QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-ACD	9.0	9.0	0.8	0.09	0.8	0.09
A-BCD	0.0	0.0	0.0	0.00	0.0	0.00
A-B	46.1	46.1				
A-C	84.1	84.1				
D-A	35.9	35.9	4.3	0.12	4.3	0.12
D-BC	19.9	19.9	3.3	0.17	3.3	0.17
C-ABD	229.5	229.5	33.7	0.15	33.7	0.15
C-D	0.0	0.0				
C-A	56.7	56.7				
ALL	481.2	481.2	42.1	0.09	42.1	0.09

* 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

.SLOPES AND INTERCPET

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

will be adjusted)

B-C Stream

Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
694.62	0.25	0.25	0.10	0.10

B-AD Stream

Intercept For Stream B-AD	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
542.15	0.23	0.23	0.09	0.09

Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream C-B	Slope For Opposing
0.14	0.14	0.33	

D-A Stream

Intercept For Stream D-A	Slope For Opposing Stream C-A	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
652.48	0.23	0.23	0.09	0.09

D-BC Stream

Intercept For Stream D-BC	Slope For Opposing Stream C-A	Slope For Opposing Stream B-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-D
508.61	0.22	0.22	0.09	0.09

Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream A-D	Slope For Opposing
0.14	0.14	0.31	

C-B Stream

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-C	Slope For Opposing Stream D-B
689.79	0.25	0.25	0.25	0.25

A-D Stream

Intercept For Stream A-D	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-A	Slope For Opposing Stream B-D
689.79	0.25	0.25	0.25	0.25

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

Demand set: AM PEAK 2013 + DEVT SCENARIO 1

TIME PERIOD BEGINS 08.00 AND ENDS 09.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
08.00 - 09.00	ARM A	0.000	0.346	0.654	0.000
		0.0	44.0	83.0	0.0
		(0.0)	(11.0)	(11.0)	(0.0)
	ARM B	0.000	0.000	1.000	0.000
		0.0	0.0	9.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.299	0.701	0.000	0.000
		84.0	197.0	0.0	0.0
		(8.0)	(5.0)	(0.0)	(0.0)
	ARM D	0.565	0.065	0.371	0.000
		35.0	4.0	23.0	0.0
		(17.0)	(0.0)	(45.0)	(0.0)

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 AM PEAK 2013 + DEVT SCENARIO 1
AND FOR TIME PERIOD 1

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)
08.00-08.15									
B-ACD	0.15	10.97	0.014		0.00	0.01	0.2		0.09
A-BCD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
A-B	0.73								
A-C	1.39								
D-A	0.58	8.81	0.066		0.00	0.07	1.0		0.12
D-BC	0.45	5.66	0.079		0.00	0.08	1.2		0.19
C-ABD	3.75	11.14	0.337		0.00	0.55	8.1		0.13
C-D	0.00								
C-A	0.93								

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)
08.15-08.30									
B-ACD	0.15	10.97	0.014		0.01	0.01	0.2		0.09
A-BCD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
A-B	0.73								
A-C	1.39								
D-A	0.58	8.81	0.066		0.07	0.07	1.1		0.12
D-BC	0.45	5.66	0.079		0.08	0.09	1.3		0.19
C-ABD	3.76	11.14	0.337		0.55	0.56	8.4		0.14
C-D	0.00								
C-A	0.92								

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)
08.30-08.45									
B-ACD	0.15	10.97	0.014		0.01	0.01	0.2		0.09
A-BCD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
A-B	0.73								
A-C	1.39								
D-A	0.58	8.81	0.066		0.07	0.07	1.1		0.12
D-BC	0.45	5.66	0.079		0.09	0.09	1.3		0.19
C-ABD	3.76	11.14	0.337		0.56	0.56	8.4		0.14
C-D	0.00								
C-A	0.92								

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)
08.45-09.00									
B-ACD	0.15	10.97	0.014		0.01	0.01	0.2		0.09
A-BCD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
A-B	0.73								
A-C	1.39								
D-A	0.58	8.81	0.066		0.07	0.07	1.1		0.12
D-BC	0.45	5.66	0.079		0.09	0.09	1.3		0.19
C-ABD	3.76	11.14	0.337		0.56	0.56	8.4		0.14
C-D	0.00								
C-A	0.92								

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

QUEUE FOR STREAM B-ACD

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

QUEUE FOR STREAM A-BCD

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

QUEUE FOR STREAM D-A

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

QUEUE FOR STREAM D-BC

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

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.6	*
08.30	0.6	*
08.45	0.6	*
09.00	0.6	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-ACD	9.0	9.0	0.8	0.09	0.8	0.09
A-BCD	0.0	0.0	0.0	0.00	0.0	0.00
A-B	44.1	44.1				
A-C	83.1	83.1				
D-A	34.9	34.9	4.2	0.12	4.2	0.12
D-BC	26.9	26.9	5.1	0.19	5.1	0.19
C-ABD	225.3	225.3	33.4	0.15	33.4	0.15
C-D	0.0	0.0				
C-A	55.5	55.5				
ALL	478.8	478.8	43.4	0.09	43.4	0.09

* 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

.SLOPES AND INTERCPET

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

will be adjusted)

B-C Stream

Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
694.62	0.25	0.25	0.10	0.10

B-AD Stream

Intercept For Stream B-AD	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
542.15	0.23	0.23	0.09	0.09

Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream C-B	Slope For Opposing
0.14	0.14	0.33	

D-A Stream

Intercept For Stream D-A	Slope For Opposing Stream C-A	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
652.48	0.23	0.23	0.09	0.09

D-BC Stream

Intercept For Stream D-BC	Slope For Opposing Stream C-A	Slope For Opposing Stream B-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-D
508.61	0.22	0.22	0.09	0.09

Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream A-D	Slope For Opposing
0.14	0.14	0.31	

C-B Stream

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-C	Slope For Opposing Stream D-B
689.79	0.25	0.25	0.25	0.25

A-D Stream

Intercept For Stream A-D	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-A	Slope For Opposing Stream B-D
689.79	0.25	0.25	0.25	0.25

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

Demand set: AM PEAK 2017 + DEVT SCENARIO 1

TIME PERIOD BEGINS 08.00 AND ENDS 09.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
08.00 - 09.00	ARM A	0.000	0.346	0.654	0.000
		0.0	46.0	87.0	0.0
		(0.0)	(11.0)	(10.0)	(0.0)
	ARM B	0.000	0.000	1.000	0.000
		0.0	0.0	9.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.299	0.701	0.000	0.000
		84.0	197.0	0.0	0.0
		(8.0)	(5.0)	(0.0)	(0.0)
	ARM D	0.565	0.065	0.371	0.000
		35.0	4.0	23.0	0.0
		(17.0)	(0.0)	(45.0)	(0.0)

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 AM PEAK 2017 + DEVT SCENARIO 1
AND FOR TIME PERIOD 1

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)
08.00-08.15									
B-ACD	0.15	10.95	0.014		0.00	0.01	0.2		0.09
A-BCD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
A-B	0.77								
A-C	1.45								
D-A	0.59	8.80	0.067		0.00	0.07	1.0		0.12
D-BC	0.46	5.64	0.081		0.00	0.09	1.2		0.19
C-ABD	3.94	11.15	0.353		0.00	0.59	8.8		0.14
C-D	0.00								
C-A	0.94								

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)
08.15-08.30									
B-ACD	0.15	10.95	0.014		0.01	0.01	0.2		0.09
A-BCD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
A-B	0.77								
A-C	1.45								
D-A	0.59	8.79	0.067		0.07	0.07	1.1		0.12
D-BC	0.46	5.64	0.081		0.09	0.09	1.3		0.19
C-ABD	3.94	11.15	0.353		0.59	0.60	9.0		0.14
C-D	0.00								
C-A	0.94								

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)
08.30-08.45									
B-ACD	0.15	10.95	0.014		0.01	0.01	0.2		0.09
A-BCD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
A-B	0.77								
A-C	1.45								
D-A	0.59	8.79	0.067		0.07	0.07	1.1		0.12
D-BC	0.46	5.64	0.081		0.09	0.09	1.3		0.19
C-ABD	3.94	11.15	0.353		0.60	0.60	9.0		0.14
C-D	0.00								
C-A	0.94								

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)
08.45-09.00									
B-ACD	0.15	10.95	0.014		0.01	0.01	0.2		0.09
A-BCD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
A-B	0.77								
A-C	1.45								
D-A	0.59	8.79	0.067		0.07	0.07	1.1		0.12
D-BC	0.46	5.64	0.081		0.09	0.09	1.3		0.19
C-ABD	3.94	11.15	0.353		0.60	0.60	9.1		0.14
C-D	0.00								
C-A	0.94								

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

QUEUE FOR STREAM B-ACD

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

QUEUE FOR STREAM A-BCD

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

QUEUE FOR STREAM D-A

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

QUEUE FOR STREAM D-BC

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

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.6	*
08.30	0.6	*
08.45	0.6	*
09.00	0.6	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-ACD	9.0	9.0	0.8	0.09	0.8	0.09
A-BCD	0.0	0.0	0.0	0.00	0.0	0.00
A-B	46.1	46.1				
A-C	87.1	87.1				
D-A	35.6	35.6	4.3	0.12	4.3	0.12
D-BC	27.4	27.4	5.2	0.19	5.2	0.19
C-ABD	236.4	236.4	35.9	0.15	35.9	0.15
C-D	0.0	0.0				
C-A	56.4	56.4				
ALL	498.0	498.0	46.2	0.09	46.2	0.09

* 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

.SLOPES AND INTERCPET

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

will be adjusted)

