Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Tilysay Hernández Acevedo
Agency/Co.:	PLC Traffic Consulting
Date performed:	12/13/2007
Analysis time period:	24 horas
Freeway/Dir of Travel:	Rampa Este
Junction:	
Jurisdiction:	Caguas
Analysis Year:	2007
Description:	Plaza LagunavF (AM)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	55.0	mph
Volume on freeway	2140	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	231	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2140	231		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	594	64		v
Trucks and buses	0	0		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%		%
Length	mi	mi		mi
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

FIGURA 42

Heavy vehicle adjustment, fHV	1.000	1.000	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2378	257	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.591 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1407 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2635	6750	No
v_{R12}	1664	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 15.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.307	
Space mean speed in ramp influence area,	S_R = 51.0	mph
Space mean speed in outer lanes,	S_O = 53.3	mph
Space mean speed for all vehicles,	S = 51.8	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Tilysay Hernandez Acevedo
Agency/Co.:	PLC Traffic Consulting
Date performed:	12/13/2007
Analysis time period:	24 horas
Freeway/Dir of Travel:	Rampa Oeste
Junction:	
Jurisdiction:	Caguas
Analysis Year:	2007
Description:	Laguna Plaza F (AM)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	55.0	mph
Volume on freeway	2140	vph

On Ramp Data

Side of freeway	Left	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	401	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2140	401		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	594	111		v
Trucks and buses	0	0		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

FIGURA 43

Heavy vehicle adjustment, fHV	1.000	1.000	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2378	446	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.591 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1407 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2824	6750	No
v_{R12}	2021	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 17.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.315	
Space mean speed in ramp influence area,	S_R = 50.9	mph
Space mean speed in outer lanes,	S_O = 53.9	mph
Space mean speed for all vehicles,	S = 51.7	mph

SIDRA INTERSECTION

Output Tables

Intersección Avenida Las Flores & Calle Hortensia

Futura (PM)

Run Information

```
Cycle Time =   35  (Sum of User-given Phase Times)

* 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 optimum cycle time specification
    Any green split priority specification
  For actuated signal timings, cycle increment is set to 1 second
  Driving on the right-hand side of the road
  Input data specified in US units
  Model Defaults: US HCM (US)
  Peak Flow Period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes.
  Delay definition: Control delay
                    Geometric delay included
  HCM Delay Model option selected
  HCM Queue Model option selected
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile

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

Table B.1 - Movement Definitions and Flow Rates (Origin-Destination)

```
Intersecci n Avenida Las Flores   Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time =  35 (Sum of User-given Phase Times)

-----------------------------------------------------------------
 From      To          Mov           Flow Rate   Flow   Peak Flow
 Approach  Approach    ID    Turn     LV    HV   Scale    Factor
-----------------------------------------------------------------
 West: Acceso Oeste
           South        2R   Right   795     0    1.00     1.00
```

FIGURA 44

