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 11:18 AM, Jun 5,2003

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

Finca Barranca, Ponce
Int. Acceso Norte y Rampas Norte 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 Norte 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

	L E F T		THROUGH		R I G H T	
	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.   Fol.up   Min.   % Exit Flow
                         Gap    Hdway    Deps    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 Norte de PR-10, AM Proyectado
 Intersection ID:           *** UNREGISTERED VERSION ***
             Stop Sign Controlled Intersection


 Table S.0 - TRAFFIC FLOW DATA
 ---------------------------------------------------------------------
        Mov              Left       Through       Right     Flow   Peak
        No.           ---------    ---------    ---------   Scale  Flow
                       LV    HV     LV    HV     LV    HV
Factor
 ---------------------------------------------------------------------
 VEHICLES       Demand flows in veh/hour as used by the program
 South: Desde Desarrollo
         32           327     0      0     0      0     0   1.00   0.95
 ---------------------------------------------------------------------
 East: Desde PR-10 Este
         22            93     0      0     0      0     0   1.00   0.95
         21             0     0      1     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 Norte 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
South: Desde Desarrollo									
32 L	327	0			3610	0.80	783	100	0.091*
East: Desde PR-10 Este									
22 L	93	327	0.0	327	1202	0.80	934	100	0.077
21 T	1	327	0.0	327	13	0.80	940	100	0.077

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

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	B
Worst movement Level of Service	=	C
Average intersection delay (s)	=	11.0
Largest average movement delay (s)	=	15.6
Largest back of queue, 95% (m)	=	4
Performance Index	=	7.38
Degree of saturation (highest)	=	0.091
Practical Spare Capacity (lowest)	=	783 %
Total vehicle capacity, all lanes (veh/h)	=	4825
Total vehicle flow (veh/h)	=	421
Total person flow (pers/h)	=	632
Total vehicle delay (veh-h/h)	=	1.29
Total person delay (pers-h/h)	=	1.93
Total effective vehicle stops (veh/h)	=	322
Total effective person stops (pers/h)	=	483
Total vehicle travel (veh-km/h)	=	260.6
Total cost ($/h)	=	149.31
Total fuel (L/h)	=	31.5
Total CO2 (kg/h)	=	78.75

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

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: Desde Desarrollo									
1 L	32	164	0	0	164	164	1805	0.091	100
2 L	32	164	0	0	164	164	1805	0.091	100
East: Desde PR-10 Este									
1 L	22	47	0	0	47	47	608	0.077	100
2 LT	22, 21	46	1	0	47	47	607	0.077	100

The capacity value for priority and continuous movements is obtained by adjusting the basic saturation flow for heavy vehicle and turning vehicle effects. Saturation flow scale applies if specified.

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

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	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
South: Desde Desarrollo									
32	L	327	3610	100	0.091*	9.7	0.73	0.0	5.33
East: Desde PR-10 Este									
22	L	93	1202	100	0.077	15.6	0.87	0.5	2.03
21	T	1	13	100	0.077	15.3	0.89	0.5	0.02

* Maximum degree of saturation

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

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)
South: Desde Desarrollo												
1 L	164			164	0				0.091	9.7	0	
2 L	164			164	0				0.091	9.7	0	
	327	0	0	327	0				0.091	9.7		
East: Desde PR-10 Este												
1 L	47			47	0				0.077	15.6	4	
2 LT	46	1		47	0				0.077	15.6	4	50
	93	1	0	94	0				0.077	15.6	4	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	421	0	0.091	11.0	4

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 are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

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

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh	Total Cap. (veh	Deg. of Satn	Aver. Delay	LOS

	/h)	/h)	(v/c)	(sec)	
South: Desde Desarrollo					
32 L	327	3610	0.091*	9.7	A
	327	3610	0.091	9.7	A
East: Desde PR-10 Este					
22 L	93	1202	0.077	15.6	C
21 T	1	13	0.077	15.3	C
	94	1215	0.077	15.6	C
ALL VEHICLES:	421	4825	0.091	11.0	B

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

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)
South: Desde Desarrollo						
	West	8.2	16.7	12.8	500	119
East: Desde PR-10 Este						
	West	S	26.0	18.2	500	112
	South	8.2	16.7	12.8	500	119

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 11:22 AM, Jun 5,2003

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

Finca Barranca, Ponce
Int. Acceso Norte y Rampas Norte de PR-10, PM 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 Norte de PR-10, 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

	L E F T		THROUGH		R I G H T	
	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 Norte de PR-10, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Stop Sign Controlled Intersection

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
South: Desde Desarrollo								
32	202	0	0	0	0	0	1.00	0.95
East: Desde PR-10 Este								
22	380	0	0	0	0	0	1.00	0.95
21	0	0	1	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 Norte de PR-10, PM 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
South: Desde Desarrollo									
32 L	202	0			3610	0.80	1330	100	0.056
East: Desde PR-10 Este									
22 L	380	202	0.0	202	1483	0.80	212	100	0.256*
21 T	1	202	0.0	202	4	0.80	220	100	0.250

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

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	B
Worst movement Level of Service	=	B
Average intersection delay (s)	=	12.7
Largest average movement delay (s)	=	14.3
Largest back of queue, 95% (m)	=	14
Performance Index	=	11.41
Degree of saturation (highest)	=	0.256
Practical Spare Capacity (lowest)	=	212 %
Total vehicle capacity, all lanes (veh/h)	=	5097
Total vehicle flow (veh/h)	=	583
Total person flow (pers/h)	=	875
Total vehicle delay (veh-h/h)	=	2.06
Total person delay (pers-h/h)	=	3.08
Total effective vehicle stops (veh/h)	=	478
Total effective person stops (pers/h)	=	717
Total vehicle travel (veh-km/h)	=	360.9
Total cost ($/h)	=	212.18
Total fuel (L/h)	=	44.4
Total CO2 (kg/h)	=	110.99

Finca Barranca, Ponce
Int. Acceso Norte y Rampas Norte de PR-10, PM Proyectado

Intersection ID: *** UNREGISTERED VERSION ***
Stop Sign Controlled Intersection

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: Desde Desarrollo									
1 L	32	101	0	0	101	101	1805	0.056	100
2 L	32	101	0	0	101	101	1805	0.056	100
East: Desde PR-10 Este									
1 L	22	191	0	0	191	120	744	0.256	100
2 LT	22, 21	189	1	0	190	120	743	0.256	100

The capacity value for priority and continuous movements is obtained by adjusting the basic saturation flow for heavy vehicle and turning vehicle effects. Saturation flow scale applies if specified.

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

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	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
South: Desde Desarrollo									
32	L	202	3610	100	0.056	9.7	0.73	0.0	3.29
East: Desde PR-10 Este									
22	L	380	1483	100	0.256*	14.3	0.87	1.8	8.09
21	T	1	4	100	0.250	14.0	0.88	1.8	0.02

* Maximum degree of saturation

Finca Barranca, Ponce
Int. Acceso Norte y Rampas Norte de PR-10, PM Proyectado

Intersection ID: *** UNREGISTERED VERSION ***
Stop Sign Controlled Intersection

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)
South: Desde Desarrollo												
1 L	101			101	0				0.056	9.7	0	
2 L	101			101	0				0.056	9.7	0	
	202	0	0	202	0				0.056	9.7		
East: Desde PR-10 Este												
1 L	191			191	0				0.256	14.3	14	
2 LT	189	1		190	0				0.256	14.3	14	50
	380	1	0	381	0				0.256	14.3	14	

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	583	0	0.256	12.7	14

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 are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

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

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
South: Desde Desarrollo						
32	L	202	3610	0.056	9.7	A
		202	3610	0.056	9.7	A
East: Desde PR-10 Este						
22	L	380	1483	0.256*	14.3	B
21	T	1	4	0.250	14.0	B
		381	1487	0.256	14.3	B
ALL VEHICLES:		583	5097	0.256	12.7	B

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
Int. Acceso Norte y Rampas Norte de PR-10, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Stop Sign Controlled Intersection

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)
South: Desde Desarrollo						
	West	8.2	16.7	12.8	500	119
East: Desde PR-10 Este						
	West	S	26.0	18.2	500	112
	South	8.2	16.7	12.8	500	119

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

	L E F T		THROUGH		R I G H T	
	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 LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
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

Total person flow (pers/h)	=	1367
Total vehicle delay (veh-h/h)	=	1.44
Total person delay (pers-h/h)	=	2.16
Total effective vehicle stops (veh/h)	=	367
Total effective person stops (pers/h)	=	551
Total vehicle travel (veh-km/h)	=	566.8
Total cost ($/h)	=	280.63
Total fuel (L/h)	=	56.1
Total CO2 (kg/h)	=	140.17

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

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
West: Desde PR-10 Oeste									
1 LTR	12, 13	1	1	55	57	57	908	0.063	100
2 R	13	0	0	52	52	52	824	<0.063	100
South: Desde Desarrollo									
1 T	31	0	327	0	327	120	1900	0.172	73P
2 R	31, 33	0	0	381	381	120	1615	0.236	100
North: Desde PR-10 Este									
1 LT	42, 41	1	45	0	46	46	1852	0.025	100
2 T	41	0	48	0	48	48	1900	0.025	100

< Reduced capacity flow due to a short lane effect
P Lane under-utilisation found by the "Program"

The capacity value for priority and continuous movements is obtained by adjusting the basic saturation flow for heavy vehicle and turning vehicle effects. Saturation flow scale applies if specified.

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

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	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
West: Desde PR-10 Oeste									
12	L	1	16	100	0.062	12.6	0.95	0.4	0.02
13	TR	108	1716<	100	0.063	12.6	0.85	0.4	2.15
South: Desde Desarrollo									
31	T	327	1900	73	0.172	0.0	0.00	0.0	3.15
33	R	381	1615	100	0.236*	9.7	0.72	0.0	6.17
North: Desde PR-10 Este									
42	L	1	40	100	0.025	12.5	0.75	0.3	0.02
41	T	93	3712	100	0.025	1.4	0.00	0.3	1.01