B-C Stream

Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
694.62	0.25	0.25	0.10	0.10

B-AD Stream

Intercept For Stream B-AD	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
542.15	0.23	0.23	0.09	0.09

Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream C-B	Slope For Opposing
0.14	0.14	0.33	

D-A Stream

Intercept For Stream D-A	Slope For Opposing Stream C-A	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
652.48	0.23	0.23	0.09	0.09

D-BC Stream

Intercept For Stream D-BC	Slope For Opposing Stream C-A	Slope For Opposing Stream B-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-D
508.61	0.22	0.22	0.09	0.09

Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream A-D	Slope For Opposing
0.14	0.14	0.31	

C-B Stream

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-C	Slope For Opposing Stream D-B
689.79	0.25	0.25	0.25	0.25

A-D Stream

Intercept For Stream A-D	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-A	Slope For Opposing Stream B-D
689.79	0.25	0.25	0.25	0.25

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

Demand set: AM PEAK 2013 + DEVT SCENARIO 2

TIME PERIOD BEGINS 08.00 AND ENDS 09.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
08.00 - 09.00	ARM A	0.000	0.346	0.654	0.000
		0.0	44.0	83.0	0.0
		(0.0)	(11.0)	(10.0)	(0.0)
	ARM B	0.000	0.000	1.000	0.000
		0.0	0.0	9.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.296	0.704	0.000	0.000
		84.0	200.0	0.0	0.0
		(8.0)	(6.0)	(0.0)	(0.0)
	ARM D	0.603	0.069	0.328	0.000
		35.0	4.0	19.0	0.0
		(17.0)	(0.0)	(35.0)	(0.0)

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 AM PEAK 2013 + DEVT SCENARIO 2
AND FOR TIME PERIOD 1

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)
08.00-08.15									
B-ACD	0.15	11.01	0.014		0.00	0.01	0.2		0.09
A-BCD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
A-B	0.73								
A-C	1.39								
D-A	0.59	8.85	0.066		0.00	0.07	1.0		0.12
D-BC	0.38	6.08	0.063		0.00	0.07	1.0		0.18
C-ABD	3.81	11.07	0.344		0.00	0.57	8.4		0.14
C-D	0.00								
C-A	0.92								

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)
08.15-08.30									
B-ACD	0.15	11.01	0.014		0.01	0.01	0.2		0.09
A-BCD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
A-B	0.73								
A-C	1.39								
D-A	0.59	8.85	0.066		0.07	0.07	1.1		0.12
D-BC	0.38	6.07	0.063		0.07	0.07	1.0		0.18
C-ABD	3.82	11.08	0.345		0.57	0.57	8.7		0.14
C-D	0.00								
C-A	0.91								

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)
08.30-08.45									
B-ACD	0.15	11.01	0.014		0.01	0.01	0.2		0.09
A-BCD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
A-B	0.73								
A-C	1.39								
D-A	0.59	8.85	0.066		0.07	0.07	1.1		0.12
D-BC	0.38	6.07	0.063		0.07	0.07	1.0		0.18
C-ABD	3.82	11.08	0.345		0.57	0.58	8.7		0.14
C-D	0.00								
C-A	0.91								

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)
08.45-09.00									
B-ACD	0.15	11.01	0.014		0.01	0.01	0.2		0.09
A-BCD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
A-B	0.73								
A-C	1.39								
D-A	0.59	8.85	0.066		0.07	0.07	1.1		0.12
D-BC	0.38	6.07	0.063		0.07	0.07	1.0		0.18
C-ABD	3.82	11.08	0.345		0.58	0.58	8.7		0.14
C-D	0.00								
C-A	0.91								

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

QUEUE FOR STREAM B-ACD

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

QUEUE FOR STREAM A-BCD

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

QUEUE FOR STREAM D-A

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

QUEUE FOR STREAM D-BC

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

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.6	*
08.30	0.6	*
08.45	0.6	*
09.00	0.6	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-ACD	9.0	9.0	0.8	0.09	0.8	0.09
A-BCD	0.0	0.0	0.0	0.00	0.0	0.00
A-B	44.1	44.1				
A-C	83.1	83.1				
D-A	35.1	35.1	4.2	0.12	4.2	0.12
D-BC	23.1	23.1	4.0	0.17	4.0	0.17
C-ABD	229.0	229.0	34.4	0.15	34.4	0.15
C-D	0.0	0.0				
C-A	54.8	54.8				
ALL	478.2	478.2	43.4	0.09	43.4	0.09

* 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

.SLOPES AND INTERCPET

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

will be adjusted)

B-C Stream

Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
694.62	0.25	0.25	0.10	0.10

B-AD Stream

Intercept For Stream B-AD	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
542.15	0.23	0.23	0.09	0.09

Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream C-B	Slope For Opposing
0.14	0.14	0.33	

D-A Stream

Intercept For Stream D-A	Slope For Opposing Stream C-A	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
652.48	0.23	0.23	0.09	0.09

D-BC Stream

Intercept For Stream D-BC	Slope For Opposing Stream C-A	Slope For Opposing Stream B-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-D
508.61	0.22	0.22	0.09	0.09

Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream A-D	Slope For Opposing
0.14	0.14	0.31	

C-B Stream

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-C	Slope For Opposing Stream D-B
689.79	0.25	0.25	0.25	0.25

A-D Stream

Intercept For Stream A-D	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-A	Slope For Opposing Stream B-D
689.79	0.25	0.25	0.25	0.25

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

Demand set: AM PEAK 2017 + DEVT SCENARIO 2

TIME PERIOD BEGINS 08.00 AND ENDS 09.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
08.00 - 09.00	ARM A	0.000	0.346	0.654	0.000
		0.0	46.0	87.0	0.0
		(0.0)	(11.0)	(10.0)	(0.0)
	ARM B	0.000	0.000	1.000	0.000
		0.0	0.0	9.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.297	0.703	0.000	0.000
		88.0	208.0	0.0	0.0
		(8.0)	(6.0)	(0.0)	(0.0)
	ARM D	0.610	0.068	0.322	0.000
		36.0	4.0	19.0	0.0
		(17.0)	(0.0)	(35.0)	(0.0)

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 AM PEAK 2017 + DEVT SCENARIO 2
AND FOR TIME PERIOD 1

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)
08.00-08.15									
B-ACD	0.15	10.99	0.014		0.00	0.01	0.2		0.09
A-BCD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
A-B	0.77								
A-C	1.45								
D-A	0.60	8.84	0.068		0.00	0.07	1.0		0.12
D-BC	0.38	6.05	0.063		0.00	0.07	1.0		0.18
C-ABD	3.99	11.09	0.360		0.00	0.61	9.0		0.14
C-D	0.00								
C-A	0.94								

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)
08.15-08.30									
B-ACD	0.15	10.98	0.014		0.01	0.01	0.2		0.09
A-BCD	0.00	10.09	0.000		0.00	0.00	0.0		0.00
A-B	0.77								
A-C	1.45								
D-A	0.60	8.83	0.068		0.07	0.07	1.1		0.12
D-BC	0.38	6.05	0.063		0.07	0.07	1.0		0.18
C-ABD	4.00	11.09	0.360		0.61	0.62	9.3		0.14
C-D	0.00								
C-A	0.93								

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)
08.30-08.45									
B-ACD	0.15	10.98	0.014		0.01	0.01	0.2		0.09
A-BCD	0.00	10.09	0.000		0.00	0.00	0.0		0.00
A-B	0.77								
A-C	1.45								
D-A	0.60	8.83	0.068		0.07	0.07	1.1		0.12
D-BC	0.38	6.05	0.063		0.07	0.07	1.0		0.18
C-ABD	4.00	11.09	0.360		0.62	0.62	9.3		0.14
C-D	0.00								
C-A	0.93								

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)
08.45-09.00									
B-ACD	0.15	10.98	0.014		0.01	0.01	0.2		0.09
A-BCD	0.00	10.09	0.000		0.00	0.00	0.0		0.00
A-B	0.77								
A-C	1.45								
D-A	0.60	8.83	0.068		0.07	0.07	1.1		0.12
D-BC	0.38	6.05	0.063		0.07	0.07	1.0		0.18
C-ABD	4.00	11.09	0.360		0.62	0.62	9.3		0.14
C-D	0.00								
C-A	0.93								

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

QUEUE FOR STREAM B-ACD

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

QUEUE FOR STREAM A-BCD

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

QUEUE FOR STREAM D-A

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

QUEUE FOR STREAM D-BC

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

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.6	*
08.30	0.6	*
08.45	0.6	*
09.00	0.6	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-ACD	9.0	9.0	0.8	0.09	0.8	0.09
A-BCD	0.0	0.0	0.0	0.00	0.0	0.00
A-B	46.1	46.1				
A-C	87.1	87.1				
D-A	35.9	35.9	4.3	0.12	4.3	0.12
D-BC	22.9	22.9	4.0	0.17	4.0	0.17
C-ABD	239.7	239.7	36.9	0.15	37.0	0.15
C-D	0.0	0.0				
C-A	56.1	56.1				
ALL	496.8	496.8	46.0	0.09	46.1	0.09

* 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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QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-ACD	19.2	19.2	2.2	0.12	2.2	0.12
A-BCD	0.0	0.0	0.0	0.00	0.0	0.00
A-B	43.0	43.0				
A-C	113.0	113.0				
D-A	18.9	18.9	2.2	0.11	2.2	0.11
D-BC	18.9	18.9	2.5	0.13	2.5	0.13
C-ABD	129.1	129.1	15.6	0.12	15.6	0.12
C-D	0.0	0.0				
C-A	70.7	70.7				
ALL	412.8	412.8	22.5	0.05	22.5	0.05