```
          East         2T   Thru    119     0    1.00     1.00
          North        5L   Left      4     0    1.00     1.00
-----------------------------------------------------------------
 South: Acceso Sur
          West         3L   Left    177     0    1.00     1.00
          East         8R   Right    51     0    1.00     1.00
          North        8T   Thru     72     0    1.00     1.00
-----------------------------------------------------------------
 East: Acceso Este
          West         6T   Thru     72     0    1.00     1.00
          South        1L   Left     25     0    1.00     1.00
          North        6R   Right    42     0    1.00     1.00
-----------------------------------------------------------------
 North: Acceso Norte
          West         4R   Right    25     0    1.00     1.00
          South        4T   Thru    310     0    1.00     1.00
          East         7L   Left      8     0    1.00     1.00
-----------------------------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table B.2A - Flow Rates (Separate Light and Heavy Vehicles)

```
Intersecci n Avenida Las Flores   Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time =  35 (Sum of User-given Phase Times)

-----------------------------------------------
  Mov          Left       Through       Right
  ID        ---------    ---------    ---------
             LV    HV     LV    HV     LV    HV
-----------------------------------------------
Demand flows in veh/hour as used by the program
West: Acceso Oeste
   5L L       4     0      0     0      0     0
   2T T       0     0    119     0      0     0
   2R R       0     0      0     0    795     0
-----------------------------------------------
South: Acceso Sur
   3L L     177     0      0     0      0     0
   8T T       0     0     72     0      0     0
   8R R       0     0      0     0     51     0
-----------------------------------------------
East: Acceso Este
   1L L      25     0      0     0      0     0
   6T T       0     0     72     0      0     0
   6R R       0     0      0     0     42     0
-----------------------------------------------
North: Acceso Norte
   7L L       8     0      0     0      0     0
   4T T       0     0    310     0      0     0
   4R R       0     0      0     0     25     0
-----------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table B.2B - Flow Rates (Total Vehicles and Percent Heavy)

Intersecci n Avenida Las Flores Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time = 35 (Sum of User-given Phase Times)

Mov ID	Left Total	Left %HV	Through Total	Through %HV	Right Total	Right %HV
Demand flows in veh/hour as used by the program						
West: Acceso Oeste						
5L L	4	0.0	0	0.0	0	0.0
2T T	0	0.0	119	0.0	0	0.0
2R R	0	0.0	0	0.0	795	0.0
South: Acceso Sur						
3L L	177	0.0	0	0.0	0	0.0
8T T	0	0.0	72	0.0	0	0.0
8R R	0	0.0	0	0.0	51	0.0
East: Acceso Este						
1L L	25	0.0	0	0.0	0	0.0
6T T	0	0.0	72	0.0	0	0.0
6R R	0	0.0	0	0.0	42	0.0
North: Acceso Norte						
7L L	8	0.0	0	0.0	0	0.0
4T T	0	0.0	310	0.0	0	0.0
4R R	0	0.0	0	0.0	25	0.0

Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor

Table S.1 - Movement Phase and Timing Parameters

Intersecci n Avenida Las Flores Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time = 35 (Sum of User-given Phase Times)

Mov ID	Mov Typ	PHASE MATRIX First Green Fr	First Green To	First Green Op Pr	Second Green Fr	Second Green To	Second Green Op Pr	Lost Tim 1st Grn	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
West: Acceso Oeste													
5L L		2	1	Y				6		22.8		14	
2T T		2	1					4		22.6		16	
2R R		1	2	Y	*2	1		6	4	11.6	22.8	9	16
South: Acceso Sur													
3L L		*1	2	Y				6		15.4		9	
8T T		1	2					4		10.0Min		11	
8R R		1	2		2	1	Y	4	4	10.0Min	10.0Min	11	16
East: Acceso Este													
1L L		2	1	Y				18		18.8		2	
6T T		2	1					4		10.1		16	
6R R		1	2	Y	2	1		4	4	10.0Min	10.0Min	11	16

```
North: Acceso Norte
  7L L        1      2      Y                            5        12.1              10
  4T T        1      2                                   4        11.9              11
  4R R        1      2             2      1      Y       4    5   11.6     10.0Min  11   15
-----------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------
  Current Phase Sequence: Two-phase
  Input phase sequence: 1 2
  Output phase sequence: 1 2
-----------------------------------------------------------------------------------------
  *  Critical Movement/Green Period

Movement Types:                              Under heading 'Op':
  Slp  Slip Lane Movement                      Y   If opposed turn
  Ped  Pedestrian
  Dum  Dummy
```

Table S.2 - Movement Capacity Parameters

```
Intersecci n Avenida Las Flores   Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time =  35 (Sum of User-given Phase Times)

