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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)

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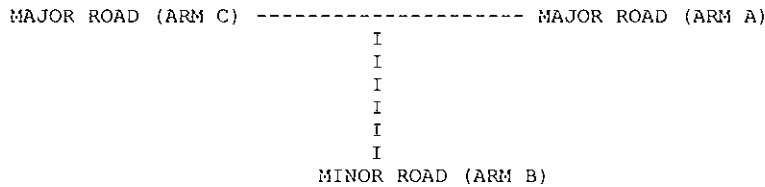
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Feb 2008 Revisions HTN3\AM Peak Sensitivity2022.vpi"
(drive-on-the-left) at 11:41:43 on Monday, 7 April 2008

RUN INFORMATION

RUN TITLE: 2022 Future Year Development Access at Boston Rd AM Pk (Sensitivity Dev Demand)
LOCATION: Boston Road
DATE: 18/02/08
CLIENT: Eco2
ENUMERATOR: Andy {ANDYBELL}
JOB NUMBER: 552-01
STATUS: Draft 1
DESCRIPTION: HTN3 Assessment Runs

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Boston Rd (W)
ARM B IS Development Access
ARM C IS Boston Rd (E)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM A-BC CONTAINS TRAFFIC GOING FROM ARM A TO ARM B AND TO ARM C
ETC.

 GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(WB-C) 7.00 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 2.20 M.	I
I	- VISIBILITY	I	(VC-B) 215.0 M.	I
I	- BLOCKS TRAFFIC	I	YES	I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 45.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 45.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) 5.00 M.	I
I	- LANE 2 WIDTH	I	(WB-A) 3.00 M.	I

 .SLOPES AND INTERCEPT

{NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For Stream B-C	Slope For Stream A-C	Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	782.87	0.29		0.11	I

I	Intercept For Stream B-A	Slope For Stream A-C	Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	I
I	514.37	0.23		0.09	0.14	0.32	I

I	Intercept For Stream C-B	Slope For Stream A-C	Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	698.47	0.26		0.26	I

NB These values do not allow for any site specific corrections

 TRAFFIC DEMAND DATA

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
I	08.00-08.15									
I	B-C	0.12	6.07	0.020		0.02	0.02	0.3		0.17
I	B-A	0.00	6.48	0.000		0.00	0.00	0.0		0.00
I	C-AB	0.36	8.77	0.041		0.04	0.06	0.9		0.12
I	C-A	4.10								
I	A-B	0.07								
I	A-C	3.12								

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
I	08.15-08.30									
I	B-C	0.15	5.96	0.025		0.02	0.02	0.4		0.17
I	B-A	0.00	6.18	0.000		0.00	0.00	0.0		0.00
I	C-AB	0.50	9.40	0.053		0.06	0.08	1.2		0.11
I	C-A	4.97								
I	A-B	0.09								
I	A-C	3.82								

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
I	08.30-08.45									
I	B-C	0.15	5.96	0.025		0.02	0.03	0.4		0.17
I	B-A	0.00	6.18	0.000		0.00	0.00	0.0		0.00
I	C-AB	0.50	9.40	0.053		0.08	0.08	1.2		0.11
I	C-A	4.97								
I	A-B	0.09								
I	A-C	3.82								

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
I	08.45-09.00									
I	B-C	0.12	6.07	0.020		0.03	0.02	0.3		0.17
I	B-A	0.00	6.48	0.000		0.00	0.00	0.0		0.00
I	C-AB	0.36	8.77	0.041		0.08	0.06	0.9		0.12
I	C-A	4.10								
I	A-B	0.07								
I	A-C	3.12								

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
I	09.00-09.15									
I	B-C	0.10	6.14	0.016		0.02	0.02	0.3		0.17
I	B-A	0.00	6.69	0.000		0.00	0.00	0.0		0.00
I	C-AB	0.28	8.30	0.034		0.06	0.05	0.7		0.12
I	C-A	3.46								
I	A-B	0.06								
I	A-C	2.61								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

 QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0

 QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0

 QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.0

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I		I
I	I	I	I	I	* DELAY *	I	* DELAY *	I		I
I	I	I	I	I	(MIN)	I	(MIN/VEH)	I	(MIN)	I
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-C	I	11.0	I	7.3	I	1.8	I	0.17	I
I	B-A	I	0.0	I	0.0	I	0.0	I	0.00	I
I	C-AB	I	34.1	I	22.8	I	5.6	I	0.16	I
I	C-A	I	376.0	I	250.7	I		I		I
I	A-B	I	6.9	I	4.6	I		I		I
I	A-C	I	286.3	I	190.9	I		I		I
I	ALL	I	714.4	I	476.2	I	7.4	I	0.01	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD .
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

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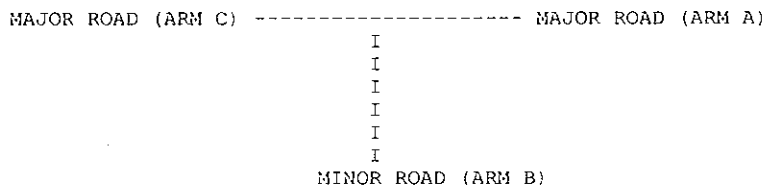
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Feb 2008 Revisions HTN3\PM Peak Sensitivity2022.vpi"
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RUN INFORMATION

RUN TITLE: 2022 Future Year Development Access at Boston Rd PM Pk (Sensitivity Dev Demand)
LOCATION: Boston Road
DATE: 18/02/08
CLIENT: Eco2
ENUMERATOR: Andy [ANDYBELL]
JOB NUMBER: 552-01
STATUS: Draft 1
DESCRIPTION: HTN3 Assessment Runs

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Boston Rd (W)
ARM B IS Development Access
ARM C IS Boston Rd (E)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM A-BC CONTAINS TRAFFIC GOING FROM ARM A TO ARM B AND TO ARM C
ETC.

 GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 7.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B) 215.0 M.
- BLOCCKS TRAFFIC	YES
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 45.0 M.
- VISIBILITY TO RIGHT	(VB-A) 45.0 M.
- LANE 1 WIDTH	(WB-C) 5.00 M.
- LANE 2 WIDTH	(WB-A) 3.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B
782.87	0.29	0.11

Intercept For Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B
514.37	0.23	0.09	0.14	0.32

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B
698.47	0.26	0.26

NB These values do not allow for any site specific corrections

 TRAFFIC DEMAND DATA

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I ARM I FLOW SCALE %, I
-----
I A I 100 I
I B I 100 I
I C I 100 I
-----
    
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Demand set: 2022 Future Year Development Access at Boston Rd PM Pk (Sensitivity Dev Demand)

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MINUTES.
 LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

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-----
I I NUMBER OF MINUTES FROM START WHEN I RATE OF FLOW (VEH/MIN) I
I ARM I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER I
I I TO RISE I IS REACHED I FALLING I PEAK I OF PEAK I PEAK I
-----
I ARM A I 15.00 I 45.00 I 75.00 I 2.56 I 3.84 I 2.56 I
I ARM B I 15.00 I 45.00 I 75.00 I 0.22 I 0.34 I 0.22 I
I ARM C I 15.00 I 45.00 I 75.00 I 2.45 I 3.68 I 2.45 I
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I I TURNING PROPORTIONS I
I I TURNING COUNTS (VEH/HR) I
I I (PERCENTAGE OF H.V.S) I
-----
I TIME I FROM/TO I ARM A I ARM B I ARM C I
-----
I 16.45 - 18.15 I I I I I
I I ARM A I 0.000 I 0.024 I 0.976 I
I I I 0.0 I 5.0 I 200.0 I
I I ( 0.0)I ( 0.0)I ( 0.0)I
I I I I I I
I I I ARM B I 0.278 I 0.000 I 0.722 I
I I I 5.0 I 0.0 I 13.0 I
I I I ( 0.0)I ( 0.0)I ( 0.0)I
I I I I I I
I I I ARM C I 0.959 I 0.041 I 0.000 I
I I I 188.0 I 8.0 I 0.0 I
I I I ( 0.0)I ( 0.0)I ( 0.0)I
I I I I I I
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TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 2022 Future Year Development Access at Boston Rd PM Pk (Sensitivity Dev Demand)
 AND FOR TIME PERIOD 2

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I TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DELAY
I (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/ (VEH.MIN/ PER ARRIVING
I (RFC) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (MIN)
-----
I 16.45-17.00
I B-C 0.16 12.29 0.013 0.00 0.01 0.2 0.08
I B-A 0.06 7.63 0.008 0.00 0.01 0.1 0.13
I C-AB 0.12 12.46 0.010 0.00 0.01 0.2 0.08
I C-A 2.34
I A-B 0.06
I A-C 2.51
I
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```

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
I	17.00-17.15									
I	B-C	0.19	12.14	0.016		0.01	0.02	0.2		0.08
I	B-A	0.07	7.45	0.010		0.01	0.01	0.1		0.14
I	C-AB	0.15	12.63	0.012		0.01	0.01	0.2		0.08
I	C-A	2.78								
I	A-B	0.07								
I	A-C	3.00								

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
I	17.15-17.30									
I	B-C	0.24	11.93	0.020		0.02	0.02	0.3		0.09
I	B-A	0.09	7.19	0.013		0.01	0.01	0.2		0.14
I	C-AB	0.20	12.86	0.015		0.01	0.02	0.3		0.08
I	C-A	3.40								
I	A-B	0.09								
I	A-C	3.67								

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
I	17.30-17.45									
I	B-C	0.24	11.93	0.020		0.02	0.02	0.3		0.09
I	B-A	0.09	7.19	0.013		0.01	0.01	0.2		0.14
I	C-AB	0.20	12.86	0.015		0.02	0.02	0.3		0.08
I	C-A	3.40								
I	A-B	0.09								
I	A-C	3.67								

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
I	17.45-18.00									
I	B-C	0.19	12.14	0.016		0.02	0.02	0.2		0.08
I	B-A	0.07	7.45	0.010		0.01	0.01	0.2		0.14
I	C-AB	0.15	12.63	0.012		0.02	0.01	0.2		0.08
I	C-A	2.78								
I	A-B	0.07								
I	A-C	3.00								

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
I	18.00-18.15									
I	B-C	0.16	12.29	0.013		0.02	0.01	0.2		0.08
I	B-A	0.06	7.63	0.008		0.01	0.01	0.1		0.13
I	C-AB	0.12	12.46	0.010		0.01	0.01	0.2		0.08
I	C-A	2.34								
I	A-B	0.06								
I	A-C	2.51								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

 QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

 QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

 QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I						
I	I	I	I	I	* DELAY *	I	* DELAY *	I						
I	I	I	I	I	I	I	I	I						
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I				
I	B-C	I	17.9	I	11.9	I	1.5	I	0.08	I	1.5	I	0.08	I
I	B-A	I	6.9	I	4.6	I	0.9	I	0.14	I	0.9	I	0.14	I
I	C-AB	I	14.2	I	9.5	I	1.3	I	0.09	I	1.3	I	0.09	I
I	C-A	I	255.6	I	170.4	I		I		I		I		I
I	A-B	I	6.9	I	4.6	I		I		I		I		I
I	A-C	I	275.3	I	183.5	I		I		I		I		I
I	ALL	I	576.7	I	384.5	I	3.7	I	0.01	I	3.7	I	0.01	I

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END OF JOB

===== end of file =====