* 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

.SLOPES AND INTERCPET

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

will be adjusted)

B-C Stream

Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
694.62	0.25	0.25	0.10	0.10

B-AD Stream

Intercept For Stream B-AD	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
542.15	0.23	0.23	0.09	0.09

Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream C-B	Slope For Opposing
0.14	0.14	0.33	

D-A Stream

Intercept For Stream D-A	Slope For Opposing Stream C-A	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
652.48	0.23	0.23	0.09	0.09

D-BC Stream

Intercept For Stream D-BC	Slope For Opposing Stream C-A	Slope For Opposing Stream B-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-D
508.61	0.22	0.22	0.09	0.09

Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream A-D	Slope For Opposing
0.14	0.14	0.31	

C-B Stream

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-C	Slope For Opposing Stream D-B
689.79	0.25	0.25	0.25	0.25

A-D Stream

Intercept For Stream A-D	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-A	Slope For Opposing Stream B-D
689.79	0.25	0.25	0.25	0.25

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

Demand set: PM PEAK 2013 + DEVT SCENARIO 1

TIME PERIOD BEGINS 17.00 AND ENDS 18.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
17.00 - 18.00	ARM A	0.000	0.272	0.728	0.000
		0.0	41.0	110.0	0.0
		(0.0)	(10.0)	(0.0)	(0.0)
	ARM B	0.211	0.000	0.789	0.000
		4.0	0.0	15.0	0.0
		(0.0)	(0.0)	(20.0)	(0.0)
	ARM C	0.430	0.570	0.000	0.000
		86.0	114.0	0.0	0.0
		(0.0)	(4.0)	(0.0)	(0.0)
	ARM D	0.432	0.091	0.477	0.000
		19.0	4.0	21.0	0.0
		(16.0)	(0.0)	(25.0)	(0.0)

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 PM PEAK 2013 + DEVT SCENARIO 1
AND FOR TIME PERIOD 1

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)
17.00-17.15									
B-ACD	0.32	8.74	0.037		0.00	0.04	0.5		0.12
A-BCD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
A-B	0.68								
A-C	1.84								
D-A	0.32	8.93	0.035		0.00	0.04	0.5		0.12
D-BC	0.41	6.45	0.064		0.00	0.07	1.0		0.17
C-ABD	2.17	11.26	0.193		0.00	0.26	3.9		0.11
C-D	0.00								
C-A	1.16								

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)
17.15-17.30									
B-ACD	0.32	8.74	0.037		0.04	0.04	0.6		0.12
A-BCD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
A-B	0.68								
A-C	1.84								
D-A	0.32	8.92	0.035		0.04	0.04	0.5		0.12
D-BC	0.41	6.45	0.064		0.07	0.07	1.0		0.17
C-ABD	2.17	11.26	0.193		0.26	0.27	4.0		0.11
C-D	0.00								
C-A	1.16								

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)
17.30-17.45									
B-ACD	0.32	8.74	0.037		0.04	0.04	0.6		0.12
A-BCD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
A-B	0.68								
A-C	1.84								
D-A	0.32	8.92	0.035		0.04	0.04	0.5		0.12
D-BC	0.41	6.45	0.064		0.07	0.07	1.0		0.17
C-ABD	2.17	11.26	0.193		0.27	0.27	4.0		0.11
C-D	0.00								
C-A	1.16								

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)
17.45-18.00									
B-ACD	0.32	8.74	0.037		0.04	0.04	0.6		0.12
A-BCD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
A-B	0.68								
A-C	1.84								
D-A	0.32	8.92	0.035		0.04	0.04	0.5		0.12
D-BC	0.41	6.45	0.064		0.07	0.07	1.0		0.17
C-ABD	2.17	11.26	0.193		0.27	0.27	4.0		0.11
C-D	0.00								
C-A	1.16								

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

QUEUE FOR STREAM B-ACD

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

QUEUE FOR STREAM A-BCD

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

QUEUE FOR STREAM D-A

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

QUEUE FOR STREAM D-BC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.3
17.30	0.3
17.45	0.3
18.00	0.3

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-ACD	19.2	19.2	2.3	0.12	2.3	0.12
A-BCD	0.0	0.0	0.0	0.00	0.0	0.00
A-B	41.1	41.1				
A-C	110.1	110.1				
D-A	18.9	18.9	2.2	0.11	2.2	0.11
D-BC	24.9	24.9	4.1	0.16	4.1	0.16
C-ABD	130.2	130.2	16.0	0.12	16.0	0.12
C-D	0.0	0.0				
C-A	69.6	69.6				
ALL	414.0	414.0	24.4	0.06	24.5	0.06

* 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

.SLOPES AND INTERCPET

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

will be adjusted)

B-C Stream

Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
694.62	0.25	0.25	0.10	0.10

B-AD Stream

Intercept For Stream B-AD	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
542.15	0.23	0.23	0.09	0.09

Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream C-B	Slope For Opposing
0.14	0.14	0.33	

D-A Stream

Intercept For Stream D-A	Slope For Opposing Stream C-A	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
652.48	0.23	0.23	0.09	0.09

D-BC Stream

Intercept For Stream D-BC	Slope For Opposing Stream C-A	Slope For Opposing Stream B-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-D
508.61	0.22	0.22	0.09	0.09

Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream A-D	Slope For Opposing
0.14	0.14	0.31	

C-B Stream

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-C	Slope For Opposing Stream D-B
689.79	0.25	0.25	0.25	0.25

A-D Stream

Intercept For Stream A-D	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-A	Slope For Opposing Stream B-D
689.79	0.25	0.25	0.25	0.25

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

Demand set: PM PEAK 2017 + DEVT SCENARIO 1

TIME PERIOD BEGINS 17.00 AND ENDS 18.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
17.00 - 18.00	ARM A	0.000	0.272	0.728	0.000
		0.0	43.0	115.0	0.0
		(0.0)	(9.0)	(0.0)	(0.0)
	ARM B	0.211	0.000	0.789	0.000
		4.0	0.0	15.0	0.0
		(0.0)	(0.0)	(20.0)	(0.0)
	ARM C	0.431	0.569	0.000	0.000
		90.0	119.0	0.0	0.0
		(0.0)	(4.0)	(0.0)	(0.0)
	ARM D	0.432	0.091	0.477	0.000
		19.0	4.0	21.0	0.0
		(16.0)	(0.0)	(25.0)	(0.0)

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 PM PEAK 2017 + DEVT SCENARIO 1
AND FOR TIME PERIOD 1

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)
17.00-17.15									
B-ACD	0.32	8.71	0.037		0.00	0.04	0.5		0.12
A-BCD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
A-B	0.72								
A-C	1.91								
D-A	0.32	8.91	0.035		0.00	0.04	0.5		0.12
D-BC	0.41	6.42	0.065		0.00	0.07	1.0		0.17
C-ABD	2.28	11.28	0.202		0.00	0.28	4.2		0.11
C-D	0.00								
C-A	1.20								

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)
17.15-17.30									
B-ACD	0.32	8.71	0.037		0.04	0.04	0.6		0.12
A-BCD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
A-B	0.72								
A-C	1.91								
D-A	0.32	8.91	0.035		0.04	0.04	0.5		0.12
D-BC	0.41	6.42	0.065		0.07	0.07	1.0		0.17
C-ABD	2.28	11.28	0.202		0.28	0.28	4.3		0.11
C-D	0.00								
C-A	1.20								

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)
17.30-17.45									
B-ACD	0.32	8.71	0.037		0.04	0.04	0.6		0.12
A-BCD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
A-B	0.72								
A-C	1.91								
D-A	0.32	8.91	0.035		0.04	0.04	0.5		0.12
D-BC	0.41	6.42	0.065		0.07	0.07	1.0		0.17
C-ABD	2.28	11.28	0.202		0.28	0.28	4.3		0.11
C-D	0.00								
C-A	1.20								

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)
17.45-18.00									
B-ACD	0.32	8.71	0.037		0.04	0.04	0.6		0.12
A-BCD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
A-B	0.72								
A-C	1.91								
D-A	0.32	8.91	0.035		0.04	0.04	0.6		0.12
D-BC	0.41	6.42	0.065		0.07	0.07	1.0		0.17
C-ABD	2.28	11.28	0.202		0.28	0.28	4.3		0.11
C-D	0.00								
C-A	1.20								

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

QUEUE FOR STREAM B-ACD

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

QUEUE FOR STREAM A-BCD

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

QUEUE FOR STREAM D-A

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

QUEUE FOR STREAM D-BC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.3
17.30	0.3
17.45	0.3
18.00	0.3

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-ACD	19.2	19.2	2.3	0.12	2.3	0.12
A-BCD	0.0	0.0	0.0	0.00	0.0	0.00
A-B	42.9	42.9				
A-C	114.9	114.9				
D-A	18.9	18.9	2.2	0.11	2.2	0.11
D-BC	24.9	24.9	4.1	0.16	4.1	0.16
C-ABD	136.8	136.8	17.0	0.12	17.0	0.12
C-D	0.0	0.0				
C-A	72.0	72.0				
ALL	429.6	429.6	25.5	0.06	25.5	0.06

* 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

.SLOPES AND INTERCPET

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

will be adjusted)

B-C Stream

Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
694.62	0.25	0.25	0.10	0.10

B-AD Stream

Intercept For Stream B-AD	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
542.15	0.23	0.23	0.09	0.09

Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream C-B	Slope For Opposing
0.14	0.14	0.33	

D-A Stream

Intercept For Stream D-A	Slope For Opposing Stream C-A	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
652.48	0.23	0.23	0.09	0.09

