3 T		327		327	4	1910	34		0.483	25.0	104
4 TR		210	110	320	5	1911	34	2	0.483	23.6	92
	210	864	110	1184	4				0.535	28.2	104
South: AVE. LA CEIBA											
1 L	115			115	2	1911	21		0.373	43.2	43
2 T		85		85	1	1911	26		0.159	27.7	28
3 R			213	213	3	1911	45	26	0.242	11.6	23
	115	85	213	413	2				0.373	23.7	43
East: PR-1 MERCEDITA											
1 L	193			193	4	1910	20		0.505	45.0	73
100											
2 T		527		527	2	1910	34		0.761	29.2	178
3 T		527		527	2	1910	34		0.761	29.2	178
4 T		527		527	2	1910	34		0.761	29.2	178
5 R			782	782	1	1910	34	38	0.754	15.4	180
	193	1580	782	2555	2				0.761	26.2	180
North: AVE. LA CEIBA											
1 L	185			185	2	1910	23		0.571	43.3	70
2 L	185			185	2	1911	23		0.571	43.3	70
3 TR		75	162	237	0	1911	8	26	0.419	20.4	44
	369	75	162	606	2				0.571	34.3	70

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	4758	2	92	0.762	27.5	180

Total flow period = 60 minutes. Peak flow period = 15 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows (in through car units) have been adjusted for grade, lane widths, parking manoeuvres and bus stops.

Finca Barranca - Ponce, P.R.
Int. PR-1 & Ave. La Ceiba, AM Proyectado

Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 92

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio 1st grn	Green Ratio 2nd grn	Time (g/C)	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
West: PR-1 PONCE									
12	L	0.217*			210	393	0.535	45.1	D
11	T	0.370			864	1787	0.483	23.9	C
13	R (Un2)	0.370	0.446		110	227	0.484	29.7	C
					1184	2407	0.535	28.2	C
South: AVE. LA CEIBA									
32	L	0.228			115	308	0.373	43.2	D
31	T	0.283			85	534	0.159	27.7	C
33	R (Un1)	0.489	0.283		213	879	0.242	11.6	B
					413	1720	0.373	23.7	C
East: PR-1 MERCEDITA									
22	L	0.217			193	382	0.505	45.0	D
21	T	0.370			1580	2075	0.762*	29.2	C
23	R (Un2)	0.370*	0.413		782	1037	0.754	15.4	B
					2555	3494	0.762	26.2	C
North: AVE. LA CEIBA									
42	L	0.250*			369	647	0.571	43.3	D
41	T	0.283			75	179	0.419	14.2	B
43	R (Un1)	0.380	0.283		162	387	0.418	23.2	C
					606	1213	0.571	34.3	C
ALL VEHICLES:					4758	8835	0.762	27.5	C
INTERSECTION (persons):					7137	8835	0.762	27.5	

Level of Service calculations are based on
average control delay including geometric delay (HCM criteria) and v/c ratio,
independent of the current delay definition used.
For the criteria, refer to the "Level of Service" topic in the aaSIDRA Output Guide or the Output section of the on-line help.
* Maximum v/c ratio, or critical green periods

Finca Barranca - Ponce, P.R.
Int. PR-1 & Ave. La Ceiba, AM Proyectado

Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 92

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
West: PR-1 PONCE						
	South	10.0	18.3	15.7	500	110
	East	S	60.0	25.5	500	110
	North	15.6	23.1	24.6	500	105
South: AVE. LA CEIBA						
	West	16.3	23.5	25.6	500	107
	East	10.0	18.4	15.7	500	105
	North	S	60.0	34.8	500	107
East: PR-1 MERCEDITA						
	West	S	60.0	25.5	500	108
	South	15.6	23.0	24.6	500	109
	North	10.0	18.5	15.7	500	103
North: AVE. LA CEIBA						
	West	10.0	18.5	15.7	500	103
	South	S	60.0	34.8	500	106
	East	19.8	25.9	31.1	500	111

Downstream distance is distance travelled from the stopline until exit
cruise speed is reached (includes negotiation distance). Acceleration
distance is weighted for light and heavy vehicles. The same distance
applies for both stopped and unstopped vehicles.

--- End of aaSIDRA Output ---

Akcelik & Associates Pty Ltd - aaSIDRA 2.0.1.206

Csa Group Inc
Csa Group Systems Registered User No.
*** UNREGISTERED VERSION ***

Time and Date of Analysis 10:09 AM, Jun 5,2003

Filename: F:\Francisco\PROYECTOS\Barranca\SIDRA\PR-1PMF.OUT

Finca Barranca - Ponce, P.R.
Int. PR-1 & Ave. La Ceiba, PM Proyectado
Intersection ID:

aaTraffic SIDRA US Highway Capacity Manual (2000) Metric Version

RUN INFORMATION

* Basic Parameters:
  Intersection Type: Signalised - Actuated Isolated
  For fully-actuated signal timings, the following specifications will be ignored:
    Any maximum cycle time specification
    Any user-given cycle time (unless phase times also given)
    User-given cycle and phase times (if variable flow scale run)
    Any variable cycle time specification
    Any green split priority specification
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 10
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Total Flow Period)
  Delay definition: Control delay
                    Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay and degree of saturation
  Queue definition: Back of queue, 95th Percentile

* No. of Main (Timing-Capacity) Iterations = 3
  Comparison of last two iterations:
    Difference in intersection degree of satn = 1.0 %
    Difference in total vehicle capacity = 0.4 %
    Largest difference in eff. green times = 1 secs
    (max. value for stopping = 1 secs)
  Information on Previous Iteration:
    Cycle Time = 108
    Phase Times: 0, 24, 63
    Critical Movements: 12, 23(1st), 42

Finca Barranca - Ponce, P.R.
Int. PR-1 & Ave. La Ceiba, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***

DEFAULT PARAMETERS

Default values for some of the important general parameters:
(Default Values File: DEF10.SDF)

1. Basic saturation flow: 1900 tcu/h

This value applies mainly to signalised intersections. For roundabouts and sign-controlled intersections, it is used for determining capacity of priority and continuous movements.

2. Through car equivalents for signalised intersections

	LEFT		THROUGH		RIGHT	
	LV	HV	LV	HV	LV	HV
Normal	1.053	2.000	1.000	2.000	1.176	2.000
Restricted	1.303	2.500			1.426	2.500

3. Opposed turn parameters (Signalised intersection)

	Crit. Gap	Fol.up Hdway	Deps at End	% Exit Flow Opposing
Left turns :	4.5	2.5	2.0	0
Right turns:	4.0	2.4	2.5	0

4. Cruise speed= 65 km/h, Approach Distance= 500 m

5. Queue space per vehicle in metres
Light vehicles: 7.6 Heavy vehicles: 14.0

A full list of input data defaults and ranges is given in the Input Guide part of aaSIDRA User Guide.

