MEASURING SIDE STREET DELAY

AT INTERSECTIONS

FOR USE IN

APPLYING

THE PEAK HOUR DELAY

TRAFFIC SIGNAL WARRANT

PROCEDURE

This method involves the manual counting of vehicles stopped on an intersection approach at successive 15 second intervals. The sample field sheet shown as Figure 1 is arranged for a 15 second time interval and enough intervals are provided to measure for up to 68 minutes.

Before the start of the study, the identifying information is entered in the appropriate places on the field sheet, and the first column is completed to indicate the starting time in minutes for the indicated succession of sampling time intervals. These starting times are selected to provide a continuous process of data collection. The study is performed continuously during the peak hour.

When the starting time arrives, the observer counts and records the number of vehicles stopped on the approach for each observation time indicated. The stop watch is started at the beginning of the study to advise the observer of the proper intervals for counting the stopped vehicles. A vehicle is counted more than once in the delay determination if it is stopped during more than one sampling time. That is, a particular vehicle will continue to be counted in all sample time periods during which it remains stopped on the intersection approach.

The peak hour data is reduced by totaling each of the eight data columns and entering the totals in the sub-total spaces. The eight subtotals are then summed and the total entered in the space for total.

The total delay for use in the warrant is then calculated as:

Total Delay = Total Number Stopped X 15 Sec. ÷ 3600 Sec./Hour.

See figure 2 for a sample of collected data and calculated delay.

The above procedure is a modification of one described in the Manual of Traffic Engineering Studies; Institute of Transportation Engineers, Fourth Edition; Chapter 8.

This procedure is appropriate for use at intersections controlled by STOP signs and at signalized intersections controlled by traffic actuated controllers.

INTERSECTION DELAY STUDY

FIELD SHEET

LOCATION _____   APPROACH _____

_____   OBSERVER _____

_____   DATE _____

NUMBER OF LANES ON APPROACH _____

TIME	TOTAL NO. VEH. STOPPED IN APP. AT TIME				TIME	TOTAL NO. VEH. STOPPED IN APP. AT TIME			
	+0 SEC	+15SEC	+30SEC	+45SEC		+0 SEC	+15SEC	+30SEC	+45SEC
SUBTOTAL					SUBTOTAL				
TOTAL									

Total Delay (Veh-Hour) = Total Number Stopped X Sampling Interval (Sec.) ÷3600

= _____ x 15 ÷ 3600 = _____ Veh-Hour

FIELD SHEET

LOCATION __US 64 & LAURA DUNCAN RD__ APPROACH __FROM SOUTH__
__APEX__ OBSERVER __WJW__
 DATE __11/15/84__

2 app lanes A.M.

TIME	TOTAL NO. VEH. STOPPED IN APP. AT TIME				TIME	TOTAL NO. VEH. STOPPED IN APP. AT TIME			
	+0 SEC	+15SEC	+30SEC	+45SEC		+0 SEC	+15SEC	+30SEC	+45SEC
7+15	0	0	2	1	7+45	1		4	5
+16	1		2	1	+46	6	4	4	3
+17	1	2	0	0	+47	2	2	2	2
+18	0	2	2		+48	3	3	2	3
+19	0	0	2		+49	6	6	5	4
+20	5	4	3		+50	4	5	8	9
+21	0	0	0	0	+51	10	10	12	12
+22	0	0	0	0	52	12	9	5	5
+23	0	0	0	0	53	0	1	0	0
+24	0	0	0	0	54	0	0	0	0
+25	0	0	0		55	0	0	0	0
+26	0	0	0	1	56		2	2	0
+27	0	0			57	0		0	0
+28	1	0			58	0	1	0	0
+29		2		2	59	0	0	0	0
+30	3	4	3	3	8+00	0	0	0	0
+31	3	2	2		+01	0	0	0	0
+32	2	2	2	2	02	0	1	0	0
+33	2	2	2	2	03	0	0	1	0
+34	2	2	0	0	04	0	0	0	0
+35	0	0	0		05	0	0	0	2
+36	2	4	0	1	06	0	0	0	1
+37	0	0	0		07	0	0	0	0
+38	0	0	0	0	08	0	0	0	0
+39	0	0	0	0	09	0	0	1	0
+40	0	2	2	2	10	0	0	0	0
+41	1	2	2		11	0	0	0	0
+42	1	2	3	4	12	0	0	0	0
+43	4	2	2	2	13	0	0	0	0
+44	2	3	1	1	14	0	0	0	0
SUBTOTAL		39		34	SUBTOTAL	50	47	47	48
TOTAL			327						

Total Delay (Veh-Hour) = Total Number Stopped X Sampling Interval (Sec.) ÷3600

= __327__ ⁄ _____ x 15 ÷ 3600 = __1.4 ±__ Veh-Hour