D-BC Stream

Intercept For Stream D-BC	Slope For Opposing Stream C-A	Slope For Opposing Stream B-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-D
508.61	0.22	0.22	0.09	0.09

Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream A-D	Slope For Opposing
0.14	0.14	0.31	

C-B Stream

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-C	Slope For Opposing Stream D-B
689.79	0.25	0.25	0.25	0.25

A-D Stream

Intercept For Stream A-D	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-A	Slope For Opposing Stream B-D
689.79	0.25	0.25	0.25	0.25

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

Demand set: PM PEAK 2013 + DEVT SCENARIO 2

TIME PERIOD BEGINS 17.00 AND ENDS 18.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
17.00 - 18.00	ARM A	0.000	0.272	0.728	0.000
		0.0	41.0	110.0	0.0
		(0.0)	(10.0)	(0.0)	(0.0)
	ARM B	0.211	0.000	0.789	0.000
		4.0	0.0	15.0	0.0
		(0.0)	(0.0)	(20.0)	(0.0)
	ARM C	0.424	0.576	0.000	0.000
		86.0	117.0	0.0	0.0
		(0.0)	(7.0)	(0.0)	(0.0)
	ARM D	0.475	0.100	0.425	0.000
		19.0	4.0	17.0	0.0
		(16.0)	(0.0)	(10.0)	(0.0)

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 PM PEAK 2013 + DEVT SCENARIO 2
AND FOR TIME PERIOD 1

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)
17.00-17.15									
B-ACD	0.32	8.76	0.037		0.00	0.04	0.5		0.12
A-BCD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
A-B	0.68								
A-C	1.84								
D-A	0.32	8.96	0.036		0.00	0.04	0.5		0.12
D-BC	0.35	7.22	0.049		0.00	0.05	0.7		0.15
C-ABD	2.23	11.01	0.203		0.00	0.28	4.2		0.11
C-D	0.00								
C-A	1.15								

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)
17.15-17.30									
B-ACD	0.32	8.76	0.037		0.04	0.04	0.6		0.12
A-BCD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
A-B	0.68								
A-C	1.84								
D-A	0.32	8.96	0.036		0.04	0.04	0.5		0.12
D-BC	0.35	7.22	0.049		0.05	0.05	0.8		0.15
C-ABD	2.24	11.01	0.203		0.28	0.28	4.3		0.11
C-D	0.00								
C-A	1.14								

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)
17.30-17.45									
B-ACD	0.32	8.76	0.037		0.04	0.04	0.6		0.12
A-BCD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
A-B	0.68								
A-C	1.84								
D-A	0.32	8.96	0.036		0.04	0.04	0.6		0.12
D-BC	0.35	7.22	0.049		0.05	0.05	0.8		0.15
C-ABD	2.24	11.01	0.203		0.28	0.28	4.3		0.11
C-D	0.00								
C-A	1.14								

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)
17.45-18.00									
B-ACD	0.32	8.76	0.037		0.04	0.04	0.6		0.12
A-BCD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
A-B	0.68								
A-C	1.84								
D-A	0.32	8.96	0.036		0.04	0.04	0.6		0.12
D-BC	0.35	7.22	0.049		0.05	0.05	0.8		0.15
C-ABD	2.24	11.01	0.203		0.28	0.28	4.3		0.11
C-D	0.00								
C-A	1.14								

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

QUEUE FOR STREAM B-ACD

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

QUEUE FOR STREAM A-BCD

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

QUEUE FOR STREAM D-A

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

QUEUE FOR STREAM D-BC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.3
17.30	0.3
17.45	0.3
18.00	0.3

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-ACD	19.2	19.2	2.2	0.12	2.2	0.12
A-BCD	0.0	0.0	0.0	0.00	0.0	0.00
A-B	41.1	41.1				
A-C	110.1	110.1				
D-A	19.1	19.1	2.2	0.11	2.2	0.11
D-BC	21.1	21.1	3.0	0.14	3.0	0.14
C-ABD	134.1	134.1	17.0	0.13	17.0	0.13
C-D	0.0	0.0				
C-A	68.7	68.7				
ALL	413.4	413.4	24.4	0.06	24.4	0.06

* 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

.SLOPES AND INTERCPET

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

will be adjusted)

B-C Stream

Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
694.62	0.25	0.25	0.10	0.10

B-AD Stream

Intercept For Stream B-AD	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
542.15	0.23	0.23	0.09	0.09

Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream C-B	Slope For Opposing
0.14	0.14	0.33	

D-A Stream

Intercept For Stream D-A	Slope For Opposing Stream C-A	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
652.48	0.23	0.23	0.09	0.09

D-BC Stream

Intercept For Stream D-BC	Slope For Opposing Stream C-A	Slope For Opposing Stream B-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-D
508.61	0.22	0.22	0.09	0.09

Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream A-D	Slope For Opposing
0.14	0.14	0.31	

C-B Stream

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-C	Slope For Opposing Stream D-B
689.79	0.25	0.25	0.25	0.25

A-D Stream

Intercept For Stream A-D	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-A	Slope For Opposing Stream B-D
689.79	0.25	0.25	0.25	0.25

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

Demand set: PM PEAK 2017 + DEVT SCENARIO 2

TIME PERIOD BEGINS 17.00 AND ENDS 18.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
17.00 - 18.00	ARM A	0.000	0.272	0.728	0.000
		0.0	43.0	115.0	0.0
		(0.0)	(9.0)	(0.0)	(0.0)
	ARM B	0.211	0.000	0.789	0.000
		4.0	0.0	15.0	0.0
		(0.0)	(0.0)	(20.0)	(0.0)
	ARM C	0.425	0.575	0.000	0.000
		90.0	122.0	0.0	0.0
		(0.0)	(7.0)	(0.0)	(0.0)
	ARM D	0.475	0.100	0.425	0.000
		19.0	4.0	17.0	0.0
		(16.0)	(0.0)	(10.0)	(0.0)

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 PM PEAK 2017 + DEVT SCENARIO 2
AND FOR TIME PERIOD 1

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)
17.00-17.15									
B-ACD	0.32	8.73	0.037		0.00	0.04	0.5		0.12
A-BCD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
A-B	0.72								
A-C	1.91								
D-A	0.32	8.95	0.036		0.00	0.04	0.5		0.12
D-BC	0.35	7.19	0.049		0.00	0.05	0.7		0.15
C-ABD	2.35	11.03	0.213		0.00	0.30	4.5		0.11
C-D	0.00								
C-A	1.18								

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)
17.15-17.30									
B-ACD	0.32	8.72	0.037		0.04	0.04	0.6		0.12
A-BCD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
A-B	0.72								
A-C	1.91								
D-A	0.32	8.95	0.036		0.04	0.04	0.6		0.12
D-BC	0.35	7.19	0.049		0.05	0.05	0.8		0.15
C-ABD	2.35	11.04	0.213		0.30	0.30	4.6		0.12
C-D	0.00								
C-A	1.18								

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)
17.30-17.45									
B-ACD	0.32	8.72	0.037		0.04	0.04	0.6		0.12
A-BCD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
A-B	0.72								
A-C	1.91								
D-A	0.32	8.95	0.036		0.04	0.04	0.6		0.12
D-BC	0.35	7.19	0.049		0.05	0.05	0.8		0.15
C-ABD	2.35	11.04	0.213		0.30	0.30	4.6		0.12
C-D	0.00								
C-A	1.18								

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)
17.45-18.00									
B-ACD	0.32	8.72	0.037		0.04	0.04	0.6		0.12
A-BCD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
A-B	0.72								
A-C	1.91								
D-A	0.32	8.95	0.036		0.04	0.04	0.6		0.12
D-BC	0.35	7.19	0.049		0.05	0.05	0.8		0.15
C-ABD	2.35	11.04	0.213		0.30	0.30	4.6		0.12
C-D	0.00								
C-A	1.18								

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

QUEUE FOR STREAM B-ACD

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

QUEUE FOR STREAM A-BCD

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

QUEUE FOR STREAM D-A

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

QUEUE FOR STREAM D-BC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1

QUEUE FOR STREAM C-ABD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.3
17.30	0.3
17.45	0.3
18.00	0.3

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-ACD	19.2	19.2	2.3	0.12	2.3	0.12
A-BCD	0.0	0.0	0.0	0.00	0.0	0.00
A-B	42.9	42.9				
A-C	114.9	114.9				
D-A	19.1	19.1	2.2	0.11	2.2	0.11
D-BC	21.1	21.1	3.0	0.14	3.0	0.14
C-ABD	141.1	141.1	18.1	0.13	18.1	0.13
C-D	0.0	0.0				
C-A	70.7	70.7				
ALL	429.0	429.0	25.6	0.06	25.6	0.06

* 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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[Printed at 11:23:00 on 19/07/2012]

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-C	17.0	17.0	1.9	0.11	1.9	0.11
B-AD	179.2	179.2	37.0	0.21	37.1	0.21
A-BCD	62.2	62.2	7.3	0.12	7.3	0.12
A-B	0.0	0.0				
A-C	80.6	80.6				
D-ABC	91.8	91.8	9.4	0.10	9.4	0.10
C-ABD	0.0	0.0	0.0	0.00	0.0	0.00
C-D	17.0	17.0				
C-A	62.8	62.8				
ALL	510.6	510.6	55.6	0.11	55.7	0.11

* 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

.SLOPES AND INTERCPET

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

will be adjusted)

B-C Stream

Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
632.05	0.22	0.22	0.09	0.09

B-AD Stream

Intercept For Stream B-AD	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
490.77	0.20	0.20	0.08	0.08

Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream C-B	Slope For Opposing
0.13	0.13	0.29	

D-A Stream

Intercept For Stream D-A	Slope For Opposing Stream C-A	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
736.85	0.26	0.26	0.10	0.10