Finca Barranca - Ponce, P.R.
Int. PR-1 & Ave. La Ceiba, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 109

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
	LV	HV	LV	HV	LV	HV		

VEHICLES Demand flows in veh/hour as used by the program
West: PR-1 PONCE

12	242	3	0	0	0	0	1.00	0.95
11	0	0	1172	42	0	0	1.00	0.95
13	0	0	0	0	107	1	1.00	0.95

South: AVE. LA CEIBA

32	107	0	0	0	0	0	1.00	0.95
31	0	0	58	1	0	0	1.00	0.95
33	0	0	0	0	229	7	1.00	0.95

East: PR-1 MERCEDITA

22	196	3	0	0	0	0	1.00	0.95
21	0	0	1120	38	0	0	1.00	0.95
23	0	0	0	0	725	11	1.00	0.95

North: AVE. LA CEIBA

42	694	9	0	0	0	0	1.00	0.95
41	0	0	78	2	0	0	1.00	0.95
43	0	0	0	0	326	4	1.00	0.95

Based on unit time = 60 minutes.
Flow Scale and Peak Hour Factor effects included in flow values.

Finca Barranca - Ponce, P.R.
Int. PR-1 & Ave. La Ceiba, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 109

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	P H A S E M A T R I X First Green Fr To Op Pr	Second Green Fr To Op Pr	Lost Tim 1st Grn	2nd Grn	Req.Mov.Time 1st Grn	2nd Grn	Eff. Grn 1st Grn	2nd Grn
West: PR-1 PONCE									
12	L	*A B		4		24.0	Max	20	
11	T	B C		4		39.4		36	
13	R (Un2)	B C	C B R	4	17	34.7	20.0	Min 36	52

```
South: AVE. LA CEIBA
   32 L        C  A  L                          15        37.3
30
   31 T        C  A                             4         12.6
41
   33 R  (Un1) A  C  R        C  A             27    4   20.0Min  33.3
37   41
-------------------------------------------------------------------------
-------
East: PR-1 MERCEDITA
   22 L        A  B                             4         24.0Max
20
   21 T        B  C                             4         37.0
36
   23 R  (Un2)*B  C          C  B  R            4   20    39.4     47.2
36   49
-------------------------------------------------------------------------
-------
North: AVE. LA CEIBA
   42 L       *C  A  L                          6         45.3
39
   41 T        C  A                             4         37.4
41
   43 R  (Un1) A  C  R        C  A             23    4   20.0Min  38.9
41   41
-------------------------------------------------------------------------
-------
   Current Phase Sequence No.: 1
   Input phase sequence: A  B  C
   Output phase sequence: A  B  C
-------------------------------------------------------------------------
-------

 Movement Types:                                Under heading 'Op':
   Ped  Pedestrian                                L   "Left" turns are
opposed
   Dum  Dummy                                     R   "Right" turns are
opposed
   Und  Undetected in both green periods          LR  "Left and Right"
opposed
   Un1  Undetected in 1st green period            C   "Constant" saturation
flow
   Un2  Undetected in 2nd green period
```

Finca Barranca - Ponce, P.R.
Int. PR-1 & Ave. La Ceiba, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 109

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Dem Flow (veh /h)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
West: PR-1 PONCE										
12 L	245	1795		0.136		329	0.90	21	100	0.744
11 T	1214	5069		0.239		1674	0.90	24	100	0.725
13 R	108	411	28	0.263	0.000	149	0.90	24	100	0.724
South: AVE. LA CEIBA										
32 L	107	1104		0.097		304	0.90	156	100	0.352
31 T	59	1879		0.031		707	0.90	978	24	0.083
33 R	236	937	1591	0.000	0.148	917	0.90	250	73	0.257
East: PR-1 MERCEDITA										
22 L	199	1791		0.111		329	0.90	49	100	0.606
21 T	1158	5550		0.209		1833	0.90	42	100	0.632
23 R	736	1607	1122	0.298	0.229	1035	0.90	27	100	0.711
North: AVE. LA CEIBA										
42 L	703	2427		0.290		868	0.90	11	100	0.810*
41 T	80	387		0.207		146	0.90	64	68	0.550
43 R	330	316	1280	0.000	0.258	600	0.90	64	68	0.550

Finca Barranca - Ponce, P.R.
Int. PR-1 & Ave. La Ceiba, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 109

Table S.3 - INTERSECTION PARAMETERS

Crit Mov No.	App. & Turn	Green Period	Phases Fr	Phases To	Adjusted Lost Time	Adjusted Flow Ratio	Required Grn Time Ratio	Required Movement Time
12	W_L		A	B	24	-	-	24.0Max
23	E_R	1st	B	C	4	0.298	0.325	39.4
42	N_L		C	A	6	0.290	0.361	45.3
				Total:	34	0.588	0.686	108.7

- Flow ratio not used for cycle time calculations and the adjusted lost time equals the required movement time (=Min or Max as shown in Table S.1)

Cycle Time:

Minimum	Maximum	Practical	Chosen
30	NA	109	109

Intersection Level of Service	=	C
Worst movement Level of Service	=	E
Average intersection delay (s)	=	33.8
Largest average movement delay (s)	=	57.5
Largest back of queue, 95% (m)	=	180
Performance Index	=	253.44
Degree of saturation (highest)	=	0.810
Practical Spare Capacity (lowest)	=	11 %
Total vehicle capacity, all lanes (veh/h)	=	8890
Total vehicle flow (veh/h)	=	5175
Total person flow (pers/h)	=	7763
Total vehicle delay (veh-h/h)	=	48.53
Total person delay (pers-h/h)	=	72.79
Total effective vehicle stops (veh/h)	=	4212
Total effective person stops (pers/h)	=	6318
Total vehicle travel (veh-km/h)	=	3133.2
Total cost ($/h)	=	2430.09
Total fuel (L/h)	=	413.2
Total CO2 (kg/h)	=	1033.88

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	20	24	0.220
B	24	28	36	40	0.367
C	64	68	41	45	0.413

Current Phase Sequence No.: 1
Input phase sequence: A B C
Output phase sequence: A B C

Finca Barranca - Ponce, P.R.
Int. PR-1 & Ave. La Ceiba, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 109

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan Deg.	Mov Lane No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	End Cap (veh /h)	Tot Cap (veh /h)	x Satn	Util %
West: PR-1 PONCE													
1 L	12	245	0	0	245	3.65	1911	1795	0	0	329	0.744	100
2 T	11	0	442	0	442	3.65	1911	1847	0	0	610	0.725	100
3 T	11	0	442	0	442	3.65	1911	1847	0	0	610	0.725	100
4 TR	11, 13	0	329	108	437	3.65	1911	1783	777	33	603	0.725	100
South: AVE. LA CEIBA													
1 L	32, 31	107	0	0	107	3.65	1911	1104	0	66	304	0.352	100
2 T	31	0	59	0	59	3.65	1911	1879	0	0	707	0.083	24P
3 R	31, 33	0	0	236	236	3.65	1911	937	1591	33	916	0.258	73P

```
 ------------------------------------------------------------------------
-------
  East: PR-1 MERCEDITA
  1 L     22   199    0    0  199  3.65  1911 1791     0    0  329
0.606  100
  2 T     21     0  386    0  386  3.65  1911 1850     0    0  611
0.632  100
  3 T     21     0  386    0  386  3.65  1911 1850     0    0  611
0.632  100
  4 T     21     0  386    0  386  3.65  1911 1850     0    0  611
0.632  100
  5 R     23     0    0  736  736  3.65  1911 1607  1122   33 1035
0.711  100
 ------------------------------------------------------------------------
-------
  North: AVE. LA CEIBA
  1 L     42   352    0    0  352  3.65  1911 1214     0   66  434
0.810  100
  2 L     42,  352    0    0  352  3.65  1911 1214     0   66  434
0.810  100
          41
  3 TR    41,    0   80  330  410  3.65  1911  842  1654   33  746
0.550   68P
          43
 ------------------------------------------------------------------------
-------
   P  Lane under-utilisation found by the "Program"

   Basic Saturation Flow in this table is adjusted for lane width,
approach
   grade, parking manoeuvres and number of buses stopping.  Saturation
flow
   scale applies if specified.

________________________________________________________________________
_______

 Finca Barranca - Ponce, P.R.
 Int. PR-1 & Ave. La Ceiba, PM Proyectado
 Intersection ID:          *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time = 109


 Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY
 ------------------------------------------------------------------------
------
  Mov     Mov  Dem   Total  Lane  Deg.  Eff. Grn  Aver.  Eff.    95%
Perf.
  No.     Typ  Flow   Cap.  Util  Satn  -------- Delay  Stop  Back of
Index
               (veh  (veh                1st  2nd        Rate   Queue
                /h)   /h)   (%)     x   Grn  Grn  (sec)        (veh)
 ------------------------------------------------------------------------
------
 West: PR-1 PONCE
   12 L         245   329   100  0.744   20*       57.5  0.85   14.8
15.36
```