-------------------------------------------------------------------------------
 Mov      Dem          Satn Flow   Flow Ratio  Total Prac. Prac. Lane   Deg.
 ID       Flow        -----------  ---------   Cap. Deg.  Spare Util   Satn
          (veh    HV   1st   2nd    1st   2nd  (veh  Satn  Cap.
           /h)    (%)  Grn   Grn    Grn   Grn  /h)   xp    (%)   (%)     x
-------------------------------------------------------------------------------
West: Acceso Oeste
  5L L       4    0.0   12         0.333          5  0.90    8   100  0.833
  2T T     119    0.0  301         0.395        138  0.90    4   100  0.865*
  2R R     795    0.0  845  1538   0.132 0.444  920  0.90    4   100  0.864
-------------------------------------------------------------------------------
South: Acceso Sur
  3L L     177    0.0 1560         0.113        401  0.90  104   100  0.441
  8T T      72    0.0 1190         0.061        374  0.90  368    44  0.193
  8R R      51    0.0  621   152   0.082 0.000  265  0.90  367    44  0.193
-------------------------------------------------------------------------------
East: Acceso Este
  1L L      25    0.0 2890         0.009        165  0.90  495   100  0.151
  6T T      72    0.0 1040         0.069        475  0.90  494   100  0.151
  6R R      42    0.0  203   468   0.000 0.090  278  0.90  495   100  0.151
-------------------------------------------------------------------------------
North: Acceso Norte
  7L L       8    0.0   98         0.082         28  0.90  215   100  0.286
  4T T     310    0.0 3449         0.090       1084  0.90  215   100  0.286
  4R R      25    0.0  209    51   0.120 0.000   88  0.90  215   100  0.286
-------------------------------------------------------------------------------
```

Table S.3 - Intersection Parameters