< Reduced capacity due to a short lane effect

* Maximum degree of saturation

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

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: Desde PR-10 Oeste												
1 LTR	1	1	55	57	0				0.063	12.7	3	
2 R			52	52	0				0.063	12.5	3	50
	1	1	107	109	0				0.063	12.6	3	
South: Desde Desarrollo												
1 T		327		327	0				0.172	0.0	0	
2 R			381	381	0				0.236	9.7	0	

```
         ------------------------------------------------------------
----
           0  327  381   708    0                 0.236    5.2
 ------------------------------------------------------------------
----
  North: Desde PR-10 Este
 1 LT      1   45         46    0                 0.025    3.0     2
 2 T           48         48    0                 0.025    0.0     0
         ------------------------------------------------------------
----
           1   93    0    94    0                 0.025    1.5     2

=====================================================================
===
  ALL VEHICLES          Total   %                  Max   Aver.   Max
                        Flow   HV                   X    Delay  Queue
                         911    0                 0.236    5.7     3

=====================================================================
===
 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 are not adjusted at roundabouts or sign-
       controlled intersections and apply only to continuous lanes.

_____________________________________________________________________
________

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


 Table S.15 - CAPACITY AND LEVEL OF SERVICE
 ------------------------------------------------
  Mov     Mov    Total  Total    Deg.   Aver.   LOS
  No.     Typ    Flow    Cap.     of    Delay
                 (veh   (veh     Satn
                   /h)    /h)    (v/c)  (sec)
 ------------------------------------------------
 West: Desde PR-10 Oeste
   12 L              1     16   0.062    12.6    B
   13 TR           108   1716<  0.063    12.6    B
               -----------------------------------
                   109   1732   0.063    12.6    B
 ------------------------------------------------
 South: Desde Desarrollo
   31 T            327   1900   0.172     0.0    A
   33 R            381   1615   0.236*    9.7    A
               -----------------------------------
                   708   3515   0.236     5.2    A
 ------------------------------------------------
 North: Desde PR-10 Este
   42 L              1     40   0.025    12.5    B
```

```
   41 T             93   3712   0.025     1.4    A
                 -----------------------------------
                     94   3752   0.025     1.5    A
 ---------------------------------------------------
  ALL VEHICLES:    911   8999   0.236     5.7    A
 ---------------------------------------------------
      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
 Int. Acceso Norte y Rampas Sur de PR-10, AM Proyectado
 Intersection ID:           *** UNREGISTERED VERSION ***
             Stop Sign Controlled Intersection


 Table D.0 - GEOMETRIC DELAY DATA
 ----------------------------------------------------------------
                           Negn  Negn   Negn   Appr.  Downstream
  From         To         Radius Speed  Dist.  Dist.   Distance
  Approach     Approach     (m)  (km/h)  (m)    (m)       (m)
 ----------------------------------------------------------------
  West: Desde PR-10 Oeste
                  South    10.0   18.5   15.7    500      119
                   East       S   26.0   18.2    500      112
                  North     8.2   16.7   12.8    500      119
 ----------------------------------------------------------------
  South: Desde Desarrollo
                   East    10.0   18.5   15.7    500      119
                  North       S   65.0   10.8    500      125
 ----------------------------------------------------------------
  North: Desde PR-10 Este
                  South       S   65.0   10.8    500      125
                   East     8.2   16.7   12.8    500      119
 ----------------------------------------------------------------

   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

	L E F T		THROUGH		R I G H T	
	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 LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
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

Total person flow (pers/h)	=	1367
Total vehicle delay (veh-h/h)	=	1.44
Total person delay (pers-h/h)	=	2.16
Total effective vehicle stops (veh/h)	=	367
Total effective person stops (pers/h)	=	551
Total vehicle travel (veh-km/h)	=	566.8
Total cost ($/h)	=	280.63
Total fuel (L/h)	=	56.1
Total CO2 (kg/h)	=	140.17

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

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
West: Desde PR-10 Oeste									
1 LTR	12, 13	1	1	55	57	57	908	0.063	100
2 R	13	0	0	52	52	52	824	<0.063	100
South: Desde Desarrollo									
1 T	31	0	327	0	327	120	1900	0.172	73P
2 R	31, 33	0	0	381	381	120	1615	0.236	100
North: Desde PR-10 Este									
1 LT	42, 41	1	45	0	46	46	1852	0.025	100
2 T	41	0	48	0	48	48	1900	0.025	100

< Reduced capacity flow due to a short lane effect
P Lane under-utilisation found by the "Program"

The capacity value for priority and continuous movements is obtained by adjusting the basic saturation flow for heavy vehicle and turning vehicle effects. Saturation flow scale applies if specified.

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

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	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
West: Desde PR-10 Oeste									
12	L	1	16	100	0.062	12.6	0.95	0.4	0.02
13	TR	108	1716<	100	0.063	12.6	0.85	0.4	2.15
South: Desde Desarrollo									
31	T	327	1900	73	0.172	0.0	0.00	0.0	3.15
33	R	381	1615	100	0.236*	9.7	0.72	0.0	6.17
North: Desde PR-10 Este									
42	L	1	40	100	0.025	12.5	0.75	0.3	0.02
41	T	93	3712	100	0.025	1.4	0.00	0.3	1.01

< Reduced capacity due to a short lane effect

* Maximum degree of saturation

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

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: Desde PR-10 Oeste												
1 LTR	1	1	55	57	0				0.063	12.7	3	
2 R			52	52	0				0.063	12.5	3	50
	1	1	107	109	0				0.063	12.6	3	
South: Desde Desarrollo												
1 T		327		327	0				0.172	0.0	0	
2 R			381	381	0				0.236	9.7	0	

```
         ------------------------------------------------------------
----
           0  327  381   708    0                 0.236    5.2
 ------------------------------------------------------------------
----
  North: Desde PR-10 Este
 1 LT      1   45         46    0                 0.025    3.0     2
 2 T           48         48    0                 0.025    0.0     0
         ------------------------------------------------------------
----
           1   93    0    94    0                 0.025    1.5     2

=====================================================================
===
  ALL VEHICLES          Total   %                  Max   Aver.   Max
                        Flow   HV                   X    Delay  Queue
                         911    0                 0.236    5.7     3

=====================================================================
===
 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 are not adjusted at roundabouts or sign-
       controlled intersections and apply only to continuous lanes.

_____________________________________________________________________
________

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


 Table S.15 - CAPACITY AND LEVEL OF SERVICE
 ------------------------------------------------
  Mov     Mov    Total  Total    Deg.   Aver.   LOS
  No.     Typ    Flow    Cap.     of    Delay
                 (veh   (veh     Satn
                   /h)    /h)    (v/c)  (sec)
 ------------------------------------------------
 West: Desde PR-10 Oeste
   12 L              1     16   0.062    12.6    B
   13 TR           108   1716<  0.063    12.6    B
               -----------------------------------
                   109   1732   0.063    12.6    B
 ------------------------------------------------
 South: Desde Desarrollo
   31 T            327   1900   0.172     0.0    A
   33 R            381   1615   0.236*    9.7    A
               -----------------------------------
                   708   3515   0.236     5.2    A
 ------------------------------------------------
 North: Desde PR-10 Este
   42 L              1     40   0.025    12.5    B
```

```
   41 T             93   3712   0.025     1.4    A
                 -----------------------------------
                     94   3752   0.025     1.5    A
 ---------------------------------------------------
  ALL VEHICLES:    911   8999   0.236     5.7    A
 ---------------------------------------------------
      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
 Int. Acceso Norte y Rampas Sur de PR-10, AM Proyectado
 Intersection ID:           *** UNREGISTERED VERSION ***
             Stop Sign Controlled Intersection


 Table D.0 - GEOMETRIC DELAY DATA
 ----------------------------------------------------------------
                           Negn  Negn   Negn   Appr.  Downstream
  From         To         Radius Speed  Dist.  Dist.   Distance
  Approach     Approach     (m)  (km/h)  (m)    (m)       (m)
 ----------------------------------------------------------------
  West: Desde PR-10 Oeste
                  South    10.0   18.5   15.7    500      119
                   East       S   26.0   18.2    500      112
                  North     8.2   16.7   12.8    500      119
 ----------------------------------------------------------------
  South: Desde Desarrollo
                   East    10.0   18.5   15.7    500      119
                  North       S   65.0   10.8    500      125
 ----------------------------------------------------------------
  North: Desde PR-10 Este
                  South       S   65.0   10.8    500      125
                   East     8.2   16.7   12.8    500      119
 ----------------------------------------------------------------

   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 11:20 AM, Jun 5,2003

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

Finca Barranca, Ponce
Int. Acceso Norte y Rampas Sur de PR-10, PM 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, 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

	L E F T		THROUGH		R I G H T	
	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, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Stop Sign Controlled Intersection

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
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	401	0	1.00	0.95
South: Desde Desarrollo								
31	0	0	202	0	0	0	1.00	0.95
33	0	0	0	0	213	0	1.00	0.95
North: Desde PR-10 Este								
42	1	0	0	0	0	0	1.00	0.95
41	0	0	380	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, PM 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	583	0.0	583	3	0.80	140	100	0.333*
13 TR	402	DIFF			1240	0.80	147	100	0.324
South: Desde Desarrollo									
31 T	202	0			1900	0.80	652	81	0.106
33 R	213	0			1615	0.80	507	100	0.132
North: Desde PR-10 Este									
42 L	1	415	0.0	415	10	0.80	700	100	0.100
41 T	380	0			3783	0.80	696	100	0.100

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, PM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Stop Sign Controlled Intersection

Table S.3 - INTERSECTION PARAMETERS

Intersection Level of Service	=	A
Worst movement Level of Service	=	C
Average intersection delay (s)	=	7.8
Largest average movement delay (s)	=	17.2
Largest back of queue, 95% (m)	=	18
Performance Index	=	18.90
Degree of saturation (highest)	=	0.333
Practical Spare Capacity (lowest)	=	140 %
Total vehicle capacity, all lanes (veh/h)	=	8551
Total vehicle flow (veh/h)	=	1199
Total person flow (pers/h)	=	1799

Total vehicle delay (veh-h/h)	=	2.58
Total person delay (pers-h/h)	=	3.87
Total effective vehicle stops (veh/h)	=	546
Total effective person stops (pers/h)	=	819
Total vehicle travel (veh-km/h)	=	746.2
Total cost ($/h)	=	383.20
Total fuel (L/h)	=	75.9
Total CO2 (kg/h)	=	189.84

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

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
West: Desde PR-10 Oeste									
1 LTR	12, 13	1	1	199	201	120	619	0.324	100
2 R	13	0	0	202	202	120	624	0.324	100
South: Desde Desarrollo									
1 T	31	0	202	0	202	120	1900	0.106	81P
2 R	31, 33	0	0	213	213	120	1615	0.132	100
North: Desde PR-10 Este									
1 LT	42, 41	1	189	0	190	120	1893	0.100	100
2 T	41	0	191	0	191	120	1900	0.100	100

P Lane under-utilisation found by the "Program"

The capacity value for priority and continuous movements is obtained by adjusting the basic saturation flow for heavy vehicle and turning vehicle effects. Saturation flow scale applies if specified.

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

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	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
West: Desde PR-10 Oeste									
12	L	1	3	100	0.333*	17.1	1.02	2.4	0.02
13	TR	402	1240	100	0.324	17.2	0.97	2.4	9.45
South: Desde Desarrollo									
31	T	202	1900	81	0.106	0.0	0.00	0.0	1.94
33	R	213	1615	100	0.132	9.7	0.72	0.0	3.45
North: Desde PR-10 Este									
42	L	1	10	100	0.100	11.3	0.73	0.9	0.02
41	T	380	3783	100	0.100	0.8	0.00	0.9	4.02

* Maximum degree of saturation

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

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: Desde PR-10 Oeste												
1 LTR	1	1	199	201	0				0.324	17.2	18	50
2 R			202	202	0				0.324	17.2	18	
	1	1	401	403	0				0.324	17.2	18	
South: Desde Desarrollo												
1 T		202		202	0				0.106	0.0	0	
2 R			213	213	0				0.132	9.7	0	
	0	202	213	415	0				0.132	5.0		

```
 ---------------------------------------------------------------------
----
  North: Desde PR-10 Este
 1 LT      1  189        190    0                 0.100    1.6     7
 2 T          191        191    0                 0.100    0.0     0
         -------------------------------------------------------------
----
           1  380    0   381    0                 0.100    0.8     7

=========================================================================
===
  ALL VEHICLES          Total   %                  Max   Aver.   Max
                        Flow   HV                   X    Delay  Queue
                        1199    0                 0.333    7.8    18

=========================================================================
===
 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 are not adjusted at roundabouts or sign-
       controlled intersections and apply only to continuous lanes.
```