11	T		1214	1674	100	0.725	36		35.6	0.81	22.9	64.37
13	R	(Un2)	108	149	100	0.724	36	52	43.3	0.88	21.9	5.90
South: AVE. LA CEIBA												
32	L		107	304	100	0.352	30		44.9	0.79	5.8	5.76
31	T		59	707	24	0.083	41		24.0	0.51	2.5	2.38
33	R	(Un1)	236	917	73	0.257	37	41	14.4	0.77	5.3	6.95
East: PR-1 MERCEDITA												
22	L		199	329	100	0.606	20		55.5	0.82	11.8	12.07
21	T		1158	1833	100	0.632	36		35.2	0.77	19.6	59.14
23	R	(Un2)	736	1035	100	0.711	36*	49	15.3	0.84	23.4	27.03
North: AVE. LA CEIBA												
42	L		703	868	100	0.810*	39*		44.5	0.87	19.4	40.32
41	T		80	146	68	0.550	41		13.9	0.70	11.1	2.55
43	R	(Un1)	330	600	68	0.550	41	41	23.0	0.86	11.1	11.63

* Maximum degree of saturation, or critical green periods

Finca Barranca - Ponce, P.R.
Int. PR-1 & Ave. La Ceiba, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 109

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Shrt Lane (m)	Queue (m)
West: PR-1 PONCE												

1 L	245			245	1	1910	20		0.744	57.5	113*
100											
2 T		442		442	3	1910	36		0.725	36.2	179
3 T		442		442	3	1910	36		0.725	36.2	179
4 TR		329	108	437	3	1911	36	2	0.725	36.5	170
	245	1214	108	1567	3				0.744	39.6	179

South: AVE. LA CEIBA

1 L	107			107	0	1911	30		0.352	44.9	44
2 T		59		59	2	1911	41		0.083	24.0	19
3 R			236	236	3	1911	37	41	0.258	14.4	41
	107	59	236	402	2				0.352	23.9	44

East: PR-1 MERCEDITA

1 L	199			199	2	1910	20		0.606	55.5	90
100											
2 T		386		386	3	1910	36		0.632	35.2	153
3 T		386		386	3	1910	36		0.632	35.2	153
4 T		386		386	3	1910	36		0.632	35.2	153
5 R			736	736	1	1910	36	49	0.711	15.3	180
	199	1158	736	2093	2				0.711	30.1	180

North: AVE. LA CEIBA

1 L	352			352	1	1910	39		0.810	44.5	149
2 L	352			352	1	1911	39		0.810	44.5	149
3 TR		80	330	410	1	1911	16	41	0.550	21.2	86
	703	80	330	1113	1				0.810	35.9	149

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	5175	2	109	0.810	33.8	180

Total flow period = 60 minutes. Peak flow period = 15 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows (in through car units) have been adjusted for grade, lane widths, parking manoeuvres and bus stops.

* Queue length exceeds short lane length due to specification of a

percentile queue in the aaSIDRA Configuration File. For calculation
of this statistic, you may specify the lane with full length.

Finca Barranca - Ponce, P.R.
Int. PR-1 & Ave. La Ceiba, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 109

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio (g/C) 1st grn	Green Ratio (g/C) 2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
West: PR-1 PONCE								
12 L		0.183*		245	329	0.744	57.5	E
11 T		0.330		1214	1674	0.725	35.6	D
13 R	(Un2)	0.330	0.477	108	149	0.724	43.3	D
				1567	2153	0.744	39.6	D
South: AVE. LA CEIBA								
32 L		0.275		107	304	0.352	44.9	D
31 T		0.376		59	707	0.083	24.0	C
33 R	(Un1)	0.339	0.376	236	917	0.257	14.4	B
				402	1927	0.352	23.9	C
East: PR-1 MERCEDITA								
22 L		0.183		199	329	0.606	55.5	E
21 T		0.330		1158	1833	0.632	35.2	D
23 R	(Un2)	0.330*	0.450	736	1035	0.711	15.3	B
				2093	3197	0.711	30.1	C
North: AVE. LA CEIBA								
42 L		0.358*		703	868	0.810*	44.5	D
41 T		0.376		80	146	0.550	13.9	B
43 R	(Un1)	0.376	0.376	330	600	0.550	23.0	C
				1113	1614	0.810	35.9	D
ALL VEHICLES:				5175	8890	0.810	33.8	C
INTERSECTION (persons):				7763	8890	0.810	33.8	

Level of Service calculations are based on
average control delay including geometric delay (HCM criteria) and v/c ratio,
independent of the current delay definition used.

For the criteria, refer to the "Level of Service" topic in the aaSIDRA Output Guide or the Output section of the on-line help.

* Maximum v/c ratio, or critical green periods

Finca Barranca - Ponce, P.R.
Int. PR-1 & Ave. La Ceiba, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 109

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
West: PR-1 PONCE						
	South	10.0	18.5	15.7	500	103
	East	S	60.0	25.5	500	109
	North	15.6	23.1	24.6	500	106
South: AVE. LA CEIBA						
	West	16.3	23.6	25.6	500	105
	East	10.0	18.4	15.7	500	105
	North	S	60.0	34.8	500	108
East: PR-1 MERCEDITA						
	West	S	60.0	25.5	500	109
	South	15.6	23.1	24.6	500	106
	North	10.0	18.5	15.7	500	104
North: AVE. LA CEIBA						
	West	10.0	18.5	15.7	500	104
	South	S	60.0	34.8	500	109
	East	19.8	26.0	31.1	500	110

Downstream distance is distance travelled from the stopline until exit
cruise speed is reached (includes negotiation distance). Acceleration
distance is weighted for light and heavy vehicles. The same distance
applies for both stopped and unstopped vehicles.