D-BC Stream

Intercept For Stream D-BC	Slope For Opposing Stream C-A	Slope For Opposing Stream B-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-D
575.12	0.24	0.24	0.09	0.09

Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream A-D	Slope For Opposing
0.15	0.15	0.34	

C-B Stream

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-C	Slope For Opposing Stream D-B
689.79	0.24	0.24	0.24	0.24

A-D Stream

Intercept For Stream A-D	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-A	Slope For Opposing Stream B-D
689.79	0.24	0.24	0.24	0.24

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

Demand set: AM PEAK 2013 + DEVT SCENARIO 1

TIME PERIOD BEGINS 17.00 AND ENDS 18.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
17.00 - 18.00	ARM A	0.000	0.000	0.641	0.359
		0.0	0.0	93.0	52.0
		(0.0)	(0.0)	(8.0)	(4.0)
	ARM B	0.244	0.000	0.114	0.642
		47.0	0.0	22.0	124.0
		(8.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.750	0.000	0.000	0.250
		69.0	0.0	0.0	23.0
		(5.0)	(0.0)	(0.0)	(23.0)
	ARM D	0.966	0.000	0.034	0.000
		85.0	0.0	3.0	0.0
		(2.0)	(0.0)	(0.0)	(0.0)

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 AM PEAK 2013 + DEVT SCENARIO 1
AND FOR TIME PERIOD 1

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)
17.00-17.15									
B-C	0.37	9.18	0.040		0.00	0.04	0.6		0.11
B-AD	2.85	7.45	0.383		0.00	0.61	8.5		0.21
A-BCD	1.01	10.98	0.092		0.00	0.12	1.8		0.10
A-B	0.00								
A-C	1.41								
D-ABC	1.47	11.13	0.132		0.00	0.15	2.2		0.10
C-ABD	0.00	10.07	0.000		0.00	0.00	0.0		0.00
C-D	0.38								
C-A	1.15								

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)
17.15-17.30									
B-C	0.37	9.16	0.040		0.04	0.04	0.6		0.11
B-AD	2.85	7.45	0.383		0.61	0.61	9.2		0.22
A-BCD	1.01	10.97	0.092		0.12	0.12	1.8		0.10
A-B	0.00								
A-C	1.41								
D-ABC	1.47	11.12	0.132		0.15	0.15	2.3		0.10
C-ABD	0.00	10.07	0.000		0.00	0.00	0.0		0.00
C-D	0.38								
C-A	1.15								

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)
17.30-17.45									
B-C	0.37	9.16	0.040		0.04	0.04	0.6		0.11
B-AD	2.85	7.45	0.383		0.61	0.62	9.2		0.22
A-BCD	1.01	10.97	0.092		0.12	0.12	1.8		0.10
A-B	0.00								
A-C	1.41								
D-ABC	1.47	11.12	0.132		0.15	0.15	2.3		0.10
C-ABD	0.00	10.07	0.000		0.00	0.00	0.0		0.00
C-D	0.38								
C-A	1.15								

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)
17.45-18.00									
B-C	0.37	9.16	0.040		0.04	0.04	0.6		0.11
B-AD	2.85	7.45	0.383		0.62	0.62	9.3		0.22
A-BCD	1.01	10.97	0.092		0.12	0.12	1.8		0.10
A-B	0.00								
A-C	1.41								
D-ABC	1.47	11.12	0.132		0.15	0.15	2.3		0.10
C-ABD	0.00	10.07	0.000		0.00	0.00	0.0		0.00
C-D	0.38								
C-A	1.15								

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
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0

QUEUE FOR STREAM B-AD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.6	*
17.30	0.6	*
17.45	0.6	*
18.00	0.6	*

QUEUE FOR STREAM A-BCD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.2
17.30	0.2
17.45	0.2
18.00	0.2

QUEUE FOR STREAM C-ABD

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-C	22.0	22.0	2.5	0.11	2.5	0.11
B-AD	171.2	171.2	36.2	0.21	36.2	0.21
A-BCD	60.5	60.5	7.3	0.12	7.3	0.12
A-B	0.0	0.0				
A-C	84.7	84.7				
D-ABC	88.2	88.2	9.0	0.10	9.0	0.10
C-ABD	0.0	0.0	0.0	0.00	0.0	0.00
C-D	22.9	22.9				
C-A	68.8	68.8				
ALL	518.4	518.4	54.9	0.11	55.0	0.11

* 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

.SLOPES AND INTERCPET

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

will be adjusted)

B-C Stream

Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
632.05	0.22	0.22	0.09	0.09

B-AD Stream

Intercept For Stream B-AD	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
490.77	0.20	0.20	0.08	0.08

Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream C-B	Slope For Opposing
0.13	0.13	0.29	

D-A Stream

Intercept For Stream D-A	Slope For Opposing Stream C-A	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
736.85	0.26	0.26	0.10	0.10

D-BC Stream

Intercept For Stream D-BC	Slope For Opposing Stream C-A	Slope For Opposing Stream B-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-D
575.12	0.24	0.24	0.09	0.09

Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream A-D	Slope For Opposing
0.15	0.15	0.34	

C-B Stream

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-C	Slope For Opposing Stream D-B
689.79	0.24	0.24	0.24	0.24

A-D Stream

Intercept For Stream A-D	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-A	Slope For Opposing Stream B-D
689.79	0.24	0.24	0.24	0.24

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

Demand set: AM PEAK 2017 + DEVT SCENARIO 1

TIME PERIOD BEGINS 17.00 AND ENDS 18.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
17.00 - 18.00	ARM A	0.000	0.000	0.642	0.358
		0.0	0.0	97.0	54.0
		(0.0)	(0.0)	(7.0)	(4.0)
	ARM B	0.244	0.000	0.109	0.647
		49.0	0.0	22.0	130.0
		(0.0)	(0.0)	(8.0)	(0.0)
	ARM C	0.758	0.000	0.000	0.242
		72.0	0.0	0.0	23.0
		(5.0)	(0.0)	(0.0)	(23.0)
	ARM D	0.967	0.000	0.033	0.000
		89.0	0.0	3.0	0.0
		(2.0)	(0.0)	(0.0)	(0.0)

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 AM PEAK 2017 + DEVT SCENARIO 1
AND FOR TIME PERIOD 1

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)
17.00-17.15									
B-C	0.37	8.47	0.043		0.00	0.04	0.7		0.12
B-AD	2.98	7.59	0.393		0.00	0.63	8.9		0.21
A-BCD	1.05	11.00	0.096		0.00	0.13	1.9		0.10
A-B	0.00								
A-C	1.47								
D-ABC	1.53	11.12	0.138		0.00	0.16	2.3		0.10
C-ABD	0.00	10.06	0.000		0.00	0.00	0.0		0.00
C-D	0.38								
C-A	1.20								

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)
17.15-17.30									
B-C	0.37	8.45	0.043		0.04	0.05	0.7		0.12
B-AD	2.98	7.59	0.393		0.63	0.64	9.6		0.22
A-BCD	1.05	10.99	0.096		0.13	0.13	1.9		0.10
A-B	0.00								
A-C	1.47								
D-ABC	1.53	11.11	0.138		0.16	0.16	2.4		0.10
C-ABD	0.00	10.06	0.000		0.00	0.00	0.0		0.00
C-D	0.38								
C-A	1.20								

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)
17.30-17.45									
B-C	0.37	8.45	0.043		0.05	0.05	0.7		0.12
B-AD	2.98	7.59	0.393		0.64	0.64	9.6		0.22
A-BCD	1.05	10.99	0.096		0.13	0.13	1.9		0.10
A-B	0.00								
A-C	1.47								
D-ABC	1.53	11.11	0.138		0.16	0.16	2.4		0.10
C-ABD	0.00	10.06	0.000		0.00	0.00	0.0		0.00
C-D	0.38								
C-A	1.20								

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)
17.45-18.00									
B-C	0.37	8.45	0.043		0.05	0.05	0.7		0.12
B-AD	2.98	7.59	0.393		0.64	0.64	9.6		0.22
A-BCD	1.05	10.99	0.096		0.13	0.13	1.9		0.10
A-B	0.00								
A-C	1.47								
D-ABC	1.53	11.11	0.138		0.16	0.16	2.4		0.10
C-ABD	0.00	10.06	0.000		0.00	0.00	0.0		0.00
C-D	0.38								
C-A	1.20								

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
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0

QUEUE FOR STREAM B-AD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.6	*
17.30	0.6	*
17.45	0.6	*
18.00	0.6	*

QUEUE FOR STREAM A-BCD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.2
17.30	0.2
17.45	0.2
18.00	0.2

QUEUE FOR STREAM C-ABD

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-C	22.0	22.0	2.7	0.12	2.7	0.12
B-AD	179.0	179.0	37.7	0.21	37.7	0.21
A-BCD	63.2	63.2	7.6	0.12	7.6	0.12
A-B	0.0	0.0				
A-C	88.0	88.0				
D-ABC	91.8	91.8	9.5	0.10	9.5	0.10
C-ABD	0.0	0.0	0.0	0.00	0.0	0.00
C-D	23.0	23.0				
C-A	71.8	71.8				
ALL	538.8	538.8	57.5	0.11	57.5	0.11

* 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

.SLOPES AND INTERCPET

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

will be adjusted)

B-C Stream

Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
632.05	0.22	0.22	0.09	0.09

B-AD Stream

Intercept For Stream B-AD	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
490.77	0.20	0.20	0.08	0.08

	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream C-B	Slope For Opposing
	0.13	0.13	0.29	