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


 Table S.15 - CAPACITY AND LEVEL OF SERVICE
 ---------------------------------------------------
  Mov     Mov    Total  Total    Deg.   Aver.   LOS
  No.     Typ    Flow    Cap.     of    Delay
                 (veh   (veh     Satn
                   /h)    /h)    (v/c)  (sec)
 ---------------------------------------------------
 West: Desde PR-10 Oeste
   12 L              1      3   0.333*   17.1    C
   13 TR           402   1240   0.324    17.2    C
               -------------------------------------
                   403   1243   0.333    17.2    C
 ---------------------------------------------------
 South: Desde Desarrollo
   31 T            202   1900   0.106     0.0    A
   33 R            213   1615   0.132     9.7    A
               -------------------------------------
                   415   3515   0.132     5.0    A
 ---------------------------------------------------
 North: Desde PR-10 Este
   42 L              1     10   0.100    11.3    B
   41 T            380   3783   0.100     0.8    A
               -------------------------------------
                   381   3793   0.100     0.8    A
```

ALL VEHICLES:	1199	8551	0.333	7.8	A

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

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: Desde PR-10 Oeste						
	South	10.0	18.5	15.7	500	119
	East	S	26.0	18.2	500	112
	North	8.2	16.7	12.8	500	119
South: Desde Desarrollo						
	East	10.0	18.5	15.7	500	119
	North	S	65.0	10.8	500	125
North: Desde PR-10 Este						
	South	S	65.0	10.8	500	125
	East	8.2	16.7	12.8	500	119

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   11:24 AM, 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

	L E F T		THROUGH		R I G H T	
	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     Mov    P H A S E  M A T R I X    Lost Tim  Req.Mov.Time
Eff. Grn
  No.     Typ  First Green   Second Green  --------  ------------     -
-------
               ------------  ------------  1st  2nd  1st      2nd
1st  2nd
               Fr To Op Pr   Fr To Op Pr   Grn  Grn  Grn      Grn
Grn  Grn
 ----------------------------------------------------------------------
-------
 West: Hospital de Distrito
   12 L        B  C                         4        16.4
10
   11 T        B  C                         4        16.5
10
```

```
   13 R  (Un2)*B  C          C  B  R        4   25   16.5     26.6
10   36
 ---------------------------------------------------------------------
-------
 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        C  A                         4        10.0Min
6
   21 T        C  A                         4        10.0Min
6
   23 R  (Un1) A  C  R      *C  A          21    4   36.6     10.0Min
44    6
 ---------------------------------------------------------------------
-------
 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    5   42.5     20.0Min
47   19
 ---------------------------------------------------------------------
-------
   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, 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	85	0.500
13 R	180	1611	448	0.108	0.014	430	0.90	115	85	0.419
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	1815		0.060		145	0.90	21	100	0.744
21 T	48	991		0.048		79	0.90	49	81	0.605
23 R	90	129	915	0.187	0.072	149	0.90	49	81	0.605
North: PR-14 Juana D?az										
42 L	26	91		0.286		41	0.90	43	100	0.630
41 T	1102	2801		0.393		1755	0.90	43	100	0.628
43 R	283	664	136	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
13	W_R	1st	B	C	4	0.108	0.167	16.5
23	E_R	2nd	C	A	10	-	-	10.0Min
					----	------	------	----
				Total:	68	0.108	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)	=	31.0
Largest average movement delay (s)	=	162.0
Largest back of queue, 95% (m)	=	231
Performance Index	=	122.35
Degree of saturation (highest)	=	1.248
Practical Spare Capacity (lowest)	=	-28 %
Total vehicle capacity, all lanes (veh/h)	=	4726
Total vehicle flow (veh/h)	=	2963
Total person flow (pers/h)	=	4445
Total vehicle delay (veh-h/h)	=	25.55
Total person delay (pers-h/h)	=	38.33
Total effective vehicle stops (veh/h)	=	2278
Total effective person stops (pers/h)	=	3416
Total vehicle travel (veh-km/h)	=	1792.4
Total cost ($/h)	=	1352.52
Total fuel (L/h)	=	218.5
Total CO2 (kg/h)	=	546.53

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	10	14	0.187
C	65	69	6	10	0.133

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

Lan No.	Mov 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)	Deg. Satn x	Lane Util %
West: Hospital de Distrito													
1 LT	12, 117	3	0	120		3.65	1911	1817	0	0	242	0.495	100
	11												
2 R	11, 0	0	180	180		3.65	1911	1611	448	48	430	0.419	85P
	13												
South: PR-14 Ponce													
1 L	32, 327	0	0	327		3.65	1911	655	0	96	262	1.249	100
	31												
2 TR	31, 0	606	73	679		3.65	1911	1854	786	48	1172	0.579	46P
	33												

```
  East: Urb. Machuelo
  1 L     22,  108    0    0  108  3.65  1911 1815     0    0  145
0.744  100
          21
  2 TR    21,    0   48   90  138  3.65  1911  625  1704   48  228
0.605   81P
          23
 ----------------------------------------------------------------------
-------
  North: PR-14  Juana D?az
  1 LT    42,   26  665    0  691  3.65  1911 1795     0   50 1101
0.628  100
          41
  2 TR    41,    0  437  283  720  3.65  1911 1772  1351   48 1146
0.628  100
          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-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     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: Hospital de Distrito
   12 L         117   236   100  0.495   10        44.3  0.78    5.3
5.69
   11 T           3     6    85  0.500   10        35.4  0.75    5.3
0.14
   13 R  (Un2)  180   430    85  0.419   10*  36   17.7  0.81    5.0
5.95
 ----------------------------------------------------------------------
------
 South: PR-14  Ponce
```

```
   32 L         327   262   100  1.248*  30*      162.0  1.59   30.3
38.46
   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   145   100  0.744    6        50.3  0.87    5.8
5.78
   21 T          48    79    81  0.605    6        17.6  0.78    4.3
1.54
   23 R  (Un1)   90   149    81  0.605   44    6*  26.1  0.82    4.3
3.19
 ---------------------------------------------------------------------
------
 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
32.30
   43 R  (Un2)  283   451   100  0.628   47   19   16.8  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   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    117    3        120    0  1911   10      0.495   44.0    40
 2 R               180   180    1  1911   10  36  0.419   17.7    38
         -------------------------------------------------------------
----
         117    3  180   300    1                 0.495   28.2    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 L     108             108    0  1911    6      0.744   50.3    44
 2 TR          48   90   138    1  1911   11   6  0.605   23.1    33*
30
         ---------------------------------------------------------------
----
         108   48   90   246    0                 0.744   35.1    44
 ---------------------------------------------------------------------
----
  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   2  0.628   11.3   126
         ---------------------------------------------------------------
----
          26 1102  283  1411    1                 0.628   10.9   138

=====================================================================
===
  ALL VEHICLES          Total   %       Cycle      Max   Aver.   Max
                        Flow   HV       Time        X    Delay  Queue
                        2963    1         75      1.248   31.0   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 (Un2)	0.133*	0.480	180	430	0.419	17.7	B
				300	672	0.500	28.2	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	145	0.744	50.3	D
21	T	0.080		48	79	0.605	17.6	B
23	R (Un1)	0.587	0.080*	90	149	0.605	26.1	C
				246	373	0.744	35.1	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	0.253	283	451	0.628	16.8	B
				1411	2247	0.630	10.9	B
ALL VEHICLES:				2963	4726	1.248	31.0	C
INTERSECTION (persons):				4445	4726	1.248	31.0	

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	31.0	75
Stop Rate	0.77	75
Max. Queue for Any Movement	29.9	60
Perf. Index	119.4	55
Cost	1352.5	75

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	4726	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	3882	1.817	-50	63.3	1.15	38.1	159.7	1957.6
45	4112	1.666	-46	50.2	0.98	36.2	138.6	1698.1
50	4312	1.482	-39	40.6	0.90	32.8	127.2	1522.7
55	4474	1.353	-33	34.1	0.84	30.1	119.4	1404.9
60	4557	1.321	-32	32.9	0.82	29.9	119.4	1384.8
65	4627	1.292	-30	32.0	0.80	30.0	119.9	1368.9
70	4675	1.267	-29	31.4	0.78	30.0	120.9	1358.0
75	4726	1.248	-28	31.0	0.77	30.3	122.4	1352.5
80	4716	1.317	-32	35.7	0.78	33.5	131.7	1440.3
85	4621	1.493	-40	46.9	0.83	39.4	151.0	1644.9
90	4521	1.752	-49	62.7	0.88	45.6	174.9	1934.1
95	4410	2.063	-56	81.2	0.91	51.2	200.2	2272.4

100	4327	2.445	-63	103.4	0.94	56.1	228.1	2679.6
105	4242	2.918	-69	131.3	0.98	60.6	262.8	3195.9
110	4164	3.524	-74	167.1	1.02	64.7	305.2	3863.7
115	4086	4.528	-80	225.7	1.07	69.0	369.0	4959.2
120	4037	5.129	-82	266.3	1.12	71.1	416.2	5727.9

--- 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   10:33 AM, Jun  5,2003

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

 Finca Barranca - Ponce, P.R.
 Int. PR-14 & Entrada Hopital de Distrito, AM Actual
 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 =  4
   Comparison of last two iterations:
     Difference in intersection degree of satn =  2.4 %
     Difference in total vehicle capacity      =  0.2 %
     Largest difference in eff. green times =  1 secs
     (max. value for stopping = 2 secs)
   Information on Previous Iteration:
     Cycle Time =  84
     Phase Times: 0,  54,  65
     Critical Movements: 32, 23(1st), 13(2nd)
```

```
 Finca Barranca - Ponce, P.R.
 Int. PR-14 & Entrada Hopital de Distrito, AM Actual
 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

	L E F T		THROUGH		R I G H T	
	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 Actual
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 83

Table S.0 - TRAFFIC FLOW DATA

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

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      2     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     45     0   1.00   0.96
 ---------------------------------------------------------------------
--
 East: Urb. Machuelo
         22            47     0      0     0      0     0   1.00   0.96
         21             0     0     21     0      0     0   1.00   0.96
         23             0     0      0     0     38     1   1.00   0.96
 ---------------------------------------------------------------------
--
 North: PR-14  Juana D?az
         42            16     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 Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  83


 Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS
 ---------------------------------------------------------------------
-------
  Mov     Mov    P H A S E  M A T R I X    Lost Tim  Req.Mov.Time
Eff. Grn
  No.     Typ  First Green   Second Green  --------  ------------     -
-------
               ------------  ------------  1st  2nd  1st      2nd
1st  2nd
               Fr To Op Pr   Fr To Op Pr   Grn  Grn  Grn      Grn
Grn  Grn
 ---------------------------------------------------------------------
-------
 West: Hospital de Distrito
   12 L        C  A                         4        17.6
15
   11 T        C  A                         4        17.4
15
   13 R  (Un1) A  C  R      *C  A          26    4   31.4     17.6
38   15
 ---------------------------------------------------------------------
-------
```

```
 South: PR-14  Ponce
   32 L       *A  B  L                     24        54.0Max
30
   31 T        A  B                         4        41.2
50
   33 R  (Un2) A  B          B  A  R        4    4   43.9     20.0Min
50   25
 ---------------------------------------------------------------------
-------
 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   23   48.8     54.0Max
6   50
 ---------------------------------------------------------------------
-------
 North: PR-14  Juana D?az
   42 L        A  B  L                     19        50.2
35
   41 T        A  B                         4        43.3
50
   43 R  (Un2) A  B          B  A  R        4    4   46.0     20.0Min
50   25
 ---------------------------------------------------------------------
-------
   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, AM Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  83


 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    1st   2nd     1st    2nd   (veh   Satn   Cap.
            /h)    Grn   Grn     Grn    Grn    /h)    xp     (%)    (%)
x
 ---------------------------------------------------------------------
--------
 West: Hospital de Distrito
   12 L     117   1786         0.066           323   0.90    148    100
0.362
   11 T       2     31         0.065             6   0.90    152    100
0.357
   13 R     180    452  1611   0.040  0.100    498   0.90    149    100
0.361
 ---------------------------------------------------------------------
--------
 South: PR-14  Ponce
   32 L     327    653         0.501           236   0.90    -35    100
1.385*
   31 T     606   1748         0.347          1053   0.90     56     42
0.575
   33 R      45    118    23   0.381  0.000     78   0.90     56     42
0.577
 ---------------------------------------------------------------------
--------
 East: Urb. Machuelo
   22 L      47   1737         0.027           126   0.90    140    100
0.374
   21 T      21    776         0.027            56   0.90    140    100
0.374
   23 R      39      0   173   0.252  0.224    104   0.90    141    100
0.374
 ---------------------------------------------------------------------
--------
 North: PR-14  Juana D?az
   42 L      16     59         0.271            25   0.90     40    100
0.643
   41 T    1102   2850         0.387          1717   0.90     40    100
0.642
   43 R     283    679   107   0.417  0.000    441   0.90     40    100
0.641
 ---------------------------------------------------------------------
--------
```