--- End of aaSIDRA Output ---

Akcelik & Associates Pty Ltd - aaSIDRA 2.0.1.206

Csa Group Inc
Csa Group Systems Registered User No.
*** UNREGISTERED VERSION ***

Time and Date of Analysis 1:31 PM, Jun 5,2003

Filename: F:\Francisco\PROYECTOS\Barranca\SIDRA\PR-14AMF.OUT

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, AM Proyectado
Intersection ID:

aaTraffic SIDRA US Highway Capacity Manual (2000) Metric Version

RUN INFORMATION

Variable cycle time run: "Optimum" cycle time = 75 s

* Basic Parameters:
  Intersection Type: Signalised - Actuated Isolated
  For actuated signal timings, cycle increment is set to 1 second
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 10
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Total Flow Period)
  Specified performance measure for "best" cycle time in variable run - Delay
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay and degree of saturation
  Queue definition: Back of queue, 95th Percentile

* No. of Main (Timing-Capacity) Iterations = 3
  Comparison of last two iterations:
  Difference in intersection degree of satn = 0.0 %
  Difference in total vehicle capacity = 0.0 %
  Largest difference in eff. green times = 0 secs
  (max. value for stopping = 2 secs)

* If an "optimum" cycle time solution is adopted for actuated signal purposes ensure that vehicle-actuated settings reflect this solution in real life. Consider using the "sensitivity analysis" facility to optimise maximum green settings for actuated signals.

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***

DEFAULT PARAMETERS

Default values for some of the important general parameters:
(Default Values File: DEF10.SDF)

1. Basic saturation flow: 1900 tcu/h

   This value applies mainly to signalised intersections. For roundabouts and sign-controlled intersections, it is used for determining capacity of priority and continuous movements.

2. Through car equivalents for signalised intersections

	LEFT		THROUGH		RIGHT	
	LV	HV	LV	HV	LV	HV
Normal	1.053	2.000	1.000	2.000	1.176	2.000
Restricted	1.303	2.500			1.426	2.500

3. Opposed turn parameters (Signalised intersection)

	Crit. Gap	Fol.up Hdway	Deps at End	% Exit Flow Opposing
Left turns :	4.5	2.5	2.0	0
Right turns:	4.0	2.4	2.5	0

4. Cruise speed= 65 km/h, Approach Distance= 500 m

5. Queue space per vehicle in metres
   Light vehicles: 7.6 Heavy vehicles: 14.0

A full list of input data defaults and ranges is given in the Input Guide part of aaSIDRA User Guide.

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 75

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
	LV	HV	LV	HV	LV	HV		
VEHICLES	Demand flows in veh/hour as used by the program							
West: Hospital de Distrito								
12	117	0	0	0	0	0	1.00	0.96
11	0	0	3	0	0	0	1.00	0.96
13	0	0	0	0	178	2	1.00	0.96
South: PR-14 Ponce								
32	326	1	0	0	0	0	1.00	0.96
31	0	0	598	8	0	0	1.00	0.96
33	0	0	0	0	73	0	1.00	0.96
East: Urb. Machuelo								

22	108	0	0	0	0	0	1.00	0.96
21	0	0	48	0	0	0	1.00	0.96
23	0	0	0	0	89	1	1.00	0.96
North: PR-14 Juana D?az								
42	26	0	0	0	0	0	1.00	0.96
41	0	0	1092	10	0	0	1.00	0.96
43	0	0	0	0	280	3	1.00	0.96

Based on unit time = 60 minutes.
Flow Scale and Peak Hour Factor effects included in flow values.

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 75

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	PHASE MATRIX First Green Fr	To	Op	Pr	Second Green Fr	To	Op	Pr	Lost Tim 1st Grn	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
West: Hospital de Distrito															
12 L		C	A							4		16.4		10	
11 T		C	A							4		16.5		10	
13 R	(Un1)	A	C	R		*C	A			25	4	26.2	16.5	36	10
South: PR-14 Ponce															
32 L		*A	B	L						21		54.0Max		30	
31 T		A	B							4		39.6		47	
33 R	(Un2)	A	B			B	A	R		4	4	41.3	20.0Min	47	20
East: Urb. Machuelo															
22 L		B	C							4		10.0Min		6	
21 T		B	C							4		10.0Min		6	
23 R	(Un2)	*B	C			C	B	R		4	21	10.0Min	59.2	6	44
North: PR-14 Juana D?az															
42 L		A	B	L						17		46.5		34	
41 T		A	B							4		41.1		47	
43 R	(Un2)	A	B			B	A	R		4	4	43.0	20.0Min	47	20

Current Phase Sequence No.: 1
Input phase sequence: A B C
Output phase sequence: A B C

Movement Types:
Ped Pedestrian
Dum Dummy
Und Undetected in both green periods
Un1 Undetected in 1st green period
Un2 Undetected in 2nd green period

Under heading 'Op':
L "Left" turns are opposed
R "Right" turns are opposed
LR "Left and Right" opposed
C "Constant" saturation flow

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 75

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Dem Flow (veh /h)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
West: Hospital de Distrito										
12 L	117	1772		0.066		236	0.90	82	100	0.495
11 T	3	45		0.067		6	0.90	80	86	0.500
13 R	180	431	1611	0.011	0.109	422	0.90	111	86	0.427
South: PR-14 Ponce										
32 L	327	655		0.499		262	0.90	-28	100	1.248*
31 T	606	1669		0.363		1046	0.90	55	46	0.579
33 R	73	186	37	0.392	0.000	126	0.90	56	46	0.577
East: Urb. Machuelo										
22 L	108	1726		0.063		138	0.90	15	100	0.782
21 T	48	767		0.063		61	0.90	15	100	0.782
23 R	90	0	196	0.072	0.459	115	0.90	15	100	0.782
North: PR-14 Juana D?az										
42 L	26	91		0.286		41	0.90	43	100	0.630
41 T	1102	2800		0.394		1755	0.90	43	100	0.628
43 R	283	664	129	0.426	0.000	451	0.90	43	100	0.628

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 75

Table S.3 - INTERSECTION PARAMETERS

Crit Mov No.	App. & Turn	Green Period	Phases Fr	Phases To	Adjusted Lost Time	Adjusted Flow Ratio	Required Grn Time Ratio	Required Movement Time
32	S_L		A	B	54	-	-	54.0Max
23	E_R	1st	B	C	10	-	-	10.0Min
13	W_R	2nd	C	A	4	0.109	0.167	16.5
				Total:	68	0.109	0.167	80.5

- Flow ratio not used for cycle time calculations and the adjusted lost time equals the required movement time

(=Min or Max as shown in Table S.1)

Cycle Time:

Minimum	Maximum	Practical	Chosen
30	120	82	75

(Variable cycle times: Program-determined)

Intersection Level of Service	=	C
Worst movement Level of Service	=	F
Average intersection delay (s)	=	31.5
Largest average movement delay (s)	=	162.0
Largest back of queue, 95% (m)	=	231
Performance Index	=	123.52
Degree of saturation (highest)	=	1.248
Practical Spare Capacity (lowest)	=	-28 %
Total vehicle capacity, all lanes (veh/h)	=	4660
Total vehicle flow (veh/h)	=	2963
Total person flow (pers/h)	=	4445
Total vehicle delay (veh-h/h)	=	25.91
Total person delay (pers-h/h)	=	38.87
Total effective vehicle stops (veh/h)	=	2295
Total effective person stops (pers/h)	=	3442
Total vehicle travel (veh-km/h)	=	1792.4
Total cost ($/h)	=	1361.01
Total fuel (L/h)	=	219.2
Total CO2 (kg/h)	=	548.15