```
Intersecci n Avenida Las Flores   Calle Hortensia
Futura (PM)
Intersection ID: 1
```

Actuated Isolated Signals, Cycle Time = 35 (Sum of User-given Phase Times)

Crit Mov ID	App. and Turn	Green Period	Phases Fr	Phases To	Adjusted Lost Time	Adjusted Flow Ratio	Required Grn Time Ratio	Required Movement Time
3L	S_L		1	2	6	0.113	0.269	15.4
2R	W_R	2nd	2	1	4	0.444	0.536	22.8
				Total:	10	0.558	0.805	38.2

Cycle Time:

Minimum	Maximum	Practical	Chosen
20	NA	52	35

(Phase times user specified, cycle time = sum of phase times)

NA Cmax does not apply at actuated signals

Intersection Level of Service	=	C
Worst movement Level of Service	=	D
Average intersection delay (s/pers)	=	22.5
Largest average movement delay (s)	=	35.4
Largest back of queue, 95% (ft)	=	550
Performance Index	=	52.33
Degree of saturation (highest)	=	0.865
Practical Spare Capacity (lowest)	=	4 %
Effective intersection capacity, (veh/h)	=	1966
Total vehicle flow (veh/h)	=	1700
Total person flow (pers/h)	=	2040
Total vehicle delay (veh-h/h)	=	10.64
Total person delay (pers-h/h)	=	12.77
Total effective vehicle stops (veh/h)	=	1357
Total effective person stops (pers/h)	=	1628
Total vehicle travel (veh-mi/h)	=	641.3
Total cost ($/h)	=	418.52
Total fuel (gal/h)	=	34.7
Total CO2 (kg/h)	=	328.20

Table S.4 - Phase Information

Intersecci n Avenida Las Flores Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time = 35 (Sum of User-given Phase Times)

Phase	Change Time	Starting Intgrn	Green Start	Displayed Green	Green End	Terminating Intgrn	Phase Time	Phase Split
1	0	4	4	11	15	4	15	43%
2	15	4	19	16	35	4	20	57%

(Phase times specified by the user)
Current Phase Sequence: Two-phase
Input phase sequence: 1 2
Output phase sequence: 1 2

Table S.5 - Movement Performance

Mov ID	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% Back (vehs)	(ft)	Perf. Index	Aver. Speed (mph)
West: Acceso Oeste									
5L L	0.04	0.05	35.4	1.00	0.95	22.0	550	0.15	19.5
2T T	0.88	1.05	26.5	1.00	0.95	22.0	550	4.21	22.5
2R R	6.69	8.02	30.3	1.00	0.90	20.6	515	27.95	21.1
South: Acceso Sur									
3L L	1.12	1.35	22.8	0.86	0.79	3.8	95	5.42	23.9
8T T	0.11	0.14	5.7	0.67	0.47	1.6	40	1.44	33.6
8R R	0.21	0.25	14.6	0.67	0.76	1.6	40	1.22	27.8
East: Acceso Este									
1L L	0.15	0.18	21.6	0.83	0.78	2.7	67	0.73	24.4
6T T	0.25	0.30	12.7	0.83	0.66	2.7	67	1.88	29.2
6R R	0.25	0.30	21.4	0.82	0.77	2.7	66	1.21	24.5
North: Acceso Norte									
7L L	0.04	0.05	19.8	0.77	0.78	3.1	77	0.23	25.2
4T T	0.78	0.94	9.1	0.77	0.59	3.1	77	7.24	31.3
4R R	0.11	0.13	16.1	0.76	0.78	2.5	64	0.63	27.1

Table S.6 - Intersection Performance

Intersecci n Avenida Las Flores Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time = 35 (Sum of User-given Phase Times)

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
West: Acceso Oeste									
918	0.865	7.60	9.12	29.8	1.00	0.91	550	32.32	21.3
South: Acceso Sur									
300	0.441	1.44	1.73	17.3	0.78	0.71	95	8.08	26.4
East: Acceso Este									
139	0.151	0.65	0.78	16.9	0.83	0.72	67	3.83	26.7
North: Acceso Norte									
343	0.286	0.94	1.13	9.9	0.77	0.61	77	8.10	30.8
ALL VEHICLES:									
1700	0.865	10.64	12.77	22.5	0.90	0.80	550	52.33	24.0
INTERSECTION (persons):									
2040	0.865		12.77	22.5	0.90	0.80		52.33	24.0

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

Table S.7 - Lane Performance

Intersecci n Avenida Las Flores Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time = 35 (Sum of User-given Phase Times)

Lane No.	Effective Green Times (sec) R1	G1	R2	G2	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	(ft)	Lane Length (ft)
West: Acceso Oeste												
1 LTR	19	16	0	0	918	1063	0.864	34.2	0.91	22.0	550.4	1600.0
South: Acceso Sur												
1 L	26	9	0	0	177	401	0.441	22.8	0.79	3.8	94.6	1600.0
2 TR	17	11	4	3	123	639	0.193	9.4	0.59	1.6	40.3	1600.0
East: Acceso Este												
1 LTR	26	9	0	0	139	918	0.151	17.0	0.72	2.7	67.4	1600.0
North: Acceso Norte												
1 LT	24	11	0	0	168	589	0.286	11.3	0.63	3.1	77.5	1600.0
2 TR	18	11	5	1	175	610	0.286	8.5	0.60	2.5	63.5	1600.0

Table S.8 - Lane Flow and Capacity Information

Intersecci n Avenida Las Flores Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time = 35 (Sum of User-given Phase Times)

Lane No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (ft)	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: Acceso Oeste												
1 LTR	4	119	795	918	12.0	1900	678	0	206	1063	0.864	100
South: Acceso Sur												
1 L	177	0	0	177	12.0	1900	1560	0	206	401	0.441	100
2 TR	0	72	51	123	12.0	1900	1770	960	103	639	0.193	44P
East: Acceso Este												
1 LTR	25	72	42	139	12.0	1900	1614	0	224	918	0.151	100
North: Acceso Norte												
1 LT	8	160	0	168	12.0	1900	1875	0	108	589	0.286	100
2 TR	0	150	25	175	12.0	1900	1853	972	103	610	0.286	100

P Lane under-utilisation found by the "Program". This includes cases where the value of lane under-utilisation due to downstream effects has been modified by the program during lane flow calculations (e.g. a de facto exclusive lane has been found).

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.

Table S.9 - Signal Timing Diagram

```
Intersecci n Avenida Las Flores   Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time =  35 (Sum of User-given Phase Times)

Displayed (Phase) Green Times

           Phase 1                           Phase 2

0                            15                                       35
I----------------------------I----------------------------------------I
........GGGGGGGGGGGGGGGGGGGGG.........GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG.
       4                              19