```
 Finca Barranca - Ponce, P.R.
 Int. PR-14 & Entrada Hopital de Distrito, AM Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  83
```

Table S.3 - INTERSECTION PARAMETERS

```
 ---------------------------------------------------------------------
----
    Crit App.  Green   Phases   Adjusted    Adjusted   Required
Required
    Mov   &    Period  ------     Lost        Flow     Grn Time
Movement
    No.  Turn          Fr  To     Time        Ratio     Ratio
Time
 ---------------------------------------------------------------------
----
     32  S_L           A   B       54           -          -
54.0Max
     23  E_R    1st    B   C        4        0.323      0.539
48.8
     13  W_R    2nd    C   A        4        0.100      0.164
17.6
                                  ----       ------     ------     ----
--
                           Total:   62        0.423      0.703
120.3
 ---------------------------------------------------------------------
----
   -  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        209         83

    Intersection Level of Service             =         D
    Worst movement Level of Service           =         F
    Average intersection delay (s)            =      40.3
    Largest average movement delay (s)        =     227.5
    Largest back of queue, 95% (m)            =       275
    Performance Index                         =    131.42
    Degree of saturation (highest)            =     1.385
    Practical Spare Capacity (lowest)         =       -35 %
    Total vehicle capacity, all lanes (veh/h) =      4662
    Total vehicle flow (veh/h)                =      2785
    Total person flow (pers/h)                =      4178
    Total vehicle delay (veh-h/h)             =     31.21
    Total person delay (pers-h/h)             =     46.82
    Total effective vehicle stops (veh/h)     =      2208
    Total effective person stops (pers/h)     =      3312
    Total vehicle travel (veh-km/h)           =    1685.1
    Total cost ($/h)                          =   1433.26
    Total fuel (L/h)                          =     216.4
    Total CO2 (kg/h)                          =    541.05
```

Finca Barranca - Ponce, P.R.
Int. PR-14 & Entrada Hopital de Distrito, AM Actual
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 83

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	50	54	0.651
B	54	58	6	10	0.120
C	64	68	15	19	0.229

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 Actual
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 83

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov 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)	Deg. Satn x	Lane Util %
West: Hospital de Distrito													
1 LT	12, 117	2	0	119		3.65	1911	1817	0	0	328	0.362	100
	11												
2 R	11, 0	0	180	180		3.65	1911	452	1611	43	498	0.361	100
	13												
South: PR-14 Ponce													
1 L	32, 327	0	0	327		3.65	1911	653	0	87	236	1.384	100
	31												
2 TR	31, 0	606	45	651		3.65	1911	1865	619	43	1131	0.576	42P
	33												
East: Urb. Machuelo													
1 LT	22, 47	2	0	49		3.65	1911	1819	0	0	131	0.374	100

```
          21
  2 TR    21,    0   19   39   58  3.65  1911  657   932   43  154
0.374  100
          23
 ---------------------------------------------------------------------
-------
  North: PR-14  Juana D?az
  1 LT    42,   16  679    0  695  3.65  1911 1835     0   44 1083
0.642  100
          41
  2 TR    41,    0  423  283  706  3.65  1911 1770   928   43 1100
0.642  100
          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-14 & Entrada Hopital de Distrito, AM Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  83


 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: Hospital de Distrito
   12 L         117   323   100  0.362   15        43.2  0.78    5.4
5.72
   11 T           2     6   100  0.357   15        34.3  0.71    5.4
0.09
   13 R  (Un1)  180   498   100  0.361   38   15*  17.4  0.81    5.1
6.00
 ---------------------------------------------------------------------
------
 South: PR-14  Ponce
   32 L         327   236   100  1.385*  30*      227.5  1.72   36.1
48.53
   31 T         606  1053    42  0.575   50        10.7  0.58   17.7
18.77
```

```
   33 R  (Un2)   45    78    42  0.577   50   25   19.7  0.83   17.7
1.57
 ---------------------------------------------------------------------
------
 East: Urb. Machuelo
   22 L          47   126   100  0.374    6        52.6  0.74    2.6
2.55
   21 T          21    56   100  0.374    6        22.4  0.69    2.6
0.76
   23 R  (Un2)   39   104   100  0.374    6*  50   28.4  0.77    1.9
1.48
 ---------------------------------------------------------------------
------
 North: PR-14  Juana D?az
   42 L          16    25   100  0.643   35        21.5  0.84   20.6
0.59
   41 T        1102  1717   100  0.642   50        11.5  0.62   20.6
35.63
   43 R  (Un2)  283   441   100  0.641   50   25   18.8  0.85   18.7
9.73
 ---------------------------------------------------------------------
------
   *  Maximum degree of saturation, or critical green periods
```

```
 Finca Barranca - Ponce, P.R.
 Int. PR-14 & Entrada Hopital de Distrito, AM Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  83


 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    117    2        119    0  1911   15      0.362   43.0    41
 2 R               180   180    1  1911   38  15  0.361   17.4    39
         -------------------------------------------------------------
----
         117    2  180   299    1                 0.362   27.6    41
30d
 ---------------------------------------------------------------------
----
  South: PR-14  Ponce
 1 L     327             327    0  1911   30      1.384  227.5   275
 2 TR         606   45   651    1  1911   50   1  0.576   11.4   136
```

```
         ------------------------------------------------------------
----
         327  606   45   978    1                1.384   83.6   275
 ---------------------------------------------------------------------
----
  East: Urb. Machuelo
 1 LT     47    2         49    0  1911    6      0.374   52.2    20
 2 TR          19   39    58    2  1911   11   6  0.374   25.6    15
30
         ------------------------------------------------------------
----
          47   21   39   107    1                0.374   37.8    20
 ---------------------------------------------------------------------
----
  North: PR-14  Juana D?az
 1 LT     16  679        695    1  1911   49      0.642   12.7   158
 2 TR         423  283   706    1  1911   50   3  0.642   13.3   143
         ------------------------------------------------------------
----
          16 1102  283  1401    1                0.642   13.0   158

=====================================================================
===
  ALL VEHICLES          Total   %       Cycle      Max   Aver.   Max
                        Flow   HV       Time        X    Delay  Queue
                        2785    1         83      1.385   40.3   275

=====================================================================
===
 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, AM Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  83


 Table S.15 - CAPACITY AND LEVEL OF SERVICE
 ------------------------------------------------------------
  Mov     Mov    Green Time  Total  Total    Deg.   Aver.   LOS
  No.     Typ    Ratio (g/C) Flow    Cap.     of    Delay
                ------------ (veh   (veh     Satn
                 1st   2nd     /h)    /h)    (v/c)  (sec)
                 grn   grn
 ------------------------------------------------------------
 West: Hospital de Distrito
```

```
  12 L        0.181           117    323   0.362    43.2    D
  11 T        0.181             2      6   0.357    34.3    C
  13 R  (Un1) 0.458  0.181*   180    498   0.361    17.4    B
              ------------------------------------------------
                              299    826   0.362    27.6    C
-------------------------------------------------------------
South: PR-14  Ponce
  32 L        0.361*          327    236   1.385*  227.5    F
  31 T        0.602           606   1053   0.575    10.7    B
  33 R  (Un2) 0.602  0.301     45     78   0.577    19.7    B
              ------------------------------------------------
                              978   1367   1.385    83.6    F
-------------------------------------------------------------
East: Urb. Machuelo
  22 L        0.072            47    126   0.374    52.6    D
  21 T        0.072            21     56   0.374    22.4    C
  23 R  (Un2) 0.072* 0.602     39    104   0.374    28.4    C
              ------------------------------------------------
                              107    286   0.374    37.8    D
-------------------------------------------------------------
North: PR-14  Juana D?az
  42 L        0.422            16     25   0.643    21.5    C
  41 T        0.602          1102   1717   0.642    11.5    B
  43 R  (Un2) 0.602  0.301    283    441   0.641    18.8    B
              ------------------------------------------------
                             1401   2183   0.643    13.0    B
-------------------------------------------------------------
  ALL VEHICLES:              2785   4662   1.385    40.3    D
-------------------------------------------------------------
  INTERSECTION (persons):    4178   4662   1.385    40.3
-------------------------------------------------------------
      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 Actual
Intersection ID:           *** UNREGISTERED VERSION ***
            Actuated Isolated Signals, Cycle Time =  83


Table D.0 - GEOMETRIC DELAY DATA
-----------------------------------------------------------------
                          Negn  Negn   Negn   Appr.  Downstream
 From         To         Radius Speed  Dist.  Dist.   Distance
 Approach     Approach     (m)  (km/h)  (m)    (m)       (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	18.4	15.7	500	105

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.

--- 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

	L E F T		THROUGH		R I G H T	
	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     Mov    P H A S E  M A T R I X    Lost Tim  Req.Mov.Time
Eff. Grn
  No.     Typ  First Green   Second Green  --------  ------------     -
-------
               ------------  ------------  1st  2nd  1st      2nd
1st  2nd
               Fr To Op Pr   Fr To Op Pr   Grn  Grn  Grn      Grn
Grn  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    1st   2nd     1st    2nd   (veh   Satn   Cap.
            /h)    Grn   Grn     Grn    Grn    /h)    xp     (%)    (%)
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   &    Period  ------     Lost        Flow     Grn Time
Movement
    No.  Turn          Fr  To     Time        Ratio     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 No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. (tcu)	Aver Basic (veh)	1st (veh)	2nd (veh)	End Cap /h)	Tot Cap /h)	Deg. Satn x	Lane Util %
West: Hospital de Distrito														
1 LT	12, 11	230	3	0	233	3.65	1911	1816	0	0	435		0.535	100
2 R	11, 13	0	0	270	270	3.65	1911	718	1620	38	665		0.406	76P
South: PR-14 Ponce														
1 LT	32, 31	51	416	0	467	3.65	1911	1724	0	42	700		0.667	100
2 TR	31, 33	0	490	154	644	3.65	1911	1824	1484	38	966		0.667	100
East: Urb. Machuelo														
1 L	22, 21	80	0	0	80	3.65	1911	1815	0	0	208		0.385	100
2 TR	21, 23	0	2	73	75	3.65	1911	442<	334<	38	204		0.367	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     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: 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   %       Cycle      Max   Aver.   Max
                        Flow   HV       Time        X    Delay  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     Mov    Green Time  Total  Total    Deg.   Aver.   LOS
  No.     Typ    Ratio (g/C) Flow    Cap.     of    Delay
                ------------ (veh   (veh     Satn
                 1st   2nd     /h)    /h)    (v/c)  (sec)
                 grn   grn
 ---------------------------------------------------------------
 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   10:34 AM, Jun  5,2003

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

 Finca Barranca - Ponce, P.R.
 Int. PR-14 & Entrada Hopital de Distrito, PM Actual
 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 =  4
   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 = 0 secs)
```

```
 Finca Barranca - Ponce, P.R.
 Int. PR-14 & Entrada Hopital de Distrito, PM Actual
 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

	L E F T		THROUGH		R I G H T	
	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 Actual
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 66

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
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	1	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     56     0   1.00   0.96
 ----------------------------------------------------------------------
--
 East: Urb. Machuelo
         22            38     0      0     0      0     0   1.00   0.96
         21             0     0      1     0      0     0   1.00   0.96
         23             0     0      0     0     34     0   1.00   0.96
 ----------------------------------------------------------------------
--
 North: PR-14  Juana D?az
         42            30     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 Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  66


 Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS
 ----------------------------------------------------------------------
-------
  Mov     Mov    P H A S E  M A T R I X    Lost Tim  Req.Mov.Time
Eff. Grn
  No.     Typ  First Green   Second Green  --------  ------------     -
-------
               ------------  ------------  1st  2nd  1st      2nd
1st  2nd
               Fr To Op Pr   Fr To Op Pr   Grn  Grn  Grn      Grn
Grn  Grn
 ----------------------------------------------------------------------
-------
 West: Hospital de Distrito
   12 L        C  A                         4        20.5
17
   11 T       *C  A                         4        20.6
17
   13 R  (Un1) A  C  R       C  A          15    4   20.0Min  20.0
30   17
 ----------------------------------------------------------------------
-------
 South: PR-14  Ponce
   32 L       *A  B  L                     14        35.3
21
```

```
   31 T        A  B                        4        31.1
31
   33 R  (Un2) A  B          B  A  R       4    4   30.8     20.0Min
31   27
 ---------------------------------------------------------------------
-------
 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   24   10.0Min  20.0Min
6   32
 ---------------------------------------------------------------------
-------
 North: PR-14  Juana D?az
   42 L        A  B  L                    17        33.9
18
   41 T        A  B                        4        27.4
31
   43 R  (Un2) A  B          B  A  R       4    4   26.8     20.0Min
31   27
 ---------------------------------------------------------------------
-------
   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 Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  66


 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    1st   2nd     1st    2nd   (veh   Satn   Cap.
            /h)    Grn   Grn     Grn    Grn    /h)    xp     (%)    (%)
x
 ---------------------------------------------------------------------
--------
 West: Hospital de Distrito
   12 L     230   1808         0.127           466   0.90     82    100
0.494
   11 T       1      8         0.125             2   0.90     85     74
0.485
   13 R     270    708  1620   0.000  0.167    739   0.90    146     74
0.365
 ---------------------------------------------------------------------
--------
 South: PR-14  Ponce
   32 L      51    257         0.198            82   0.90     44    100
0.624
   31 T     906   3091         0.293          1452   0.90     44    100
0.624
   33 R      56    169    25   0.331  0.000     90   0.90     44    100
0.625*
 ---------------------------------------------------------------------
--------
 East: Urb. Machuelo
   22 L      38   1815         0.021           165   0.90    291    100
0.230
   21 T       1     93<        0.011             8   0.90    661     51
0.118
   23 R      34   2549<  117<  0.013  0.000    288   0.90    664     51
0.118
 ---------------------------------------------------------------------
--------
 North: PR-14  Juana D?az
   42 L      31    243         0.128            66   0.90     92    100
0.468
   41 T     658   2994         0.220          1406   0.90     92    100
0.468
   43 R      57    232    31   0.246  0.000    122   0.90     92    100
0.469
 ---------------------------------------------------------------------
--------
   <  Reduced saturation flow due to a short lane effect
```

```
 Finca Barranca - Ponce, P.R.
 Int. PR-14 & Entrada Hopital de Distrito, PM Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  66


 Table S.3 - INTERSECTION PARAMETERS
 ---------------------------------------------------------------------
----
    Crit App.  Green   Phases   Adjusted    Adjusted   Required
Required
```

```
    Mov   &    Period  ------     Lost        Flow     Grn Time
Movement
    No.  Turn          Fr  To     Time        Ratio     Ratio
Time
 ---------------------------------------------------------------------
----
     32  S_L           A   B       14        0.198      0.322
35.3
     22  E_L           B   C       10           -          -
10.0Min
     11  W_T           C   A        4        0.125      0.252
20.6
                                  ----       ------     ------     ----
--
                           Total:   28        0.323      0.574
65.9
 ---------------------------------------------------------------------
----
   -  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         66         66

    Intersection Level of Service             =         B
    Worst movement Level of Service           =         D
    Average intersection delay (s)            =      17.2
    Largest average movement delay (s)        =      41.9
    Largest back of queue, 95% (m)            =       115
    Performance Index                         =     76.26
    Degree of saturation (highest)            =     0.625
    Practical Spare Capacity (lowest)         =        44 %
    Total vehicle capacity, all lanes (veh/h) =      4886
    Total vehicle flow (veh/h)                =      2333
    Total person flow (pers/h)                =      3500
    Total vehicle delay (veh-h/h)             =     11.17
    Total person delay (pers-h/h)             =     16.76
    Total effective vehicle stops (veh/h)     =      1665
    Total effective person stops (pers/h)     =      2497
    Total vehicle travel (veh-km/h)           =    1412.0
    Total cost ($/h)                          =    844.69
    Total fuel (L/h)                          =     158.3
    Total CO2 (kg/h)                          =    395.89
```

```
 Finca Barranca - Ponce, P.R.
 Int. PR-14 & Entrada Hopital de Distrito, PM Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  66


 Table S.4 - PHASE INFORMATION
 ------------------------------------------------
```

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	31	35	0.530
B	35	39	6	10	0.152
C	45	49	17	21	0.318

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 Actual
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 66

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. (tcu)	Aver Basic (veh)	Aver 1st (veh)	Aver 2nd (veh)	End Cap /h)	Tot Cap /h)	Deg. Satn x	Lane Util %
West: Hospital de Distrito														
1 LT	12, 11	230	1	0	231	3.65	1911	1815		0	0	468	0.494	100
2 R	11, 13	0	0	270	270	3.65	1911	708	1620		55	739	0.365	74P
South: PR-14 Ponce														
1 LT	32, 31	51	408	0	459	3.65	1911	1673		0	61	735	0.624	100
2 TR	31, 33	0	498	56	554	3.65	1911	1866	757		55	888	0.624	100
East: Urb. Machuelo														
1 L	22, 21	38	0	0	38	3.65	1911	1815		0	0	165	0.230	100
2 TR	21, 23	0	1	34	35	3.65	1911	543<	644<		55	297	0.118	51P

```
 ---------------------------------------------------------------------
-------
  North: PR-14  Juana D?az
  1 LT    42,   31  301    0  332  3.65  1911 1673     0   60  710
0.468  100
          41
  2 TR    41,    0  357   57  414  3.65  1911 1853   927   55  885
0.468  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 Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  66


 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: Hospital de Distrito
   12 L         230   466   100  0.494   17        32.9  0.81    7.9
9.44
   11 T           1     2    74  0.485   17*       24.0  0.73    7.9
0.04
   13 R  (Un1)  270   739    74  0.365   30   17   12.5  0.78    4.3
6.91
 ---------------------------------------------------------------------
------
 South: PR-14  Ponce
   32 L          51    82   100  0.624   21*       25.3  0.84   13.6
1.90
   31 T         906  1452   100  0.624   31        15.0  0.70   15.1
30.02
   33 R  (Un2)   56    90   100  0.625*  31   27   23.0  0.85   15.1
1.99
```

```
 ---------------------------------------------------------------------
------
 East: Urb. Machuelo
   22 L          38   165   100  0.230    6*       41.9  0.73    1.6
1.73
   21 T           1     8<   51  0.118    6         6.4  0.39    0.6
0.02
   23 R  (Un2)   34   288<   51  0.118    6   32   14.8  0.74    0.6
0.89
 ---------------------------------------------------------------------
------
 North: PR-14  Juana D?az
   42 L          31    66   100  0.468   18        24.6  0.82    9.4
1.11
   41 T         658  1406   100  0.468   31        13.6  0.63   10.3
20.32
   43 R  (Un2)   57   122   100  0.469   31   27   21.0  0.82   10.3
1.89
 ---------------------------------------------------------------------
------
   <  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 Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  66


 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    1        231    0  1911   17      0.494   32.9    60
 2 R               270   270    0  1911   30  17  0.365   12.5    32
         -------------------------------------------------------------
----
         230    1  270   501    0                 0.494   21.9    60
30d
 ---------------------------------------------------------------------
----
  South: PR-14  Ponce
 1 LT     51  408        459    1  1911   29      0.624   17.3   104
 2 TR         498   56   554    1  1911   31   1  0.624   14.9   115
         -------------------------------------------------------------
----
```

```
          51  906   56  1013    1                 0.624   16.0   115
 ---------------------------------------------------------------------
----
  East: Urb. Machuelo
 1 L      38              38    0  1911    6      0.230   41.9    12
 2 TR           1   34    35    0  1911   29   6  0.118   14.6     4
30
         -------------------------------------------------------------
----
          38    1   34    73    0                 0.230   28.8    12
 ---------------------------------------------------------------------
----
  North: PR-14  Juana D?az
 1 LT     31  301        332    1  1911   28      0.468   16.4    72
 2 TR         357   57   414    1  1911   31   1  0.468   13.3    78
         -------------------------------------------------------------
----
          31  658   57   746    1                 0.468   14.7    78

=====================================================================
===
  ALL VEHICLES          Total   %       Cycle      Max   Aver.   Max
                        Flow   HV       Time        X    Delay  Queue
                        2333    1         66      0.625   17.2   115

=====================================================================
===
 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 Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  66


 Table S.15 - CAPACITY AND LEVEL OF SERVICE
 ---------------------------------------------------------------
  Mov     Mov    Green Time  Total  Total    Deg.   Aver.   LOS
  No.     Typ    Ratio (g/C) Flow    Cap.     of    Delay
                ------------ (veh   (veh     Satn
                 1st   2nd     /h)    /h)    (v/c)  (sec)
                 grn   grn
 ---------------------------------------------------------------
 West: Hospital de Distrito
   12 L        0.258           230    466   0.494    32.9    C
   11 T        0.258*            1      2   0.485    24.0    C
```

```
  13 R  (Un1) 0.455  0.258    270    739   0.365    12.5    B
              ----------------------------------------------
                               501   1207   0.494    21.9    C
-------------------------------------------------------------
South: PR-14  Ponce
  32 L        0.318*           51     82   0.624    25.3    C
  31 T        0.470           906   1452   0.624    15.0    B
  33 R  (Un2) 0.470  0.409     56     90   0.625*   23.0    C
              ----------------------------------------------
                              1013   1623   0.625    16.0    B
-------------------------------------------------------------
East: Urb. Machuelo
  22 L        0.091*           38    165   0.230    41.9    D
  21 T        0.091             1      8<  0.118     6.4    A
  23 R  (Un2) 0.091  0.485     34    288<  0.118    14.8    B
              ----------------------------------------------
                               73    462   0.230    28.8    C
-------------------------------------------------------------
North: PR-14  Juana D?az
  42 L        0.273            31     66   0.468    24.6    C
  41 T        0.470           658   1406   0.468    13.6    B
  43 R  (Un2) 0.470  0.409     57    122   0.469    21.0    C
              ----------------------------------------------
                              746   1594   0.469    14.7    B
-------------------------------------------------------------
  ALL VEHICLES:              2333   4886   0.625    17.2    B
-------------------------------------------------------------
  INTERSECTION (persons):    3500   4886   0.625    17.2
-------------------------------------------------------------
     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 Actual
Intersection ID:           *** UNREGISTERED VERSION ***
            Actuated Isolated Signals, Cycle Time =  66


Table D.0 - GEOMETRIC DELAY DATA
----------------------------------------------------------------
                            Negn  Negn   Negn   Appr.  Downstream
 From         To          Radius Speed  Dist.  Dist.   Distance
 Approach     Approach      (m)  (km/h)  (m)    (m)       (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	106

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   10:06 AM, Jun  5,2003

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

 Finca Barranca - Ponce, P.R.
 Int. PR-1 & Ave. La Ceiba, AM 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 =  4
   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 = 0 secs)
```

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

	L E F T		THROUGH		R I G H T	
	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, AM Proyectado
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 92

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES	Demand flows in veh/hour as used by the program							
West: PR-1 PONCE								
12	209	1	0	0	0	0	1.00	0.95
11	0	0	826	38	0	0	1.00	0.95
13	0	0	0	0	102	8	1.00	0.95