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 75

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	47	51	0.680
B	51	55	6	10	0.133
C	61	65	10	14	0.187

Current Phase Sequence No.: 1
Input phase sequence: A B C
Output phase sequence: A B C

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 75

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

	Saturation Flow	End	Tot

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	Cap (veh /h)	Cap (veh /h)	Deg. Satn x	Lane Util %
West: Hospital de Distrito													
1 LT	12, 11	117	3	0	120	3.65	1911	1817	0	0	242	0.495	100
2 R	11, 13	0	0	180	180	3.65	1911	431	1611	48	422	0.427	86P
South: PR-14 Ponce													
1 L	32, 31	327	0	0	327	3.65	1911	655	0	96	262	1.249	100
2 TR	31, 33	0	606	73	679	3.65	1911	1854	786	48	1172	0.579	46P
East: Urb. Machuelo													
1 LT	22, 21	108	6	0	114	3.65	1911	1820	0	0	146	0.782	100
2 TR	21, 23	0	42	90	132	3.65	1911	612	888	48	169	0.782	100
North: PR-14 Juana D?az													
1 LT	42, 41	26	665	0	691	3.65	1911	1795	0	50	1101	0.628	100
2 TR	41, 43	0	437	283	720	3.65	1911	1772	901	48	1146	0.628	100

P Lane under-utilisation found by the "Program"

Basic Saturation Flow in this table is adjusted for lane width, approach grade, parking manoeuvres and number of buses stopping. Saturation flow scale applies if specified.

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 75

Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh /h)	Total Cap. (veh /h)	Lane Util (%)	Deg. Satn x	Eff. Grn 1st Grn	Eff. Grn 2nd Grn	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
West: Hospital de Distrito											
12 L		117	236	100	0.495	10		44.3	0.78	5.3	5.69
11 T		3	6	86	0.500	10		35.4	0.75	5.3	0.14
13 R	(Un1)	180	422	86	0.427	36	10*	17.9	0.82	5.1	6.04
South: PR-14 Ponce											
32 L		327	262	100	1.248*	30*		162.0	1.59	30.3	38.47
31 T		606	1046	46	0.579	47		8.6	0.56	16.1	17.12
33 R	(Un2)	73	126	46	0.577	47	20	17.6	0.83	16.1	2.35

East: Urb. Machuelo											
22	L	108	138	100	0.782	6		51.2	0.90	6.2	5.86
21	T	48	61	100	0.782	6		27.5	0.90	6.2	1.94
23	R (Un2)	90	115	100	0.782	6*	44	33.9	0.92	5.2	3.80
North: PR-14 Juana D?az											
42	L	26	41	100	0.630	34		19.2	0.83	18.0	0.89
41	T	1102	1755	100	0.628	47		9.2	0.59	18.0	32.29
43	R (Un2)	283	451	100	0.628	47	20	16.7	0.84	16.4	8.93

* Maximum degree of saturation, or critical green periods

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 75

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
West: Hospital de Distrito												
1 LT	117	3		120	0	1911	10		0.495	44.0	40	
2 R			180	180	1	1911	36	10	0.427	17.9	39	
	117	3	180	300	1				0.495	28.4	40	30d
South: PR-14 Ponce												
1 L	327			327	0	1911	30		1.249	162.0	231	
2 TR		606	73	679	1	1911	47	1	0.579	9.6	123	
	327	606	73	1006	1				1.249	59.1	231	
East: Urb. Machuelo												
1 LT	108	6		114	0	1911	6		0.782	50.7	47	
2 TR		42	90	132	1	1911	12	6	0.782	31.2	40*	30
	108	48	90	246	0				0.782	40.2	47	
North: PR-14 Juana D?az												
1 LT	26	665		691	1	1911	46		0.628	10.6	138	
2 TR		437	283	720	1	1911	47	3	0.628	11.2	126	
	26	1102	283	1411	1				0.628	10.9	138	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	2963	1	75	1.248	31.5	231

Total flow period = 60 minutes. Peak flow period = 15 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows (in through car units) have been adjusted for grade, lane widths, parking manoeuvres and bus stops.

* Queue length exceeds short lane length due to specification of a percentile queue in the aaSIDRA Configuration File. For calculation of this statistic, you may specify the lane with full length.

d Short lane length on departure side.

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 75

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio 1st grn	Time (g/C) 2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
West: Hospital de Distrito								
12	L	0.133		117	236	0.495	44.3	D
11	T	0.133		3	6	0.500	35.4	D
13	R (Un1)	0.480	0.133*	180	422	0.427	17.9	B
				300	664	0.500	28.4	C
South: PR-14 Ponce								
32	L	0.400*		327	262	1.248*	162.0	F
31	T	0.627		606	1046	0.579	8.6	A
33	R (Un2)	0.627	0.267	73	126	0.577	17.6	B
				1006	1434	1.248	59.1	F
East: Urb. Machuelo								
22	L	0.080		108	138	0.782	51.2	D
21	T	0.080		48	61	0.782	27.5	C
23	R (Un2)	0.080*	0.587	90	115	0.782	33.9	C
				246	315	0.782	40.2	D
North: PR-14 Juana D?az								
42	L	0.453		26	41	0.630	19.2	B
41	T	0.627		1102	1755	0.628	9.2	A
43	R (Un2)	0.627	0.267	283	451	0.628	16.7	B
				1411	2246	0.630	10.9	B
ALL VEHICLES:				2963	4660	1.248	31.5	C
INTERSECTION (persons):				4445	4660	1.248	31.5	

Level of Service calculations are based on
average control delay including geometric delay (HCM criteria) and v/c ratio,
independent of the current delay definition used.
For the criteria, refer to the "Level of Service" topic in the aaSIDRA Output Guide or the Output section of the on-line help.
* Maximum v/c ratio, or critical green periods

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	1.248	75
Average Delay	31.5	75
Stop Rate	0.77	75
Max. Queue for Any Movement	29.9	60
Perf. Index	119.8	55
Cost	1361.0	75

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	4660	75
Prac. Spare Cap.	-28	75

If an "optimum" cycle time solution is adopted for actuated signal purposes ensure that vehicle-actuated settings reflect this solution in real life. Consider using the "sensitivity analysis" facility to optimise maximum green settings for actuated signals.

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 75

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
West: Hospital de Distrito						
	South	10.0	18.5	15.7	500	104
	East	S	60.0	18.2	500	106

North	12.0	20.2	18.8	500	103
South: PR-14 Ponce					
West	12.0	20.2	18.8	500	103
East	10.0	18.5	15.7	500	102
North	S	60.0	20.2	500	108
East: Urb. Machuelo					
West	S	60.0	18.2	500	106
South	11.0	19.3	17.2	500	103
North	10.0	18.5	15.7	500	104
North: PR-14 Juana D?az					
West	10.0	18.5	15.7	500	104
South	S	60.0	20.2	500	107
East	11.0	19.3	17.2	500	103

Downstream distance is distance travelled from the stopline until exit cruise speed is reached (includes negotiation distance). Acceleration distance is weighted for light and heavy vehicles. The same distance applies for both stopped and unstopped vehicles.