Effective (Movement) Green Times


 West: Acceso Oeste

Mov.    5L (L)
I                            I                                        I
GGG.........................................GGGGGGGGGGGGGGGGGGGGGGGGG
   2                                        23

Mov.    2T (T)
I                            I                                        I
GGG.....................................GGGGGGGGGGGGGGGGGGGGGGGGGGGGG
   2                                    21

Mov.    2R (R)
I                            I                                        I
GGGG............GGGGGGGGGGGGGGGGGG........GGGGGGGGGGGGGGGGGGGGGGGGGGGGG
   2          8                 17       21


 South: Acceso Sur

Mov.    3L (L)
I                            I                                        I
................GGGGGGGGGGGGGGGGGG....................................
              8                  17

Mov.    8T (T)
I                            I                                        I
............GGGGGGGGGGGGGGGGGGGGG....................................
          6                      17

Mov.    8R (R)
I                            I                                        I
GGGG........GGGGGGGGGGGGGGGGGGGGG........GGGGGGGGGGGGGGGGGGGGGGGGGGGGG
   2       6                     17       21


 East: Acceso Este

Mov.    1L (L)
I                            I                                        I
GGG.......................................................................
   2                                                                   35

Mov.    6T (T)
I                            I                                        I
GGG.....................................GGGGGGGGGGGGGGGGGGGGGGGGGGGGG
   2                                    21
```

```
Mov.    6R (R)
I                            I                                      I
GGGG........GGGGGGGGGGGGGGGGGGGG........GGGGGGGGGGGGGGGGGGGGGGGGGGGGG
   2       6                    17       21


 North: Acceso Norte

Mov.    7L (L)
I                            I                                      I
..............GGGGGGGGGGGGGGGGGGG.....................................
            7                    17

Mov.    4T (T)
I                            I                                      I
............GGGGGGGGGGGGGGGGGGGGG.....................................
          6                      17

Mov.    4R (R)
I                            I                                      I
GGGG........GGGGGGGGGGGGGGGGGGGG..........GGGGGGGGGGGGGGGGGGGGGGGGGGGG
   2       6                    17         22


I-----I------I------I------I------I------I------I------I------I------I---->
0      4      7     11     14     18     21     25     28     32     35