```
 ----------------------------------------------------------------------
--
 South: AVE. LA CEIBA
         32           113     2      0     0      0     0   1.00   0.95
         31             0     0     84     1      0     0   1.00   0.95
         33             0     0      0     0    207     6   1.00   0.95
 ----------------------------------------------------------------------
--
 East: PR-1 MERCEDITA
         22           186     7      0     0      0     0   1.00   0.95
         21             0     0   1547    33      0     0   1.00   0.95
         23             0     0      0     0    774     8   1.00   0.95
 ----------------------------------------------------------------------
--
 North: AVE. LA CEIBA
         42           360     9      0     0      0     0   1.00   0.95
         41             0     0     75     0      0     0   1.00   0.95
         43             0     0      0     0    161     1   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, AM Proyectado
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  92


 Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS
 ----------------------------------------------------------------------
-------
  Mov     Mov    P H A S E  M A T R I X    Lost Tim  Req.Mov.Time
Eff. Grn
  No.     Typ  First Green   Second Green  --------  ------------     -
-------
               ------------  ------------  1st  2nd  1st      2nd
1st  2nd
               Fr To Op Pr   Fr To Op Pr   Grn  Grn  Grn      Grn
Grn  Grn
 ----------------------------------------------------------------------
-------
 West: PR-1 PONCE
   12 L       *A  B                        4        24.0Max
20
   11 T        B  C                        4        30.9
34
   13 R  (Un2) B  C          C  B  R       4   13   28.6     20.0Min
34   41
 ----------------------------------------------------------------------
-------
 South: AVE. LA CEIBA
   32 L        C  A  L                     9        26.9
21
```

```
   31 T        C  A                          4        14.4
26
   33 R  (Un1) A  C  R       C  A          17    4   20.0Min  26.0
45   26
 ---------------------------------------------------------------------
-------
 East: PR-1 MERCEDITA
   22 L        A  B                          4        23.9
20
   21 T        B  C                          4        37.7
34
   23 R  (Un2)*B  C          C  B  R        4   16   37.7     38.6
34   38
 ---------------------------------------------------------------------
-------
 North: AVE. LA CEIBA
   42 L       *C  A  L                       7        30.3
23
   41 T        C  A                          4        25.4
26
   43 R  (Un1) A  C  R       C  A          27    4   20.0Min  24.2
35   26
 ---------------------------------------------------------------------
-------
   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, AM Proyectado
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  92


 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    1st   2nd     1st    2nd   (veh   Satn   Cap.
            /h)    Grn   Grn     Grn    Grn    /h)    xp     (%)    (%)
x
 ---------------------------------------------------------------------
--------
 West: PR-1 PONCE
   12 L     210   1807         0.116           393   0.90     68    100
0.535
   11 T     864   4836         0.179          1787   0.90     86    100
0.483
   13 R     110    550    54   0.200  0.000    227   0.90     86    100
0.484
 ---------------------------------------------------------------------
--------
 South: AVE. LA CEIBA
   32 L     115   1349         0.085           308   0.90    141    100
0.373
   31 T      85   1888         0.045           534   0.90    465     43
0.159
   33 R     213    876  1593   0.000  0.134    879   0.90    271     65
0.242
 ---------------------------------------------------------------------
--------
 East: PR-1 MERCEDITA
   22 L     193   1758         0.110           382   0.90     78    100
0.505
   21 T    1580   5614         0.281          2075   0.90     18    100
0.762*
   23 R     782   1612  1069   0.336  0.225   1037   0.90     19    100
0.754
 ---------------------------------------------------------------------
--------
 North: AVE. LA CEIBA
   42 L     369   2587         0.143           647   0.90     58    100
0.571
   41 T      75    634         0.118           179   0.90    115     73
0.419
   43 R     162    211  1086   0.000  0.149    387   0.90    115     73
0.418
 ---------------------------------------------------------------------
--------
```

```
 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.3 - INTERSECTION PARAMETERS
 ---------------------------------------------------------------------
----
    Crit App.  Green   Phases   Adjusted    Adjusted   Required
Required
```

```
    Mov   &    Period  ------     Lost        Flow     Grn Time
Movement
    No.  Turn          Fr  To     Time        Ratio     Ratio
Time
 ---------------------------------------------------------------------
----
     12  W_L           A   B       24           -          -
24.0Max
     23  E_R    1st    B   C        4        0.336      0.366
37.7
     42  N_L           C   A        7        0.143      0.253
30.3
                                  ----       ------     ------     ----
--
                           Total:   35        0.479      0.619
92.0
 ---------------------------------------------------------------------
----
   -  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         92         92

    Intersection Level of Service             =         C
    Worst movement Level of Service           =         D
    Average intersection delay (s)            =      27.5
    Largest average movement delay (s)        =      45.1
    Largest back of queue, 95% (m)            =       180
    Performance Index                         =    203.52
    Degree of saturation (highest)            =     0.762
    Practical Spare Capacity (lowest)         =        18 %
    Total vehicle capacity, all lanes (veh/h) =      8835
    Total vehicle flow (veh/h)                =      4758
    Total person flow (pers/h)                =      7137
    Total vehicle delay (veh-h/h)             =     36.37
    Total person delay (pers-h/h)             =     54.56
    Total effective vehicle stops (veh/h)     =      3781
    Total effective person stops (pers/h)     =      5671
    Total vehicle travel (veh-km/h)           =    2880.3
    Total cost ($/h)                          =   2036.07
    Total fuel (L/h)                          =     366.4
    Total CO2 (kg/h)                          =    916.92
```

```
 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.4 - PHASE INFORMATION
 ---------------------------------------------------
```

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	20	24	0.261
B	24	28	34	38	0.413
C	62	66	26	30	0.326

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

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. (tcu)	Aver Basic (veh)	Aver 1st (veh)	Aver 2nd (veh)	End Cap /h)	Tot Cap /h)	Deg. Satn x	Lane Util %
West: PR-1 PONCE														
1 L	12	210	0	0	210	3.65	1911	1807	0	0	393		0.535	100
2 T	11	0	327	0	327	3.65	1911	1830	0	0	676		0.483	100
3 T	11	0	327	0	327	3.65	1911	1830	0	0	676		0.483	100
4 TR	11, 13	0	210	110	320	3.65	1911	1721	1197	39	662		0.483	100
South: AVE. LA CEIBA														
1 L	32, 31	115	0	0	115	3.65	1911	1349	0	78	308		0.373	100
2 T	31	0	85	0	85	3.65	1911	1888	0	0	534		0.159	43P
3 R	31, 33	0	0	213	213	3.65	1911	876	1593	39	879		0.242	65P
East: PR-1 MERCEDITA														

```
  1 L     22   193    0    0  193  3.65  1911 1758     0    0  382
0.505  100
  2 T     21     0  527    0  527  3.65  1911 1871     0    0  692
0.761  100
  3 T     21     0  527    0  527  3.65  1911 1871     0    0  692
0.761  100
  4 T     21     0  527    0  527  3.65  1911 1871     0    0  692
0.761  100
  5 R     23     0    0  782  782  3.65  1911 1612  1069   39 1037
0.754  100
 ---------------------------------------------------------------------
-------
  North: AVE. LA CEIBA
  1 L     42   185    0    0  185  3.65  1911 1294     0   78  323
0.571  100
  2 L     42,  185    0    0  185  3.65  1911 1294     0   78  323
0.571  100
          41
  3 TR    41,    0   75  162  237  3.65  1911  988  1700   39  566
0.419   73P
          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, AM Proyectado
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  92


 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         210   393   100  0.535   20*       45.1  0.81   10.2
10.93
   11 T         864  1787   100  0.483   34        23.9  0.69   13.2
35.56
```

```
   13 R  (Un2)  110   227   100  0.484   34   41   29.7  0.84   11.5
4.58
 ---------------------------------------------------------------------
------
 South: AVE. LA CEIBA
   32 L         115   308   100  0.373   21        43.2  0.79    5.6
5.80
   31 T          85   534    43  0.159   26        27.7  0.60    3.6
3.56
   33 R  (Un1)  213   879    65  0.242   45   26   11.6  0.75    3.0
5.18
 ---------------------------------------------------------------------
------
 East: PR-1 MERCEDITA
   22 L         193   382   100  0.505   20        45.0  0.81    9.4
10.01
   21 T        1580  2075   100  0.762*  34        29.2  0.82   23.0
73.15
   23 R  (Un2)  782  1037   100  0.754   34*  38   15.4  0.88   23.4
28.12
 ---------------------------------------------------------------------
------
 North: AVE. LA CEIBA
   42 L         369   647   100  0.571   23*       43.3  0.81    9.0
19.04
   41 T          75   179    73  0.419   26        14.2  0.68    5.7
2.24
   43 R  (Un1)  162   387    73  0.418   35   26   23.2  0.82    5.7
5.35
 ---------------------------------------------------------------------
------
   *  Maximum degree of saturation, 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 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: PR-1 PONCE
 1 L     210             210    0  1910   20      0.535   45.1    78
100
 2 T          327        327    4  1910   34      0.483   25.0   104
```

```
 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   %       Cycle      Max   Aver.   Max
                        Flow   HV       Time        X    Delay  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 (g/C) 1st grn	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		0.217*		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   10:02 AM, Jun  5,2003

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

 Finca Barranca - Ponce, P.R.
 Int. PR-1 & Ave. La Ceiba, AM Actual
 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 =  4
   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 = 0 secs)
```

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

	L E F T		THROUGH		R I G H T	
	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, AM Actual
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 93

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES	Demand flows in veh/hour as used by the program							
West: PR-1 PONCE								
12	202	1	0	0	0	0	1.00	0.95
11	0	0	826	38	0	0	1.00	0.95
13	0	0	0	0	102	8	1.00	0.95

```
 ----------------------------------------------------------------------
--
 South: AVE. LA CEIBA
         32           113     2      0     0      0     0   1.00   0.95
         31             0     0     81     1      0     0   1.00   0.95
         33             0     0      0     0    207     6   1.00   0.95
 ----------------------------------------------------------------------
--
 East: PR-1 MERCEDITA
         22           186     7      0     0      0     0   1.00   0.95
         21             0     0   1547    33      0     0   1.00   0.95
         23             0     0      0     0    744     8   1.00   0.95
 ----------------------------------------------------------------------
--
 North: AVE. LA CEIBA
         42           371     9      0     0      0     0   1.00   0.95
         41             0     0     60     0      0     0   1.00   0.95
         43             0     0      0     0    128     1   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, AM Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  93


 Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS
 ----------------------------------------------------------------------
-------
  Mov     Mov    P H A S E  M A T R I X    Lost Tim  Req.Mov.Time
Eff. Grn
  No.     Typ  First Green   Second Green  --------  ------------     -
-------
               ------------  ------------  1st  2nd  1st      2nd
1st  2nd
               Fr To Op Pr   Fr To Op Pr   Grn  Grn  Grn      Grn
Grn  Grn
 ----------------------------------------------------------------------
-------
 West: PR-1 PONCE
   12 L       *A  B                        4        24.0Max
20
   11 T        B  C                        4        31.1
34
   13 R  (Un2) B  C          C  B  R       4   14   28.7     20.0Min
34   41
 ----------------------------------------------------------------------
-------
 South: AVE. LA CEIBA
   32 L        C  A  L                     8        25.8
23
```

```
   31 T        C  A                          4        14.1
27
   33 R  (Un1) A  C  R       C  A          17    4   20.0Min  26.3
45   27
 ---------------------------------------------------------------------
-------
 East: PR-1 MERCEDITA
   22 L        A  B                          4        24.0Max
20
   21 T        B  C                          4        38.0
34
   23 R  (Un2)*B  C          C  B  R        4   16   38.0     37.4
34   39
 ---------------------------------------------------------------------
-------
 North: AVE. LA CEIBA
   42 L       *C  A  L                       7        30.9
24
   41 T        C  A                          4        23.4
27
   43 R  (Un1) A  C  R       C  A          27    4   20.0Min  22.3
35   27
 ---------------------------------------------------------------------
-------
   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, AM Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  93