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Total Veh. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h
40	3709	1.817	-50	63.4	1.15	38.1	160.0	1958.9
45	4003	1.666	-46	50.3	0.98	36.2	138.8	1698.9
50	4206	1.482	-39	40.7	0.90	32.8	127.4	1523.8
55	4372	1.353	-33	34.2	0.85	30.1	119.8	1406.8
60	4461	1.321	-32	33.1	0.82	29.9	120.1	1387.8
65	4537	1.292	-30	32.2	0.80	30.0	120.8	1373.2
70	4600	1.267	-29	31.7	0.79	30.0	121.9	1363.5
75	4660	1.248	-28	31.5	0.77	30.3	123.5	1361.0
80	4658	1.317	-32	36.4	0.79	33.5	133.1	1453.1
85	4548	1.493	-40	47.3	0.84	39.4	152.3	1652.7
90	4459	1.752	-49	62.8	0.88	45.6	175.4	1936.7
95	4367	2.063	-56	81.4	0.92	51.2	200.9	2276.0
100	4295	2.445	-63	103.5	0.94	56.1	228.6	2681.5
105	4217	2.918	-69	131.4	0.98	60.6	263.3	3197.8
110	4147	3.524	-74	167.2	1.02	64.7	305.5	3864.4
115	4064	4.528	-80	225.8	1.07	69.0	369.4	4960.8
120	4012	5.129	-82	266.4	1.12	71.1	416.5	5729.5

--- End of aaSIDRA Output ---

Akcelik & Associates Pty Ltd - aaSIDRA 2.0.1.206

Csa Group Inc
Csa Group Systems Registered User No.
*** UNREGISTERED VERSION ***

Time and Date of Analysis 10:42 AM, Jun 5,2003

Filename: F:\Francisco\PROYECTOS\Barranca\SIDRA\PR-14PMF.OUT

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, PM Proyectado
Intersection ID:

aaTraffic SIDRA US Highway Capacity Manual (2000) Metric Version

RUN INFORMATION

* Basic Parameters:
Intersection Type: Signalised - Actuated Isolated
For fully-actuated signal timings, the following specifications will be ignored:
Any maximum cycle time specification
Any user-given cycle time (unless phase times also given)
User-given cycle and phase times (if variable flow scale run)
Any variable cycle time specification
Any green split priority specification
Driving on the right-hand side of the road
Input data specified in Metric units
Default Values File No. 10
Peak flow period (for performance): 15 minutes
Unit time (for volumes): 60 minutes (Total Flow Period)
Delay definition: Control delay
Geometric delay included
aaSIDRA Standard Delay and Queue models used
Level of Service based on: Delay and degree of saturation
Queue definition: Back of queue, 95th Percentile

* No. of Main (Timing-Capacity) Iterations = 6
Comparison of last two iterations:
Difference in intersection degree of satn = 0.0 %
Difference in total vehicle capacity = 0.0 %
Largest difference in eff. green times = 0 secs
(max. value for stopping = 1 secs)

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***

DEFAULT PARAMETERS

Default values for some of the important general parameters:
(Default Values File: DEF10.SDF)

1. Basic saturation flow: 1900 tcu/h

This value applies mainly to signalised intersections. For roundabouts and sign-controlled intersections, it is used for determining capacity of priority and continuous movements.

2. Through car equivalents for signalised intersections

	LEFT		THROUGH		RIGHT	
	LV	HV	LV	HV	LV	HV
Normal	1.053	2.000	1.000	2.000	1.176	2.000
Restricted	1.303	2.500			1.426	2.500

3. Opposed turn parameters (Signalised intersection)

	Crit. Gap	Fol.up Hdway	Deps at End	% Exit Flow Opposing
Left turns :	4.5	2.5	2.0	0
Right turns:	4.0	2.4	2.5	0

4. Cruise speed= 65 km/h, Approach Distance= 500 m

5. Queue space per vehicle in metres
Light vehicles: 7.6 Heavy vehicles: 14.0

A full list of input data defaults and ranges is given in the Input Guide part of aaSIDRA User Guide.

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 96

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
	LV	HV	LV	HV	LV	HV		
VEHICLES	Demand flows in veh/hour as used by the program							
West: Hospital de Distrito								
12	230	0	0	0	0	0	1.00	0.96
11	0	0	3	0	0	0	1.00	0.96
13	0	0	0	0	269	1	1.00	0.96

South: PR-14 Ponce								
32	50	1	0	0	0	0	1.00	0.96
31	0	0	900	6	0	0	1.00	0.96
33	0	0	0	0	154	0	1.00	0.96
East: Urb. Machuelo								
22	80	0	0	0	0	0	1.00	0.96
21	0	0	2	0	0	0	1.00	0.96
23	0	0	0	0	73	0	1.00	0.96
North: PR-14 Juana D?az								
42	84	1	0	0	0	0	1.00	0.96
41	0	0	653	5	0	0	1.00	0.96
43	0	0	0	0	57	0	1.00	0.96

Based on unit time = 60 minutes.
Flow Scale and Peak Hour Factor effects included in flow values.

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 96

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	P H A S E M A T R I X First Green Fr To Op Pr	Second Green Fr To Op Pr	Lost Tim 1st Grn	2nd Grn	Req.Mov.Time 1st Grn	2nd Grn	Eff. Grn 1st Grn	2nd Grn
West: Hospital de Distrito									
12 L		C A		4		24.0Max			
23									
11 T		C A		4		27.0			
23									
13 R	(Un1)	A C R	*C A	32	4	34.1	27.0		
37	23								
South: PR-14 Ponce									
32 L		*A B L		27		54.0Max			
27									

```
   31 T        A  B                          4        44.8
50
   33 R  (Un2) A  B          B  A  R         4    4   47.6      20.0Min
50   38
 ------------------------------------------------------------------------
-------
 East: Urb. Machuelo
   22 L       *B  C                          4        14.6
11
   21 T        B  C                          4        14.0
11
   23 R  (Un2) B  C          C  B  R         4   42   12.2      20.0Min
11   39
 ------------------------------------------------------------------------
-------
 North: PR-14  Juana D?az
   42 L        A  B  L                       32        54.0Max
22
   41 T        A  B                          4        43.4
50
   43 R  (Un2) A  B          B  A  R         4    4   46.4      20.0Min
50   38
 ------------------------------------------------------------------------
-------
   Current Phase Sequence No.: 1
   Input phase sequence: A  B  C
   Output phase sequence: A  B  C
 ------------------------------------------------------------------------
-------

 Movement Types:                                Under heading 'Op':
   Ped  Pedestrian                                L   "Left" turns are
opposed
   Dum  Dummy                                     R   "Right" turns are
opposed
   Und  Undetected in both green periods          LR  "Left and Right"
opposed
   Un1  Undetected in 1st green period            C   "Constant" saturation
flow
   Un2  Undetected in 2nd green period
```

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 96

Table S.2 - MOVEMENT CAPACITY PARAMETERS

```
 ------------------------------------------------------------------------
--------
  Mov      Dem     Satn Flow     Flow Ratio   Total  Prac.  Prac.  Lane
Deg.
  No.      Flow    -----------   ----------    Cap.  Deg.   Spare  Util
Satn
```