                                T I M E  (s)
```

Table S.10 - Movement Capacity and Performance Summary

```
Intersecci n Avenida Las Flores   Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time =  35 (Sum of User-given Phase Times)
```

Mov ID	Mov Typ	Dem Flow (veh /h)	Total Cap. (veh /h)	Lane Util (%)	Deg. Satn x	Eff. Grn 1st Grn	Eff. Grn 2nd Grn	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
West: Acceso Oeste											
5L	L	4	5	100	0.833	14		35.4	0.95	22.0	0.15
2T	T	119	138	100	0.865*	16		26.5	0.95	22.0	4.21
2R	R	795	920	100	0.864	9	16*	30.3	0.90	20.6	27.95
South: Acceso Sur											
3L	L	177	401	100	0.441	9*		22.8	0.79	3.8	5.42
8T	T	72	374	44	0.193	11		5.7	0.47	1.6	1.44
8R	R	51	265	44	0.193	11	16	14.6	0.76	1.6	1.22
East: Acceso Este											
1L	L	25	165	100	0.151	2		21.6	0.78	2.7	0.73
6T	T	72	475	100	0.151	16		12.7	0.66	2.7	1.88
6R	R	42	278	100	0.151	11	16	21.4	0.77	2.7	1.21
North: Acceso Norte											
7L	L	8	28	100	0.286	10		19.8	0.78	3.1	0.23
4T	T	310	1084	100	0.286	11		9.1	0.59	3.1	7.24
4R	R	25	88	100	0.286	11	15	16.1	0.78	2.5	0.63

* Maximum degree of saturation, or critical green periods

Table S.12A - Fuel Consumption, Emissions and Cost (TOTAL)

Intersecci n Avenida Las Flores Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time = 35 (Sum of User-given Phase Times)

Mov ID	Fuel Total gal/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
West: Acceso Oeste						
5L L	0.1	1.15	0.002	0.07	0.002	0.8
2T T	2.5	31.13	0.044	2.02	0.058	24.1
2R R	17.2	215.67	0.297	13.54	0.389	162.3
	19.8	247.95	0.342	15.63	0.449	187.3
South: Acceso Sur						
3L L	3.7	43.89	0.063	2.97	0.085	34.7
8T T	1.2	13.60	0.019	0.87	0.028	11.6
8R R	1.0	11.37	0.017	0.84	0.024	9.6
	5.9	68.86	0.099	4.68	0.137	55.9
East: Acceso Este						
1L L	0.5	6.11	0.009	0.42	0.012	4.9
6T T	1.4	15.37	0.022	1.04	0.031	12.8
6R R	0.9	10.23	0.015	0.70	0.020	8.2
	2.7	31.71	0.046	2.16	0.064	25.9
North: Acceso Norte						
7L L	0.2	1.91	0.003	0.13	0.004	1.5
4T T	5.6	62.41	0.090	4.18	0.130	52.9
4R R	0.5	5.68	0.008	0.41	0.012	4.7
	6.3	70.01	0.102	4.72	0.145	59.2
INTERSECTION:	34.7	418.52	0.589	27.19	0.795	328.2

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/US gal)	=	2.400
Fuel resource cost factor	=	0.70
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	19.00
Time value factor	=	0.40
Light vehicle mass (1000 lb)	=	3.1
Heavy vehicle mass (1000 lb)	=	24.0
Light vehicle idle fuel rate (US gal/h)	=	0.360
Heavy vehicle idle fuel rate (US gal/h)	=	0.530

Table S.12B - Fuel Consumption, Emissions and Cost (RATE)

Intersecci n Avenida Las Flores Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time = 35 (Sum of User-given Phase Times)

Mov ID	Fuel Eff. mpg	Cost Rate $/mi	HC Rate g/km	CO Rate g/km	NOX Rate g/km	CO2 Rate g/km
West: Acceso Oeste						
5L L	17.0	0.47	0.638	28.36	0.814	345.8
2T T	17.7	0.43	0.601	27.75	0.802	332.0
2R R	17.4	0.45	0.618	28.13	0.808	337.2
	17.5	0.45	0.615	28.08	0.807	336.5
South: Acceso Sur						
3L L	18.1	0.41	0.588	27.76	0.796	324.4
8T T	22.3	0.31	0.441	19.81	0.640	264.1
8R R	19.0	0.37	0.552	27.08	0.779	309.3
	19.1	0.38	0.546	25.72	0.755	307.3
East: Acceso Este						
1L L	18.2	0.40	0.583	27.68	0.794	322.3
6T T	20.2	0.35	0.506	23.62	0.716	291.8
6R R	18.3	0.40	0.580	27.53	0.791	321.2
	19.2	0.38	0.542	25.52	0.752	306.1
North: Acceso Norte						
7L L	18.4	0.39	0.575	27.53	0.790	318.9
4T T	21.0	0.33	0.477	22.08	0.685	279.5
4R R	18.8	0.38	0.559	27.29	0.784	312.3
	20.8	0.33	0.485	22.58	0.694	282.8
INTERSECTION:	18.5	0.41	0.571	26.34	0.770	318.0

Table S.14 - Summary of Input and Output Data

Intersecci n Avenida Las Flores Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time = 35 (Sum of User-given Phase Times)

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 (ft)	Shrt Lane (ft)
West: Acceso Oeste												
1 LTR	4	119	795	918	0	1900	16		0.864	29.1	515	1600
	4	119	795	918	0				0.864	34.2	550	
South: Acceso Sur												
1 L	177			177	0	1900	9		0.441	22.8	95	1600
2 TR		72	51	123	0	1900	11	3	0.193	9.4	40	1600
	177	72	51	300	0				0.441	17.3	95	
East: Acceso Este												
1 LTR	25	72	42	139	0	1900	9		0.151	16.8	66	1600
	25	72	42	139	0				0.151	17.0	67	
North: Acceso Norte												
1 LT	8	160		168	0	1900	11		0.286	11.3	77	1600

```
2 TR          150   25   175    0  1900   11   1  0.286    8.5    64  1600
         ---------------------------------------------------------------------
           8  310   25   343    0                 0.286    9.9    77
=============================================================================
 ALL VEHICLES          Total   %       Cycle      Max   Aver.   Max
                       Flow   HV       Time        X    Delay  Queue
                       1700    0         35      0.865   22.5   550
=============================================================================
Peak flow period = 15 minutes.

