural
12 – 1	1.3	1.7	0.9	0.9	0.8	0.7
1 – 2	0.9	1.4	0.5	0.5	0.4	0.4
2 – 3	0.8	1.3	0.4	0.5	0.3	0.3
3 – 4	0.8	1.3	0.4	0.5	0.3	0.4
4 – 5	1.1	1.4	0.6	0.9	0.4	0.8
5 – 6	2.1	2.1	1.8	2.3	1.3	2.2
6 – 7	4.7	3.7	4.4	4.9	4.0	4.5
7 – 8	6.4	4.9	6.2	6.2	6.4	5.5
8 – 9	5.6	4.9	5.7	5.5	5.7	5.3
9 – 10	5.1	5.2	5.1	5.3	4.8	5.4
10 – 11	5.2	5.5	5.2	5.4	4.9	5.8
11 – 12	5.4	5.8	5.6	5.6	5.5	6.0
12 – 13	5.5	5.7	6.0	5.7	6.0	6.2
13 – 14	5.5	5.9	5.9	5.9	5.7	6.4
14 – 15	6.1	6.3	6.4	6.6	6.3	7.2
15 – 16	7.3	6.9	7.4	7.7	7.6	8.1
16 – 17	7.8	7.2	7.8	8.0	8.3	8.0
17 – 18	7.2	6.6	7.5	7.4	8.0	7.1
18 – 19	5.4	5.3	5.9	5.5	6.2	5.4
19 – 20	4.3	4.4	4.8	4.3	5.1	4.4
20 – 21	3.7	3.8	4.0	3.6	4.3	3.6
21 – 22	3.2	3.4	3.3	3.0	3.4	2.9
22 – 23	2.6	2.9	2.4	2.3	2.4	2.1
23 – 24	2.0	2.4	1.7	1.5	1.6	1.4

Internal MDOT Links

TMIS Internal Site: Traffic count data (also, links to PTR/WIM and ADT Maps at top of page):
<http://mdotnetintra/TMIS/Home.aspx>