 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    1st   2nd     1st    2nd   (veh   Satn   Cap.
            /h)    Grn   Grn     Grn    Grn    /h)    xp     (%)    (%)
x
 ---------------------------------------------------------------------
--------
 West: PR-1 PONCE
   12 L     203   1807         0.112           389   0.90     72    100
0.522
   11 T     864   4836         0.179          1768   0.90     84    100
0.489
   13 R     110    550    54   0.200  0.000    225   0.90     84    100
0.489
 ---------------------------------------------------------------------
--------
 South: AVE. LA CEIBA
   32 L     115   1408         0.082           348   0.90    173    100
0.330
   31 T      82   1888         0.043           548   0.90    502     45
0.150
   33 R     213    874  1593   0.000  0.134    885   0.90    274     73
0.241
 ---------------------------------------------------------------------
--------
 East: PR-1 MERCEDITA
   22 L     193   1758         0.110           378   0.90     76    100
0.510
   21 T    1580   5614         0.281          2052   0.90     17    100
0.770*
   23 R     752   1612  1083   0.328  0.206   1043   0.90     25    100
0.721
 ---------------------------------------------------------------------
--------
 North: AVE. LA CEIBA
   42 L     380   2587         0.147           668   0.90     58    100
0.569
   41 T      60    632         0.095           183   0.90    175     57
0.327
   43 R     129    211  1085   0.000  0.119    394   0.90    175     57
0.327
 ---------------------------------------------------------------------
--------
```

```
 Finca Barranca - Ponce, P.R.
 Int. PR-1 & Ave. La Ceiba, AM Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  93


 Table S.3 - INTERSECTION PARAMETERS
 ---------------------------------------------------------------------
----
    Crit App.  Green   Phases   Adjusted    Adjusted   Required
Required
```

```
    Mov   &    Period  ------     Lost        Flow     Grn Time
Movement
    No.  Turn          Fr  To     Time        Ratio     Ratio
Time
 ---------------------------------------------------------------------
----
     12  W_L           A   B       24           -          -
24.0Max
     23  E_R    1st    B   C        4        0.328      0.365
38.0
     42  N_L           C   A        7        0.147      0.257
30.9
                                  ----       ------     ------     ----
--
                           Total:   35        0.475      0.622
92.9
 ---------------------------------------------------------------------
----
   -  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         93         93

    Intersection Level of Service             =         C
    Worst movement Level of Service           =         D
    Average intersection delay (s)            =      27.8
    Largest average movement delay (s)        =      45.6
    Largest back of queue, 95% (m)            =       180
    Performance Index                         =    201.61
    Degree of saturation (highest)            =     0.770
    Practical Spare Capacity (lowest)         =        17 %
    Total vehicle capacity, all lanes (veh/h) =      8883
    Total vehicle flow (veh/h)                =      4681
    Total person flow (pers/h)                =      7022
    Total vehicle delay (veh-h/h)             =     36.14
    Total person delay (pers-h/h)             =     54.22
    Total effective vehicle stops (veh/h)     =      3701
    Total effective person stops (pers/h)     =      5551
    Total vehicle travel (veh-km/h)           =    2833.9
    Total cost ($/h)                          =   2010.40
    Total fuel (L/h)                          =     361.2
    Total CO2 (kg/h)                          =    903.83
```

```
 Finca Barranca - Ponce, P.R.
 Int. PR-1 & Ave. La Ceiba, AM Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  93


 Table S.4 - PHASE INFORMATION
 ---------------------------------------------------
```

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	20	24	0.258
B	24	28	34	38	0.409
C	62	66	27	31	0.333

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, AM Actual
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 93

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. (tcu)	Aver Basic (veh)	Aver 1st (veh)	Aver 2nd (veh)	End Cap /h)	Tot Cap /h)	Deg. Satn x	Lane Util %
West: PR-1 PONCE														
1 L	12	203	0	0	203	3.65	1911	1807		0	0	389	0.522	100
2 T	11	0	327	0	327	3.65	1911	1830		0	0	669	0.489	100
3 T	11	0	327	0	327	3.65	1911	1830		0	0	669	0.489	100
4 TR	11, 13	0	210	110	320	3.65	1911	1721	1197	39	655		0.489	100
South: AVE. LA CEIBA														
1 L	32, 31	115	0	0	115	3.65	1911	1408		0	77	348	0.330	100
2 T	31	0	82	0	82	3.65	1911	1888		0	0	548	0.150	45P
3 R	31, 33	0	0	213	213	3.65	1911	874	1593	39	885		0.241	73P
East: PR-1 MERCEDITA														

```
  1 L     22   193    0    0  193  3.65  1911 1758     0    0  378
0.511  100
  2 T     21     0  527    0  527  3.65  1911 1871     0    0  684
0.770  100
  3 T     21     0  527    0  527  3.65  1911 1871     0    0  684
0.770  100
  4 T     21     0  527    0  527  3.65  1911 1871     0    0  684
0.770  100
  5 R     23     0    0  752  752  3.65  1911 1612  1083   39 1043
0.721  100
 ---------------------------------------------------------------------
-------
  North: AVE. LA CEIBA
  1 L     42   190    0    0  190  3.65  1911 1294     0   77  334
0.569  100
  2 L     42,  190    0    0  190  3.65  1911 1294     0   77  334
0.569  100
          41
  3 TR    41,    0   60  129  189  3.65  1911  985  1699   39  578
0.327   57P
          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, AM Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  93


 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         203   389   100  0.522   20*       45.6  0.81   10.0
10.64
   11 T         864  1768   100  0.489   34        24.5  0.69   13.4
36.05
```

```
   13 R  (Un2)  110   225   100  0.489   34   41   30.4  0.84   11.8
4.64
 ---------------------------------------------------------------------
------
 South: AVE. LA CEIBA
   32 L         115   348   100  0.330   23        41.5  0.78    5.4
5.67
   31 T          82   548    45  0.150   27        27.3  0.59    3.5
3.42
   33 R  (Un1)  213   885    73  0.241   45   27   11.6  0.75    3.0
5.18
 ---------------------------------------------------------------------
------
 East: PR-1 MERCEDITA
   22 L         193   378   100  0.510   20        45.6  0.81    9.5
10.11
   21 T        1580  2052   100  0.770*  34        29.9  0.82   23.3
74.15
   23 R  (Un2)  752  1043   100  0.721   34*  39   14.5  0.85   22.0
26.31
 ---------------------------------------------------------------------
------
 North: AVE. LA CEIBA
   42 L         380   668   100  0.569   24*       43.0  0.82    9.3
19.61
   41 T          60   183    57  0.327   27        12.7  0.63    4.4
1.71
   43 R  (Un1)  129   394    57  0.327   35   27   21.7  0.80    4.4
4.12
 ---------------------------------------------------------------------
------
   *  Maximum degree of saturation, or critical green periods
```

```
 Finca Barranca - Ponce, P.R.
 Int. PR-1 & Ave. La Ceiba, AM Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time =  93


 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: PR-1 PONCE
 1 L     203             203    0  1910   20      0.522   45.6    76
100
 2 T          327        327    4  1910   34      0.489   25.6   106
```

```
 3 T          327        327    4  1910   34      0.489   25.6   106
 4 TR         210  110   320    5  1911   34   2  0.489   24.3    93
         ------------------------------------------------------------
----
         203  864  110  1177    4                 0.522   28.7   106
 -------------------------------------------------------------------
----
  South: AVE. LA CEIBA
 1 L     115            115    2  1911   23      0.330   41.5    42
 2 T           82        82    1  1911   27      0.150   27.3    27
 3 R               213  213    3  1911   45  27  0.241   11.6    23
         ------------------------------------------------------------
----
         115   82  213  410    2                 0.330   23.1    42
 -------------------------------------------------------------------
----
  East: PR-1 MERCEDITA
 1 L     193            193    4  1910   20      0.511   45.6    74
100
 2 T          527        527    2  1910   34      0.770   29.9   180
 3 T          527        527    2  1910   34      0.770   29.9   180
 4 T          527        527    2  1910   34      0.770   29.9   180
 5 R               752  752    1  1910   34  39  0.721   14.5   169
         ------------------------------------------------------------
----
         193 1580  752 2525    2                 0.770   26.5   180
 -------------------------------------------------------------------
----
  North: AVE. LA CEIBA
 1 L     190            190    2  1910   24      0.569   43.0    72
 2 L     190            190    2  1911   24      0.569   43.0    72
 3 TR          60  129  189    1  1911    8  27  0.327   18.8    33
         ------------------------------------------------------------
----
         380   60  129  569    2                 0.569   35.0    72

=====================================================================
===
  ALL VEHICLES          Total   %       Cycle      Max   Aver.   Max
                        Flow   HV       Time        X    Delay  Queue
                        4681    2         93      0.770   27.8   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.

_____________________________________________________________________
________

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

Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 93

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio (g/C) 1st grn	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		0.215*		203	389	0.522	45.6	D
11 T		0.366		864	1768	0.489	24.5	C
13 R	(Un2)	0.366	0.441	110	225	0.489	30.4	C
				1177	2381	0.522	28.7	C
South: AVE. LA CEIBA								
32 L		0.247		115	348	0.330	41.5	D
31 T		0.290		82	548	0.150	27.3	C
33 R	(Un1)	0.484	0.290	213	885	0.241	11.6	B
				410	1782	0.330	23.1	C
East: PR-1 MERCEDITA								
22 L		0.215		193	378	0.510	45.6	D
21 T		0.366		1580	2052	0.770*	29.9	C
23 R	(Un2)	0.366*	0.419	752	1043	0.721	14.5	B
				2525	3474	0.770	26.5	C
North: AVE. LA CEIBA								
42 L		0.258*		380	668	0.569	43.0	D
41 T		0.290		60	183	0.327	12.7	B
43 R	(Un1)	0.376	0.290	129	394	0.327	21.7	C
				569	1246	0.569	35.0	C
ALL VEHICLES:				4681	8883	0.770	27.8	C
INTERSECTION (persons):				7022	8883	0.770	27.8	

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, AM Actual

Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 93

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	104
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
```

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

	L E F T		THROUGH		R I G H T	
	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     Mov    P H A S E  M A T R I X    Lost Tim  Req.Mov.Time
Eff. Grn
  No.     Typ  First Green   Second Green  --------  ------------     -
-------
               ------------  ------------  1st  2nd  1st      2nd
1st  2nd
               Fr To Op Pr   Fr To Op Pr   Grn  Grn  Grn      Grn
Grn  Grn
 ---------------------------------------------------------------------
-------
 West: PR-1 PONCE
   12 L       *A  B                         4        24.0Max
20
   11 T        B  C                         4        39.4
36
   13 R  (Un2) B  C          C  B  R        4   17   34.7     20.0Min
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      Dem     Satn Flow     Flow Ratio   Total  Prac.  Prac.  Lane
Deg.
  No.      Flow   -----------    ----------    Cap.  Deg.   Spare  Util
Satn
           (veh    1st   2nd     1st    2nd   (veh   Satn   Cap.
            /h)    Grn   Grn     Grn    Grn    /h)    xp     (%)    (%)
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 App.  Green   Phases   Adjusted    Adjusted   Required
Required
    Mov   &    Period  ------     Lost        Flow     Grn Time
Movement
    No.  Turn          Fr  To     Time        Ratio     Ratio
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
```

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.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 No.	Mov 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)	Deg. Satn x	Lane 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   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: 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   %       Cycle      Max   Aver.   Max
                        Flow   HV       Time        X    Delay  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	Time (g/C) 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: 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    3:36 PM, Jun  2,2003

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

 Finca Barranca - Ponce, P.R.
 Int. PR-1 & Ave. La Ceiba, PM Actual
 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 =  0.0 %
     Difference in total vehicle capacity      =  0.0 %
     Largest difference in eff. green times =  0 secs
     (max. value for stopping = 0 secs)
```

```
 Finca Barranca - Ponce, P.R.
 Int. PR-1 & Ave. La Ceiba, PM Actual
 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