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

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

Table S.15 - Capacity and Level of Service

```
Intersecci n Avenida Las Flores   Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time =  35 (Sum of User-given Phase Times)

-------------------------------------------------------------------------------
 Mov     Mov    Green Time  Total  Total    Deg.   Aver.   LOS  Longest Queue
 ID      Typ    Ratio (g/C) Flow   Cap.     of     Delay          95% Back
                ------------ (veh  (veh     Satn                  (vehs)  (ft)
                 1st   2nd    /h)   /h)     (v/c)  (sec)
                 grn   grn
-------------------------------------------------------------------------------
West: Acceso Oeste
  5L L        0.400              4      5   0.833    35.4    D     22.0    550
  2T T        0.457            119    138   0.865*   26.5    C     22.0    550
  2R R        0.257  0.457*    795    920   0.864    30.3    C     20.6    515
-------------------------------------------------------------------------------
South: Acceso Sur
  3L L        0.257*           177    401   0.441    22.8    C      3.8     95
  8T T        0.314             72    374   0.193     5.7    A      1.6     40
  8R R        0.314  0.457      51    265   0.193    14.6    B      1.6     40
-------------------------------------------------------------------------------
East: Acceso Este
  1L L        0.057             25    165   0.151    21.6    C      2.7     67
  6T T        0.457             72    475   0.151    12.7    B      2.7     67
  6R R        0.314  0.457      42    278   0.151    21.4    C      2.7     66
-------------------------------------------------------------------------------
North: Acceso Norte
  7L L        0.286              8     28   0.286    19.8    B      3.1     77
  4T T        0.314            310   1084   0.286     9.1    A      3.1     77
  4R R        0.314  0.429      25     88   0.286    16.1    B      2.5     64
-------------------------------------------------------------------------------
  ALL VEHICLES:               1700          0.865    22.5    C     22.0    550
-------------------------------------------------------------------------------
  INTERSECTION (persons):     2040                   22.5          22.0    550
-------------------------------------------------------------------------------
     Level of Service calculations are based on
     average control delay including geometric delay (HCM criteria),
     independent of the current delay definition used.
     For the criteria, refer to the "Level of Service" topic in the
     SIDRA Output Guide or the Output section of the on-line help.
  *  Maximum v/c ratio, or critical green periods
  "  Movement Level of service has been determined using adjacent lane
     v/c ratio rather than short lane v/c ratio (v/c=1.0)
```

Table S.16 - SCATS MF Parameter

Intersecci n Avenida Las Flores Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time = 35 (Sum of User-given Phase Times)

Lane No.	Stopline Flow (veh/h)	Capacity (veh/h)	SCATS Satn Flow	SCATS MF	Deg. Satn x	Lane Util. %
West: Acceso Oeste						
1 LTR	918	1063	1648	NA	0.864	100
South: Acceso Sur						
1 L	177	401	1805	1083	0.441	100
2 TR	123	639	1770	NA	0.193	44P
East: Acceso Este						
1 LTR	139	918	1788	NA	0.151	100
North: Acceso Norte						
1 LT	168	589	1895	1390	0.286	100
2 TR	175	610	1853	NA	0.286	100

NA Not Applicable - SCATS MF was not calculated for this lane due to one of the following reasons:
- the lane is not controlled by signals (slip or continuous lane)
- two movements share this lane and do not run in the same phases

P Lane under-utilisation found by the "Program". This includes cases where the value of lane under-utilisation due to downstream effects has been modified by the program during lane flow calculations (e.g. a de facto exclusive lane has been found).

STOPLINE FLOW: Departure flow rate in veh/h as measured at the stop line. This cannot exceed capacity.