	(veh /h)	1st Grn	2nd Grn	1st Grn	2nd Grn	(veh /h)	Satn xp	Cap. (%)	(%) x
West: Hospital de Distrito									
12 L	230	1793		0.128		430	0.90	68	100 0.535
11 T	3	23		0.130		6	0.90	65	76 0.544
13 R	270	718	1620	0.015	0.160	665	0.90	122	76 0.406
South: PR-14 Ponce									
32 L	51	272		0.188		77	0.90	35	100 0.667*
31 T	906	2608		0.347		1358	0.90	35	100 0.667*
33 R	154	415	37	0.371	0.000	231	0.90	35	100 0.667*
East: Urb. Machuelo									
22 L	80	1815		0.044		208	0.90	134	100 0.385
21 T	2	48<		0.042		6	0.90	147	96 0.364
23 R	73	1409<	92<	0.052	0.000	199	0.90	145	96 0.367
North: PR-14 Juana D?az									
42 L	85	595		0.143		136	0.90	44	100 0.623
41 T	658	2027		0.325		1056	0.90	44	100 0.623
43 R	57	162	18	0.352	0.000	92	0.90	44	100 0.623

< Reduced saturation flow due to a short lane effect

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 96

Table S.3 - INTERSECTION PARAMETERS

Crit App.	Green	Phases	Adjusted	Adjusted	Required	Required

Mov No.	Movement	Period	Fr	To	Lost Time	Flow Ratio	Grn Time Ratio	Time
32	S_L		A	B	54	-	-	54.0Max
22	E_L		B	C	4	0.044	0.110	14.6
13	W_R	2nd	C	A	4	0.160	0.240	27.0
				Total:	62	0.204	0.350	95.6

\- Flow ratio not used for cycle time calculations and the adjusted lost time equals the required movement time (=Min or Max as shown in Table S.1)

Cycle Time:

Minimum	Maximum	Practical	Chosen
30	NA	96	96

Intersection Level of Service	=	C
Worst movement Level of Service	=	D
Average intersection delay (s)	=	25.6
Largest average movement delay (s)	=	54.6
Largest back of queue, 95% (m)	=	177
Performance Index	=	109.49
Degree of saturation (highest)	=	0.667
Practical Spare Capacity (lowest)	=	35 %
Total vehicle capacity, all lanes (veh/h)	=	4462
Total vehicle flow (veh/h)	=	2569
Total person flow (pers/h)	=	3854
Total vehicle delay (veh-h/h)	=	18.24
Total person delay (pers-h/h)	=	27.35
Total effective vehicle stops (veh/h)	=	1931
Total effective person stops (pers/h)	=	2897
Total vehicle travel (veh-km/h)	=	1554.2
Total cost ($/h)	=	1064.88
Total fuel (L/h)	=	184.1
Total CO2 (kg/h)	=	460.31

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 96

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	50	54	0.562
B	54	58	11	15	0.156
C	69	73	23	27	0.281

Current Phase Sequence No.: 1
Input phase sequence: A B C
Output phase sequence: A B C

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 96

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan Deg. Satn	Mov Lane No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	End Cap (veh /h)	Tot Cap (veh /h)	x %
West: Hospital de Distrito												
1 LT 0.535	12, 11	230	3	0	233	3.65	1911	1816	0	0	435	100
2 R 0.406	11, 13	0	0	270	270	3.65	1911	718	1620	38	665	76P
South: PR-14 Ponce												
1 LT 0.667	32, 31	51	416	0	467	3.65	1911	1724	0	42	700	100
2 TR 0.667	31, 33	0	490	154	644	3.65	1911	1824	1484	38	966	100
East: Urb. Machuelo												
1 L 0.385	22, 21	80	0	0	80	3.65	1911	1815	0	0	208	100
2 TR 0.367	21, 23	0	2	73	75	3.65	1911	442<	334<	38	204	96P

```
-------------------------------------------------------------------------
-------
 North: PR-14  Juana D?az
  1 LT    42,    85  104    0  189  3.65  1911 1167     0   54  304
0.623  100
          41
  2 TR    41,     0  554   57  611  3.65  1911 1867   723   38  980
0.623  100
          43
-------------------------------------------------------------------------
-------
   <  Reduced saturation flow due to a short lane effect
   P  Lane under-utilisation found by the "Program"

   Basic Saturation Flow in this table is adjusted for lane width,
approach
   grade, parking manoeuvres and number of buses stopping.  Saturation
flow
   scale applies if specified.

_________________________________________________________________________
________
```

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 96

Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh /h)	Total Cap. (veh /h)	Lane Util (%)	Deg. Satn x	Eff. Grn 1st Grn	Eff. Grn 2nd Grn	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
West: Hospital de Distrito											
12	L	230	430	100	0.535	23		45.1	0.82	11.5	12.11
11	T	3	6	76	0.544	23		36.2	0.75	11.5	0.15
13	R (Un1)	270	665	76	0.406	37	23*	19.2	0.81	8.6	9.73
South: PR-14 Ponce											
32	L	51	77	100	0.667*	27*		35.1	0.85	20.0	2.45
31	T	906	1358	100	0.667*	50		21.4	0.72	23.2	37.79
33	R (Un2)	154	231	100	0.667*	50	38	26.3	0.86	23.2	6.50

```
------------------------------------------------------------------------
------
 East: Urb. Machuelo
   22 L          80   208   100  0.385   11*        54.6  0.77    4.5
4.58
   21 T           2     6<   96  0.364   11         13.0  0.48    2.3
0.06
   23 R  (Un2)   73   199<   96  0.367   11   39    21.5  0.77    2.3
2.57
------------------------------------------------------------------------
------
 North: PR-14  Juana D?az
   42 L          85   136   100  0.623   22         45.4  0.83    9.7
4.55
   41 T         658  1056   100  0.623   50         20.5  0.69   21.8
26.61
   43 R  (Un2)   57    92   100  0.623   50   38    26.5  0.85   21.8
2.39
------------------------------------------------------------------------
------
   <  Reduced capacity due to a short lane effect
   *  Maximum degree of saturation, or critical green periods

------------------------------------------------------------------------
-------

 Finca Barranca - Ponce, P.R.
 Int. PR-14 & Entrada Hopital de Distrito, PM Proyectado
 Intersection ID:            *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  96

 Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA
 ------------------------------------------------------------------------
----
  Lane   Demand Flow (veh/h)        Adj.  Eff Grn   Deg   Aver. Longest
Shrt
  No.    --------------------  %HV  Basic  (secs)   Sat   Delay  Queue
Lane
           L    T    R  Tot        Satf. 1st 2nd    x    (sec)   (m)
(m)
 ------------------------------------------------------------------------
----
  West: Hospital de Distrito
 1 LT    230    3        233    0  1911   23       0.535  45.0    87
 2 R              270    270    0  1911   37  23   0.406  19.2    65
         ------------------------------------------------------------------
----
         230    3  270   503    0                  0.535  31.2    87
30d
 ------------------------------------------------------------------------
----
  South: PR-14  Ponce
 1 LT     51  416        467    1  1911   39       0.667  27.1   153
 2 TR         490  154   644    1  1911   50   1   0.667  19.4   177
         ------------------------------------------------------------------
----
```

	51	906	154	1111	1					0.667	22.7	177
East: Urb. Machuelo												
1 L	80			80	0	1911	11			0.385	54.6	34
2 TR		2	73	75	0	1911	36	11		0.367	21.3	18
30												
	80	2	73	155	0					0.385	38.5	34
North: PR-14 Juana D?az												
1 LT	85	104		189	1	1911	25			0.623	40.4	75
2 TR		554	57	611	1	1911	50	1		0.623	18.3	167
	85	658	57	800	1					0.623	23.5	167

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	2569	1	96	0.667	25.6	177

Total flow period = 60 minutes. Peak flow period = 15 minutes.