	L E F T		THROUGH		R I G H T	
	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 Actual
Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 103

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES	Demand flows in veh/hour as used by the program							
West: PR-1 PONCE								
12	205	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     49     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    615    11   1.00   0.95
 ----------------------------------------------------------------------
--
 North: AVE. LA CEIBA
         42           641     9      0     0      0     0   1.00   0.95
         41             0     0     72     2      0     0   1.00   0.95
         43             0     0      0     0    302     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 Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time = 103


 Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS
 ----------------------------------------------------------------------
-------
  Mov     Mov    P H A S E  M A T R I X    Lost Tim  Req.Mov.Time
Eff. Grn
  No.     Typ  First Green   Second Green  --------  ------------     -
-------
               ------------  ------------  1st  2nd  1st      2nd
1st  2nd
               Fr To Op Pr   Fr To Op Pr   Grn  Grn  Grn      Grn
Grn  Grn
 ----------------------------------------------------------------------
-------
 West: PR-1 PONCE
   12 L       *A  B                         4        24.0Max
20
   11 T        B  C                         4        37.8
34
   13 R  (Un2) B  C          C  B  R        4   15   33.6     20.0Min
34   50
 ----------------------------------------------------------------------
-------
 South: AVE. LA CEIBA
   32 L        C  A  L                     13        33.7
28
```

```
   31 T        C  A                          4        10.9
37
   33 R  (Un1) A  C  R       C  A          26    4   20.0Min  31.7
36   37
 ---------------------------------------------------------------------
-------
 East: PR-1 MERCEDITA
   22 L        A  B                          4        24.0Max
20
   21 T        B  C                          4        35.5
34
   23 R  (Un2)*B  C          C  B  R        4   15   37.8     37.3
34   50
 ---------------------------------------------------------------------
-------
 North: AVE. LA CEIBA
   42 L       *C  A  L                       5        40.9
36
   41 T        C  A                          4        34.2
37
   43 R  (Un1) A  C  R       C  A          22    4   20.0Min  35.5
40   37
 ---------------------------------------------------------------------
-------
   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 Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time = 103


 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    1st   2nd     1st    2nd   (veh   Satn   Cap.
            /h)    Grn   Grn     Grn    Grn    /h)    xp     (%)    (%)
x
 ---------------------------------------------------------------------
--------
 West: PR-1 PONCE
   12 L     208   1792         0.116           348   0.90     51    100
0.598
   11 T    1214   5071         0.239          1674   0.90     24    100
0.725
   13 R     108    409    29   0.264  0.000    149   0.90     24    100
0.724
 ---------------------------------------------------------------------
--------
 South: AVE. LA CEIBA
   32 L     107   1158         0.092           315   0.90    165    100
0.340
   31 T      50   1873         0.027           673   0.90   1111     22
0.074
   33 R     236    958  1591   0.000  0.148    906   0.90    246     77
0.260
 ---------------------------------------------------------------------
--------
 East: PR-1 MERCEDITA
   22 L     199   1791         0.111           348   0.90     57    100
0.572
   21 T    1158   5550         0.209          1832   0.90     42    100
0.632
   23 R     626   1604  1089   0.270  0.178   1058   0.90     52    100
0.592
 ---------------------------------------------------------------------
--------
 North: AVE. LA CEIBA
   42 L     650   2427         0.268           848   0.90     17    100
0.766*
   41 T      74    393         0.188           141   0.90     72     68
0.524
   43 R     306    323  1275   0.000  0.240    583   0.90     72     68
0.524
 ---------------------------------------------------------------------
--------
```

```
 Finca Barranca - Ponce, P.R.
 Int. PR-1 & Ave. La Ceiba, PM Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time = 103


 Table S.3 - INTERSECTION PARAMETERS
 ---------------------------------------------------------------------
----
    Crit App.  Green   Phases   Adjusted    Adjusted   Required
Required
```

```
    Mov   &    Period  ------     Lost        Flow     Grn Time
Movement
    No.  Turn          Fr  To     Time        Ratio     Ratio
Time
 ---------------------------------------------------------------------
----
     12  W_L           A   B       24           -          -
24.0Max
     23  E_R    1st    B   C        4        0.270      0.328
37.8
     42  N_L           C   A        5        0.268      0.349
40.9
                                  ----       ------     ------     ----
--
                           Total:   33        0.537      0.677
102.7
 ---------------------------------------------------------------------
----
   -  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        103        103

    Intersection Level of Service             =         C
    Worst movement Level of Service           =         D
    Average intersection delay (s)            =      31.7
    Largest average movement delay (s)        =      52.0
    Largest back of queue, 95% (m)            =       171
    Performance Index                         =    227.80
    Degree of saturation (highest)            =     0.766
    Practical Spare Capacity (lowest)         =        17 %
    Total vehicle capacity, all lanes (veh/h) =      8875
    Total vehicle flow (veh/h)                =      4936
    Total person flow (pers/h)                =      7404
    Total vehicle delay (veh-h/h)             =     43.53
    Total person delay (pers-h/h)             =     65.29
    Total effective vehicle stops (veh/h)     =      3957
    Total effective person stops (pers/h)     =      5935
    Total vehicle travel (veh-km/h)           =    2988.8
    Total cost ($/h)                          =   2255.82
    Total fuel (L/h)                          =     390.7
    Total CO2 (kg/h)                          =    977.82
```

```
 Finca Barranca - Ponce, P.R.
 Int. PR-1 & Ave. La Ceiba, PM Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time = 103


 Table S.4 - PHASE INFORMATION
 ---------------------------------------------------
```

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	20	24	0.233
B	24	28	34	38	0.369
C	62	66	37	41	0.398

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

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Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. (tcu)	Aver Basic (veh)	Aver 1st (veh)	Aver 2nd (veh)	End Cap /h)	Tot Cap /h)	Deg. Satn x	Lane Util %
West: PR-1 PONCE														
1 L	12	208	0	0	208	3.65	1911	1792		0	0	348	0.598	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	330	108	438	3.65	1911	1783		776	35	604	0.725	100
South: AVE. LA CEIBA														
1 L	32, 31	107	0	0	107	3.65	1911	1158		0	70	315	0.340	100
2 T	31	0	50	0	50	3.65	1911	1873		0	0	673	0.074	22P
3 R	31, 33	0	0	236	236	3.65	1911	958		1591	35	906	0.260	77P
East: PR-1 MERCEDITA														

```
  1 L     22   199    0    0  199  3.65  1911 1791     0    0  348
0.572  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  626  626  3.65  1911 1604  1089   35 1058
0.592  100
 ---------------------------------------------------------------------
-------
  North: AVE. LA CEIBA
  1 L     42   325    0    0  325  3.65  1911 1214     0   70  424
0.766  100
  2 L     42,  325    0    0  325  3.65  1911 1214     0   70  424
0.766  100
          41
  3 TR    41,    0   74  306  380  3.65  1911  898  1653   35  724
0.525   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 Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time = 103


 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         208   348   100  0.598   20*       52.0  0.82   11.5
12.03
   11 T        1214  1674   100  0.725   34        33.7  0.81   21.8
61.85
```

```
   13 R  (Un2)  108   149   100  0.724   34   50   41.2  0.88   20.8
5.67
 ---------------------------------------------------------------------
------
 South: AVE. LA CEIBA
   32 L         107   315   100  0.340   28        43.1  0.79    5.5
5.54
   31 T          50   673    22  0.074   37        23.9  0.51    2.1
1.98
   33 R  (Un1)  236   906    77  0.260   36   37   14.2  0.77    5.1
6.82
 ---------------------------------------------------------------------
------
 East: PR-1 MERCEDITA
   22 L         199   348   100  0.572   20        51.7  0.81   11.0
11.45
   21 T        1158  1832   100  0.632   34        33.4  0.77   18.6
56.86
   23 R  (Un2)  626  1058   100  0.592   34*  50   12.1  0.79   12.9
17.89
 ---------------------------------------------------------------------
------
 North: AVE. LA CEIBA
   42 L         650   848   100  0.766*  36*       42.4  0.86   16.9
35.53
   41 T          74   141    68  0.524   37        11.6  0.67    9.1
2.17
   43 R  (Un1)  306   583    68  0.524   40   37   20.7  0.84    9.1
10.00
 ---------------------------------------------------------------------
------
   *  Maximum degree of saturation, or critical green periods
```

```
 Finca Barranca - Ponce, P.R.
 Int. PR-1 & Ave. La Ceiba, PM Actual
 Intersection ID:           *** UNREGISTERED VERSION ***
             Actuated Isolated Signals, Cycle Time = 103


 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: PR-1 PONCE
 1 L     208             208    1  1910   20      0.598   52.0    89
100
 2 T          442        442    3  1910   34      0.725   34.3   171
```

```
 3 T          442        442    3  1910   34      0.725   34.3   171
 4 TR         330  108   438    3  1911   34   2  0.725   34.4   162
         ---------------------------------------------------------------
----
         208 1214  108  1530    3                 0.725   36.7   171
 ---------------------------------------------------------------------
----
  South: AVE. LA CEIBA
 1 L     107            107    0  1911   28      0.340   43.1    42
 2 T           50       50    2  1911   37      0.074   23.9    16
 3 R               236   236    3  1911   36  37  0.260   14.2    40
         ---------------------------------------------------------------
----
         107   50  236   393    2                 0.340   23.3    42
 ---------------------------------------------------------------------
----
  East: PR-1 MERCEDITA
 1 L     199            199    2  1910   20      0.572   51.7    85
100
 2 T          386        386    3  1910   34      0.632   33.4   146
 3 T          386        386    3  1910   34      0.632   33.4   146
 4 T          386        386    3  1910   34      0.632   33.4   146
 5 R               626   626    2  1910   34  50  0.592   12.1    99
         ---------------------------------------------------------------
----
         199 1158  626  1983    3                 0.632   28.5   146
 ---------------------------------------------------------------------
----
  North: AVE. LA CEIBA
 1 L     325            325    1  1910   36      0.766   42.4   130
 2 L     325            325    1  1911   36      0.766   42.4   130
 3 TR          74  306   380    2  1911   15  37  0.525   18.9    70
         ---------------------------------------------------------------
----
         650   74  306  1030    1                 0.766   33.8   130

=====================================================================
===
  ALL VEHICLES          Total   %       Cycle      Max   Aver.   Max
                        Flow   HV       Time        X    Delay  Queue
                        4936    2        103      0.766   31.7   171

=====================================================================
===
 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, PM Actual
```

Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 103

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio (g/C) 1st grn	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		0.194*		208	348	0.598	52.0	D
11 T		0.330		1214	1674	0.725	33.7	C
13 R	(Un2)	0.330	0.485	108	149	0.724	41.2	D
				1530	2171	0.725	36.7	D
South: AVE. LA CEIBA								
32 L		0.272		107	315	0.340	43.1	D
31 T		0.359		50	673	0.074	23.9	C
33 R	(Un1)	0.350	0.359	236	906	0.260	14.2	B
				393	1894	0.340	23.3	C
East: PR-1 MERCEDITA								
22 L		0.194		199	348	0.572	51.7	D
21 T		0.330		1158	1832	0.632	33.4	C
23 R	(Un2)	0.330*	0.485	626	1058	0.592	12.1	B
				1983	3238	0.632	28.5	C
North: AVE. LA CEIBA								
42 L		0.350*		650	848	0.766*	42.4	D
41 T		0.359		74	141	0.524	11.6	B
43 R	(Un1)	0.388	0.359	306	583	0.524	20.7	C
				1030	1573	0.766	33.8	C
ALL VEHICLES:				4936	8875	0.766	31.7	C
INTERSECTION (persons):				7404	8875	0.766	31.7	

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 Actual

Intersection ID: *** UNREGISTERED VERSION ***
Actuated Isolated Signals, Cycle Time = 103

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	18.4	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 ---