D-A Stream

Intercept For Stream D-A	Slope For Opposing Stream C-A	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
736.85	0.26	0.26	0.10	0.10

D-BC Stream

Intercept For Stream D-BC	Slope For Opposing Stream C-A	Slope For Opposing Stream B-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-D
575.12	0.24	0.24	0.09	0.09

	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream A-D	Slope For Opposing
	0.15	0.15	0.34	

C-B Stream

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-C	Slope For Opposing Stream D-B
689.79	0.24	0.24	0.24	0.24

A-D Stream

Intercept For Stream A-D	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-A	Slope For Opposing Stream B-D
689.79	0.24	0.24	0.24	0.24

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

Demand set: AM PEAK 2013 + DEVT SCENARIO 2

TIME PERIOD BEGINS 17.00 AND ENDS 18.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
17.00 - 18.00	ARM A	0.000	0.000	0.634	0.366
		0.0	0.0	90.0	52.0
		(0.0)	(0.0)	(4.0)	(4.0)
	ARM B	0.240	0.000	0.128	0.633
		47.0	0.0	25.0	124.0
		(0.0)	(0.0)	(21.0)	(0.0)
	ARM C	0.783	0.000	0.000	0.217
		72.0	0.0	0.0	20.0
		(10.0)	(0.0)	(0.0)	(9.0)
	ARM D	0.966	0.000	0.034	0.000
		85.0	0.0	3.0	0.0
		(2.0)	(0.0)	(0.0)	(0.0)

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 AM PEAK 2013 + DEVT SCENARIO 2
AND FOR TIME PERIOD 1

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)
17.00-17.15									
B-C	0.42	7.62	0.055		0.00	0.06	0.8		0.14
B-AD	2.85	7.63	0.374		0.00	0.58	8.2		0.21
A-BCD	1.00	10.98	0.091		0.00	0.12	1.8		0.10
A-B	0.00								
A-C	1.37								
D-ABC	1.47	11.13	0.132		0.00	0.15	2.2		0.10
C-ABD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
C-D	0.33								
C-A	1.20								

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)
17.15-17.30									
B-C	0.42	7.61	0.055		0.06	0.06	0.9		0.14
B-AD	2.85	7.63	0.374		0.58	0.59	8.8		0.21
A-BCD	1.00	10.97	0.091		0.12	0.12	1.8		0.10
A-B	0.00								
A-C	1.37								
D-ABC	1.47	11.12	0.132		0.15	0.15	2.3		0.10
C-ABD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
C-D	0.33								
C-A	1.20								

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)
17.30-17.45									
B-C	0.42	7.61	0.055		0.06	0.06	0.9		0.14
B-AD	2.85	7.63	0.374		0.59	0.59	8.9		0.21
A-BCD	1.00	10.97	0.091		0.12	0.12	1.8		0.10
A-B	0.00								
A-C	1.37								
D-ABC	1.47	11.12	0.132		0.15	0.15	2.3		0.10
C-ABD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
C-D	0.33								
C-A	1.20								

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)
17.45-18.00									
B-C	0.42	7.61	0.055		0.06	0.06	0.9		0.14
B-AD	2.85	7.63	0.374		0.59	0.59	8.9		0.21
A-BCD	1.00	10.97	0.091		0.12	0.12	1.8		0.10
A-B	0.00								
A-C	1.37								
D-ABC	1.47	11.12	0.132		0.15	0.15	2.3		0.10
C-ABD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
C-D	0.33								
C-A	1.20								

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
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1

QUEUE FOR STREAM B-AD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.6	*
17.30	0.6	*
17.45	0.6	*
18.00	0.6	*

QUEUE FOR STREAM A-BCD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.2
17.30	0.2
17.45	0.2
18.00	0.2

QUEUE FOR STREAM C-ABD

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-C	25.0	25.0	3.4	0.14	3.4	0.14
B-AD	171.2	171.2	34.8	0.20	34.8	0.20
A-BCD	60.2	60.2	7.1	0.12	7.1	0.12
A-B	0.0	0.0				
A-C	82.0	82.0				
D-ABC	88.2	88.2	9.0	0.10	9.0	0.10
C-ABD	0.0	0.0	0.0	0.00	0.0	0.00
C-D	20.0	20.0				
C-A	71.8	71.8				
ALL	518.4	518.4	54.4	0.10	54.4	0.10

* 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

.SLOPES AND INTERCPET

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

will be adjusted)

B-C Stream

Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
632.05	0.22	0.22	0.09	0.09

B-AD Stream

Intercept For Stream B-AD	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
490.77	0.20	0.20	0.08	0.08

Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream C-B	Slope For Opposing
0.13	0.13	0.29	

D-A Stream

Intercept For Stream D-A	Slope For Opposing Stream C-A	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
736.85	0.26	0.26	0.10	0.10

D-BC Stream

Intercept For Stream D-BC	Slope For Opposing Stream C-A	Slope For Opposing Stream B-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-D
575.12	0.24	0.24	0.09	0.09

Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream A-D	Slope For Opposing
0.15	0.15	0.34	

C-B Stream

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-C	Slope For Opposing Stream D-B
689.79	0.24	0.24	0.24	0.24

A-D Stream

Intercept For Stream A-D	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-A	Slope For Opposing Stream B-D
689.79	0.24	0.24	0.24	0.24

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

Demand set: AM PEAK 2017 + DEVT SCENARIO 2

TIME PERIOD BEGINS 17.00 AND ENDS 18.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
17.00 - 18.00	ARM A	0.000	0.000	0.635	0.365
		0.0	0.0	94.0	54.0
		(0.0)	(0.0)	(4.0)	(4.0)
	ARM B	0.240	0.000	0.123	0.637
		49.0	0.0	25.0	130.0
		(0.0)	(0.0)	(21.0)	(0.0)
	ARM C	0.789	0.000	0.000	0.211
		75.0	0.0	0.0	20.0
		(10.0)	(0.0)	(0.0)	(9.0)
	ARM D	0.967	0.000	0.033	0.000
		89.0	0.0	3.0	0.0
		(2.0)	(0.0)	(0.0)	(0.0)

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 AM PEAK 2017 + DEVT SCENARIO 2
AND FOR TIME PERIOD 1

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)
17.00-17.15									
B-C	0.42	7.57	0.055		0.00	0.06	0.8		0.14
B-AD	2.98	7.61	0.392		0.00	0.63	8.8		0.21
A-BCD	1.05	10.98	0.095		0.00	0.12	1.9		0.10
A-B	0.00								
A-C	1.42								
D-ABC	1.53	11.10	0.138		0.00	0.16	2.3		0.10
C-ABD	0.00	10.08	0.000		0.00	0.00	0.0		0.00
C-D	0.33								
C-A	1.25								

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)
17.15-17.30									
B-C	0.42	7.56	0.055		0.06	0.06	0.9		0.14
B-AD	2.98	7.61	0.392		0.63	0.64	9.5		0.22
A-BCD	1.05	10.97	0.096		0.12	0.13	1.9		0.10
A-B	0.00								
A-C	1.42								
D-ABC	1.53	11.10	0.138		0.16	0.16	2.4		0.10
C-ABD	0.00	10.08	0.000		0.00	0.00	0.0		0.00
C-D	0.33								
C-A	1.25								

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)
17.30-17.45									
B-C	0.42	7.56	0.055		0.06	0.06	0.9		0.14
B-AD	2.98	7.61	0.392		0.64	0.64	9.6		0.22
A-BCD	1.05	10.97	0.096		0.13	0.13	1.9		0.10
A-B	0.00								
A-C	1.42								
D-ABC	1.53	11.10	0.138		0.16	0.16	2.4		0.10
C-ABD	0.00	10.08	0.000		0.00	0.00	0.0		0.00
C-D	0.33								
C-A	1.25								

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)
17.45-18.00									
B-C	0.42	7.56	0.055		0.06	0.06	0.9		0.14
B-AD	2.98	7.61	0.392		0.64	0.64	9.6		0.22
A-BCD	1.05	10.97	0.096		0.13	0.13	1.9		0.10
A-B	0.00								
A-C	1.42								
D-ABC	1.53	11.10	0.138		0.16	0.16	2.4		0.10
C-ABD	0.00	10.08	0.000		0.00	0.00	0.0		0.00
C-D	0.33								
C-A	1.25								

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
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1

QUEUE FOR STREAM B-AD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.6	*
17.30	0.6	*
17.45	0.6	*
18.00	0.6	*

QUEUE FOR STREAM A-BCD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.2
17.30	0.2
17.45	0.2
18.00	0.2

QUEUE FOR STREAM C-ABD

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-C	25.0	25.0	3.4	0.14	3.4	0.14
B-AD	179.0	179.0	37.5	0.21	37.6	0.21
A-BCD	62.9	62.9	7.5	0.12	7.5	0.12
A-B	0.0	0.0				
A-C	85.3	85.3				
D-ABC	91.8	91.8	9.5	0.10	9.5	0.10
C-ABD	0.0	0.0	0.0	0.00	0.0	0.00
C-D	20.0	20.0				
C-A	74.8	74.8				
ALL	538.8	538.8	58.0	0.11	58.0	0.11

* 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

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

[Printed at 11:29:41 on 19/07/2012]

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-C	19.0	19.0	2.3	0.12	2.3	0.12
B-AD	108.2	108.2	18.9	0.18	19.0	0.18
A-BCD	53.3	53.3	6.6	0.12	6.6	0.12
A-B	0.0	0.0				
A-C	54.7	54.7				
D-ABC	184.8	184.8	23.5	0.13	23.5	0.13
C-ABD	0.0	0.0	0.0	0.00	0.0	0.00
C-D	26.9	26.9				
C-A	76.9	76.9				
ALL	523.8	523.8	51.3	0.10	51.3	0.10