Queue values in this table are 95% back of queue (metres).

Note: Basic Saturation Flows (in through car units) have been adjusted for grade, lane widths, parking manoeuvres and bus stops.

d Short lane length on departure side.

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 96

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio (g/C) 1st grn	Green Ratio (g/C) 2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
West: Hospital de Distrito								
12	L	0.240		230	430	0.535	45.1	D
11	T	0.240		3	6	0.544	36.2	D

13 R (Un1)	0.385	0.240*	270	665	0.406	19.2	B
			503	1100	0.544	31.2	C
South: PR-14 Ponce							
32 L	0.281*		51	77	0.667*	35.1	D
31 T	0.521		906	1358	0.667*	21.4	C
33 R (Un2)	0.521	0.396	154	231	0.667*	26.3	C
			1111	1666	0.667	22.7	C
East: Urb. Machuelo							
22 L	0.115*		80	208	0.385	54.6	D
21 T	0.115		2	6<	0.364	13.0	B
23 R (Un2)	0.115	0.406	73	199<	0.367	21.5	C
			155	412	0.385	38.5	D
North: PR-14 Juana D?az							
42 L	0.229		85	136	0.623	45.4	D
41 T	0.521		658	1056	0.623	20.5	C
43 R (Un2)	0.521	0.396	57	92	0.623	26.5	C
			800	1284	0.623	23.5	C
ALL VEHICLES:			2569	4462	0.667	25.6	C
INTERSECTION (persons):			3854	4462	0.667	25.6	

Level of Service calculations are based on average control delay including geometric delay (HCM criteria) and v/c ratio, independent of the current delay definition used. For the criteria, refer to the "Level of Service" topic in the aaSIDRA Output Guide or the Output section of the on-line help.

< Reduced capacity due to a short lane effect

* Maximum v/c ratio, or critical green periods

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 96

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
West: Hospital de Distrito						
	South	10.0	18.5	15.7	500	103
	East	S	60.0	18.2	500	106
	North	12.0	20.2	18.8	500	103

South: PR-14	Ponce					
	West	12.0	20.2	18.8	500	105
	East	10.0	18.5	15.7	500	102
	North	S	60.0	20.2	500	107
East: Urb. Machuelo						
	West	S	60.0	18.2	500	106
	South	11.0	19.3	17.2	500	103
	North	10.0	18.5	15.7	500	102
North: PR-14	Juana D?az					
	West	10.0	18.5	15.7	500	102
	South	S	60.0	20.2	500	107
	East	11.0	19.3	17.2	500	104

Downstream distance is distance travelled from the stopline until exit
cruise speed is reached (includes negotiation distance). Acceleration
distance is weighted for light and heavy vehicles. The same distance
applies for both stopped and unstopped vehicles.

--- End of aaSIDRA Output ---

Akcelik & Associates Pty Ltd - aaSIDRA 2.0.1.206

Csa Group Inc
Csa Group Systems Registered User No.
*** UNREGISTERED VERSION ***

Time and Date of Analysis 11:19 AM, Jun 5,2003

Filename: F:\Francisco\PROYECTOS\Barranca\SIDRA\PR-10SAMF.OUT

Finca Barranca, Ponce
Int. Acceso Norte y Rampas Sur de PR-10, AM Proyectado
Intersection ID:

aaTraffic SIDRA US Highway Capacity Manual (2000) Metric Version

RUN INFORMATION

* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 10
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Total Flow Period)
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay and degree of saturation
  Queue definition: Back of queue, 95th Percentile

Finca Barranca, Ponce
Int. Acceso Norte y Rampas Sur de PR-10, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***

DEFAULT PARAMETERS

Default values for some of the important general parameters:
(Default Values File: DEF10.SDF)

1. Basic saturation flow: 1900 tcu/h

This value applies mainly to signalised intersections. For roundabouts and sign-controlled intersections, it is used for determining capacity of priority and continuous movements.

2. Through car equivalents for signalised intersections

	LEFT		THROUGH		RIGHT	
	LV	HV	LV	HV	LV	HV
Normal	1.053	2.000	1.000	2.000	1.176	2.000
Restricted	1.303	2.500			1.426	2.500

3. Opposed turn parameters (Two-Way Stop Control)

	Crit. Gap	Fol.up Hdway	Min. Deps	% Exit Flow Opposing
Left turns :	7.5	3.5	2.0	50
Through :	6.5	4.0	2.0	50
Right turns:	6.9	3.3	2.0	50
Opposed turns from priority road:	4.1	2.2	2.0	0

4. Cruise speed= 65 km/h, Approach Distance= 500 m

5. Queue space per vehicle in metres
Light vehicles: 7.6 Heavy vehicles: 14.0

A full list of input data defaults and ranges is given in the Input Guide part of aaSIDRA User Guide.

Finca Barranca, Ponce
Int. Acceso Norte y Rampas Sur de PR-10, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Stop Sign Controlled Intersection

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
	LV	HV	LV	HV	LV	HV		
VEHICLES Demand flows in veh/hour as used by the program								
West: Desde PR-10 Oeste								
12	1	0	0	0	0	0	1.00	0.95
13	0	0	1	0	107	0	1.00	0.95
South: Desde Desarrollo								
31	0	0	327	0	0	0	1.00	0.95
33	0	0	0	0	381	0	1.00	0.95
North: Desde PR-10 Este								
42	1	0	0	0	0	0	1.00	0.95
41	0	0	93	0	0	0	1.00	0.95

Based on unit time = 60 minutes.

Flow Scale and Peak Hour Factor effects included in flow values.

Finca Barranca, Ponce
Int. Acceso Norte y Rampas Sur de PR-10, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Stop Sign Controlled Intersection

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Dem Flow (veh /h)	Total Opng Flow (veh/h)	%HV	Adjust. Opng Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
West: Desde PR-10 Oeste									
12 L	1	421	0.0	421	16	0.80	1180	100	0.062
13 TR	108	DIFF			1716<	0.80	1171	100	0.063
South: Desde Desarrollo									
31 T	327	0			1900	0.80	365	73	0.172
33 R	381	0			1615	0.80	239	100	0.236*
North: Desde PR-10 Este									
42 L	1	708	0.0	708	40	0.80	3100	100	0.025
41 T	93	0			3712	0.80	3093	100	0.025

< Reduced saturation flow due to a short lane effect
DIFF Opposing flow was not printed as there was more than one opposed
turn in this movement with differing opposing flows

Finca Barranca, Ponce
Int. Acceso Norte y Rampas Sur de PR-10, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	A
Worst movement Level of Service	=	B
Average intersection delay (s)	=	5.7
Largest average movement delay (s)	=	12.6
Largest back of queue, 95% (m)	=	3
Performance Index	=	12.51
Degree of saturation (highest)	=	0.236
Practical Spare Capacity (lowest)	=	239 %
Total vehicle capacity, all lanes (veh/h)	=	8999
Total vehicle flow (veh/h)	=	911