* 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

.SLOPES AND INTERCPET

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

will be adjusted)

B-C Stream

Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
632.05	0.22	0.22	0.09	0.09

B-AD Stream

Intercept For Stream B-AD	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
490.77	0.20	0.20	0.08	0.08

Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream C-B	Slope For Opposing
0.13	0.13	0.29	

D-A Stream

Intercept For Stream D-A	Slope For Opposing Stream C-A	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
736.85	0.26	0.26	0.10	0.10

D-BC Stream

Intercept For Stream D-BC	Slope For Opposing Stream C-A	Slope For Opposing Stream B-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-D
575.12	0.24	0.24	0.09	0.09

Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream A-D	Slope For Opposing
0.15	0.15	0.34	

C-B Stream

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-C	Slope For Opposing Stream D-B
689.79	0.24	0.24	0.24	0.24

A-D Stream

Intercept For Stream A-D	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-A	Slope For Opposing Stream B-D
689.79	0.24	0.24	0.24	0.24

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

Demand set: AM PEAK 2013 + DEVT SCENARIO 1

TIME PERIOD BEGINS 08.00 AND ENDS 09.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
08.00 - 09.00	ARM A	0.000	0.000	0.593	0.407
		0.0	0.0	67.0	46.0
		(0.0)	(0.0)	(20.0)	(13.0)
	ARM B	0.256	0.000	0.194	0.550
		33.0	0.0	25.0	71.0
		(12.0)	(0.0)	(15.0)	(0.0)
	ARM C	0.714	0.000	0.000	0.286
		80.0	0.0	0.0	32.0
		(8.0)	(0.0)	(0.0)	(22.0)
	ARM D	0.944	0.000	0.056	0.000
		167.0	0.0	10.0	0.0
		(4.0)	(0.0)	(20.0)	(0.0)

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 AM PEAK 2013 + DEVT SCENARIO 1
AND FOR TIME PERIOD 1

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)
08.00-08.15									
B-C	0.42	8.34	0.050		0.00	0.05	0.8		0.13
B-AD	1.73	7.32	0.237		0.00	0.31	4.4		0.18
A-BCD	0.86	10.04	0.086		0.00	0.11	1.6		0.11
A-B	0.00								
A-C	1.02								
D-ABC	2.95	10.76	0.274		0.00	0.37	5.4		0.13
C-ABD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
C-D	0.53								
C-A	1.34								

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)
08.15-08.30									
B-C	0.42	8.33	0.050		0.05	0.05	0.8		0.13
B-AD	1.73	7.32	0.237		0.31	0.31	4.6		0.18
A-BCD	0.86	10.04	0.086		0.11	0.11	1.6		0.11
A-B	0.00								
A-C	1.02								
D-ABC	2.95	10.76	0.274		0.37	0.38	5.6		0.13
C-ABD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
C-D	0.53								
C-A	1.34								

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)
08.30-08.45									
B-C	0.42	8.33	0.050		0.05	0.05	0.8		0.13
B-AD	1.73	7.32	0.237		0.31	0.31	4.6		0.18
A-BCD	0.86	10.04	0.086		0.11	0.11	1.6		0.11
A-B	0.00								
A-C	1.02								
D-ABC	2.95	10.76	0.274		0.38	0.38	5.6		0.13
C-ABD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
C-D	0.53								
C-A	1.34								

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)
08.45-09.00									
B-C	0.42	8.33	0.050		0.05	0.05	0.8		0.13
B-AD	1.73	7.32	0.237		0.31	0.31	4.6		0.18
A-BCD	0.86	10.04	0.086		0.11	0.11	1.6		0.11
A-B	0.00								
A-C	1.02								
D-ABC	2.95	10.76	0.274		0.38	0.38	5.6		0.13
C-ABD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
C-D	0.53								
C-A	1.34								

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
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1

QUEUE FOR STREAM B-AD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.3
08.30	0.3
08.45	0.3
09.00	0.3

QUEUE FOR STREAM A-BCD

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

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.4
08.30	0.4
08.45	0.4
09.00	0.4

QUEUE FOR STREAM C-ABD

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-C	25.0	25.0	3.1	0.12	3.1	0.12
B-AD	104.0	104.0	18.2	0.18	18.2	0.18
A-BCD	51.6	51.6	6.5	0.13	6.5	0.13
A-B	0.0	0.0				
A-C	61.2	61.2				
D-ABC	177.0	177.0	22.3	0.13	22.3	0.13
C-ABD	0.0	0.0	0.0	0.00	0.0	0.00
C-D	32.1	32.1				
C-A	80.1	80.1				
ALL	531.0	531.0	50.1	0.09	50.1	0.09

* 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

.SLOPES AND INTERCPET

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

will be adjusted)

B-C Stream

Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
632.05	0.22	0.22	0.09	0.09

B-AD Stream

Intercept For Stream B-AD	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
490.77	0.20	0.20	0.08	0.08

Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream C-B	Slope For Opposing
0.13	0.13	0.29	

D-A Stream

Intercept For Stream D-A	Slope For Opposing Stream C-A	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
736.85	0.26	0.26	0.10	0.10

D-BC Stream

Intercept For Stream D-BC	Slope For Opposing Stream C-A	Slope For Opposing Stream B-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-D
575.12	0.24	0.24	0.09	0.09

Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream A-D	Slope For Opposing
0.15	0.15	0.34	

C-B Stream

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-C	Slope For Opposing Stream D-B
689.79	0.24	0.24	0.24	0.24

A-D Stream

Intercept For Stream A-D	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-A	Slope For Opposing Stream B-D
689.79	0.24	0.24	0.24	0.24

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

Demand set: AM PEAK 2017 + DEVT SCENARIO 1

TIME PERIOD BEGINS 08.00 AND ENDS 09.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
08.00 - 09.00	ARM A	0.000	0.000	0.590	0.410
		0.0	0.0	69.0	48.0
		(0.0)	(0.0)	(19.0)	(13.0)
	ARM B	0.256	0.000	0.188	0.556
		34.0	0.0	25.0	74.0
		(12.0)	(0.0)	(15.0)	(0.0)
	ARM C	0.716	0.000	0.000	0.284
		83.0	0.0	0.0	33.0
		(8.0)	(0.0)	(0.0)	(22.0)
	ARM D	0.946	0.000	0.054	0.000
		175.0	0.0	10.0	0.0
		(4.0)	(0.0)	(20.0)	(0.0)

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 AM PEAK 2017 + DEVT SCENARIO 1
AND FOR TIME PERIOD 1

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)
08.00-08.15									
B-C	0.42	8.31	0.050		0.00	0.05	0.8		0.13
B-AD	1.80	7.30	0.247		0.00	0.32	4.6		0.18
A-BCD	0.90	10.04	0.090		0.00	0.11	1.7		0.11
A-B	0.00								
A-C	1.05								
D-ABC	3.08	10.75	0.286		0.00	0.40	5.7		0.13
C-ABD	0.00	10.11	0.000		0.00	0.00	0.0		0.00
C-D	0.55								
C-A	1.38								

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)
08.15-08.30									
B-C	0.42	8.30	0.050		0.05	0.05	0.8		0.13
B-AD	1.80	7.30	0.247		0.32	0.33	4.9		0.18
A-BCD	0.90	10.03	0.090		0.11	0.11	1.7		0.11
A-B	0.00								
A-C	1.05								
D-ABC	3.08	10.75	0.287		0.40	0.40	6.0		0.13
C-ABD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
C-D	0.55								
C-A	1.38								

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)
08.30-08.45									
B-C	0.42	8.30	0.050		0.05	0.05	0.8		0.13
B-AD	1.80	7.30	0.247		0.33	0.33	4.9		0.18
A-BCD	0.90	10.03	0.090		0.11	0.11	1.7		0.11
A-B	0.00								
A-C	1.05								
D-ABC	3.08	10.75	0.287		0.40	0.40	6.0		0.13
C-ABD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
C-D	0.55								
C-A	1.38								

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)
08.45-09.00									
B-C	0.42	8.30	0.050		0.05	0.05	0.8		0.13
B-AD	1.80	7.30	0.247		0.33	0.33	4.9		0.18
A-BCD	0.90	10.03	0.090		0.11	0.11	1.7		0.11
A-B	0.00								
A-C	1.05								
D-ABC	3.08	10.75	0.287		0.40	0.40	6.0		0.13
C-ABD	0.00	10.10	0.000		0.00	0.00	0.0		0.00
C-D	0.55								
C-A	1.38								

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
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1

QUEUE FOR STREAM B-AD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.3
08.30	0.3
08.45	0.3
09.00	0.3

QUEUE FOR STREAM A-BCD

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

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.4
08.30	0.4
08.45	0.4
09.00	0.4

QUEUE FOR STREAM C-ABD

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-C	25.0	25.0	3.1	0.13	3.1	0.13
B-AD	108.2	108.2	19.2	0.18	19.2	0.18
A-BCD	54.1	54.1	6.8	0.13	6.8	0.13
A-B	0.0	0.0				
A-C	62.9	62.9				
D-ABC	184.8	184.8	23.7	0.13	23.7	0.13
C-ABD	0.0	0.0	0.0	0.00	0.0	0.00
C-D	32.9	32.9				
C-A	82.9	82.9				
ALL	550.8	550.8	52.9	0.10	52.9	0.10

* 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

.SLOPES AND INTERCPET

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

will be adjusted)

B-C Stream

Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
632.05	0.22	0.22	0.09	0.09

B-AD Stream

Intercept For Stream B-AD	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
490.77	0.20	0.20	0.08	0.08

Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream C-B	Slope For Opposing
0.13	0.13	0.29	

D-A Stream

Intercept For Stream D-A	Slope For Opposing Stream C-A	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
736.85	0.26	0.26	0.10	0.10

D-BC Stream

Intercept For Stream D-BC	Slope For Opposing Stream C-A	Slope For Opposing Stream B-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-D
575.12	0.24	0.24	0.09	0.09

Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream A-D	Slope For Opposing
0.15	0.15	0.34	

C-B Stream

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-C	Slope For Opposing Stream D-B
689.79	0.24	0.24	0.24	0.24

A-D Stream

Intercept For Stream A-D	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-A	Slope For Opposing Stream B-D
689.79	0.24	0.24	0.24	0.24

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

Demand set: AM PEAK 2013 + DEVT SCENARIO 2

TIME PERIOD BEGINS 08.00 AND ENDS 09.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
08.00 - 09.00	ARM A	0.000	0.000	0.582	0.418
		0.0	0.0	64.0	46.0
		(0.0)	(0.0)	(15.0)	(13.0)
	ARM B	0.250	0.000	0.212	0.538
		33.0	0.0	28.0	71.0
		(12.0)	(0.0)	(26.0)	(0.0)
	ARM C	0.743	0.000	0.000	0.257
		84.0	0.0	0.0	29.0
		(12.0)	(0.0)	(0.0)	(13.0)
	ARM D	0.944	0.000	0.056	0.000
		167.0	0.0	10.0	0.0
		(4.0)	(0.0)	(20.0)	(0.0)

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 AM PEAK 2013 + DEVT SCENARIO 2
AND FOR TIME PERIOD 1

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)
08.00-08.15									
B-C	0.47	7.63	0.061		0.00	0.06	0.9		0.14
B-AD	1.73	7.34	0.236		0.00	0.30	4.3		0.18
A-BCD	0.85	10.02	0.085		0.00	0.11	1.6		0.11
A-B	0.00								
A-C	0.98								
D-ABC	2.95	10.74	0.275		0.00	0.37	5.4		0.13
C-ABD	0.00	10.14	0.000		0.00	0.00	0.0		0.00
C-D	0.48								
C-A	1.40								

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)
08.15-08.30									
B-C	0.47	7.62	0.061		0.06	0.06	1.0		0.14
B-AD	1.73	7.34	0.236		0.30	0.31	4.6		0.18
A-BCD	0.86	10.02	0.085		0.11	0.11	1.6		0.11
A-B	0.00								
A-C	0.97								
D-ABC	2.95	10.74	0.275		0.37	0.38	5.6		0.13
C-ABD	0.00	10.14	0.000		0.00	0.00	0.0		0.00
C-D	0.48								
C-A	1.40								

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)
08.30-08.45									
B-C	0.47	7.62	0.061		0.06	0.06	1.0		0.14
B-AD	1.73	7.34	0.236		0.31	0.31	4.6		0.18
A-BCD	0.86	10.02	0.085		0.11	0.11	1.6		0.11
A-B	0.00								
A-C	0.97								
D-ABC	2.95	10.74	0.275		0.38	0.38	5.7		0.13
C-ABD	0.00	10.14	0.000		0.00	0.00	0.0		0.00
C-D	0.48								
C-A	1.40								

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)
08.45-09.00									
B-C	0.47	7.62	0.061		0.06	0.07	1.0		0.14
B-AD	1.73	7.34	0.236		0.31	0.31	4.6		0.18
A-BCD	0.86	10.02	0.085		0.11	0.11	1.6		0.11
A-B	0.00								
A-C	0.97								
D-ABC	2.95	10.74	0.275		0.38	0.38	5.7		0.13
C-ABD	0.00	10.14	0.000		0.00	0.00	0.0		0.00
C-D	0.48								
C-A	1.40								

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
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1

QUEUE FOR STREAM B-AD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.3
08.30	0.3
08.45	0.3
09.00	0.3

QUEUE FOR STREAM A-BCD

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

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.4
08.30	0.4
08.45	0.4
09.00	0.4

QUEUE FOR STREAM C-ABD

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-C	28.0	28.0	3.9	0.14	3.9	0.14
B-AD	104.0	104.0	18.2	0.17	18.2	0.17
A-BCD	51.3	51.3	6.4	0.12	6.4	0.12
A-B	0.0	0.0				
A-C	58.5	58.5				
D-ABC	177.0	177.0	22.3	0.13	22.3	0.13
C-ABD	0.0	0.0	0.0	0.00	0.0	0.00
C-D	28.9	28.9				
C-A	83.9	83.9				
ALL	531.6	531.6	50.7	0.10	50.8	0.10

* 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

.SLOPES AND INTERCPET

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

will be adjusted)

B-C Stream

Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
632.05	0.22	0.22	0.09	0.09

B-AD Stream

Intercept For Stream B-AD	Slope For Opposing Stream A-C	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
490.77	0.20	0.20	0.08	0.08

Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream C-B	Slope For Opposing
0.13	0.13	0.29	

D-A Stream

Intercept For Stream D-A	Slope For Opposing Stream C-A	Slope For Opposing Stream D-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-B
736.85	0.26	0.26	0.10	0.10

D-BC Stream

Intercept For Stream D-BC	Slope For Opposing Stream C-A	Slope For Opposing Stream B-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-D
575.12	0.24	0.24	0.09	0.09

Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream A-D	Slope For Opposing
0.15	0.15	0.34	

C-B Stream

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream D-C	Slope For Opposing Stream D-B
689.79	0.24	0.24	0.24	0.24

A-D Stream

Intercept For Stream A-D	Slope For Opposing Stream C-A	Slope For Opposing Stream C-D	Slope For Opposing Stream B-A	Slope For Opposing Stream B-D
689.79	0.24	0.24	0.24	0.24

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

Demand set: AM PEAK 2017 + DEVT SCENARIO 2

TIME PERIOD BEGINS 08.00 AND ENDS 09.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
08.00 - 09.00	ARM A	0.000	0.000	0.579	0.421
		0.0	0.0	66.0	48.0
		(0.0)	(0.0)	(15.0)	(13.0)
	ARM B	0.250	0.000	0.206	0.544
		34.0	0.0	28.0	74.0
		(12.0)	(0.0)	(26.0)	(0.0)
	ARM C	0.744	0.000	0.000	0.256
		87.0	0.0	0.0	30.0
		(12.0)	(0.0)	(0.0)	(13.0)
	ARM D	0.946	0.000	0.054	0.000
		175.0	0.0	10.0	0.0
		(4.0)	(0.0)	(20.0)	(0.0)

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 AM PEAK 2017 + DEVT SCENARIO 2
AND FOR TIME PERIOD 1

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)
08.00-08.15									
B-C	0.47	7.60	0.061		0.00	0.06	0.9		0.14
B-AD	1.80	7.32	0.246		0.00	0.32	4.6		0.18
A-BCD	0.90	10.01	0.090		0.00	0.11	1.7		0.11
A-B	0.00								
A-C	1.00								
D-ABC	3.08	10.73	0.287		0.00	0.40	5.7		0.13
C-ABD	0.00	10.13	0.000		0.00	0.00	0.0		0.00
C-D	0.50								
C-A	1.45								

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)
08.15-08.30									
B-C	0.47	7.60	0.062		0.06	0.07	1.0		0.14
B-AD	1.80	7.32	0.246		0.32	0.32	4.8		0.18
A-BCD	0.90	10.01	0.090		0.11	0.11	1.7		0.11
A-B	0.00								
A-C	1.00								
D-ABC	3.08	10.73	0.287		0.40	0.40	6.0		0.13
C-ABD	0.00	10.13	0.000		0.00	0.00	0.0		0.00
C-D	0.50								
C-A	1.45								

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)
08.30-08.45									
B-C	0.47	7.60	0.062		0.07	0.07	1.0		0.14
B-AD	1.80	7.32	0.246		0.32	0.32	4.9		0.18
A-BCD	0.90	10.01	0.090		0.11	0.11	1.7		0.11
A-B	0.00								
A-C	1.00								
D-ABC	3.08	10.73	0.287		0.40	0.40	6.0		0.13
C-ABD	0.00	10.13	0.000		0.00	0.00	0.0		0.00
C-D	0.50								
C-A	1.45								

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)
08.45-09.00									
B-C	0.47	7.60	0.062		0.07	0.07	1.0		0.14
B-AD	1.80	7.32	0.246		0.32	0.33	4.9		0.18
A-BCD	0.90	10.01	0.090		0.11	0.11	1.7		0.11
A-B	0.00								
A-C	1.00								
D-ABC	3.08	10.73	0.287		0.40	0.40	6.0		0.13
C-ABD	0.00	10.13	0.000		0.00	0.00	0.0		0.00
C-D	0.50								
C-A	1.45								

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
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1

QUEUE FOR STREAM B-AD

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.3
08.30	0.3
08.45	0.3
09.00	0.3

QUEUE FOR STREAM A-BCD

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

QUEUE FOR STREAM D-ABC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.4
08.30	0.4
08.45	0.4
09.00	0.4

QUEUE FOR STREAM C-ABD

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-C	28.0	28.0	3.9	0.14	3.9	0.14
B-AD	108.2	108.2	19.2	0.18	19.2	0.18
A-BCD	53.9	53.9	6.8	0.13	6.8	0.13
A-B	0.0	0.0				
A-C	60.1	60.1				
D-ABC	184.8	184.8	23.7	0.13	23.8	0.13
C-ABD	0.0	0.0	0.0	0.00	0.0	0.00
C-D	30.0	30.0				
C-A	87.0	87.0				
ALL	552.0	552.0	53.6	0.10	53.6	0.10

* 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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