SCATS SATURATION FLOW: This allows for lane width, approach grade and turning vehicles. Saturation flow scale applies if specified. The effects of heavy vehicles, parking manoeuvres, number of buses stopping and conflicting pedestrian volume are not included.

SCATS MF: This emulates the MF (Maximum Flow) parameter used in the SCATS control system. It is calculated from the SCATS SATURATION FLOW parameter.

DEG. SATN: The Demand (Arrival) Flow Rate may exceed the Stopline Flow Rate, therefore x > 1 is possible.

Table D.0 - Geometric Delay Data

Intersecci n Avenida Las Flores Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time = 35 (Sum of User-given Phase Times)

From Approach	To Approach	Turn	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream (ft)	Distance User Spec?
West: Acceso Oeste								
	South	Right	32.8	12.5	51.5	1600	387	No
	East	Thru	S	40.0	60.0	1600	403	No
	North	Left	30.6	12.2	48.1	1600	384	No

```
 South: Acceso Sur
              West   Left    30.6   12.2   48.1   1600     384         No
              East   Right   32.8   12.5   51.5   1600     387         No
             North   Thru       S   40.0   36.0   1600     403         No
-----------------------------------------------------------------------------
 East: Acceso Este
              West   Thru       S   40.0   60.0   1600     403         No
             South   Left    30.6   12.2   48.1   1600     384         No
             North   Right   32.8   12.5   51.5   1600     387         No
-----------------------------------------------------------------------------
 North: Acceso Norte
              West   Right   32.8   12.5   51.5   1600     387         No
             South   Thru       S   40.0   36.0   1600     403         No
              East   Left    30.6   12.2   48.1   1600     384         No
-----------------------------------------------------------------------------

  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.
```

Table D.1 - Lane Delays

```
Intersecci n Avenida Las Flores   Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time =  35 (Sum of User-given Phase Times)

-----------------------------------------------------------------------
                    ----------  Delay (seconds/veh)  ----------------
         Deg.   Stop-line Delay  Acc.   Queuing   Stopd
 Lane    Satn   1st   2nd Total  Dec.  Total MvUp (Idle) Geom Control
 No.       x     d1    d2   dSL   dn    dq   dqm    di    dig   dic
-----------------------------------------------------------------------
 West: Acceso Oeste
 1 LTR  0.864  18.9   7.5  26.5   4.7  17.3   0.2  17.1   7.8   34.2
-----------------------------------------------------------------------
 South: Acceso Sur
 1 L    0.441  13.1   0.8  13.9   3.4  10.4   0.0  10.4   9.0   22.8
 2 TR   0.193   5.5   0.2   5.7   4.6   1.6   0.0   1.6   3.7    9.4
-----------------------------------------------------------------------
 East: Acceso Este
 1 LTR  0.151  12.6   0.1  12.7   5.5   7.2   0.0   7.2   4.3   17.0
-----------------------------------------------------------------------
 North: Acceso Norte
 1 LT   0.286  10.6   0.3  10.9   6.7   4.2   0.0   4.2   0.4   11.3
 2 TR   0.286   6.9   0.3   7.2   6.2   1.6   0.0   1.6   1.3    8.5
-----------------------------------------------------------------------
  dn is average stop-start delay for all vehicles queued and unqueued
```

Table D.2 - Lane Stops

```
Intersecci n Avenida Las Flores   Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time =  35 (Sum of User-given Phase Times)

-------------------------------------------------------
                                                Queue
```

Lane No.	Deg. Satn x	-- Effective Stop Rate -- he1	he2	Geom. hig	Overall h	Prop. Queued pq	Move-up Rate hqm
West: Acceso Oeste							
1 LTR	0.864	0.89	0.01	0.00	0.91	1.000	0.04
South: Acceso Sur							
1 L	0.441	0.70	0.00	0.10	0.79	0.861	0.00
2 TR	0.193	0.49	0.00	0.09	0.59	0.668	0.00
East: Acceso Este							
1 LTR	0.151	0.66	0.00	0.06	0.72	0.832	0.00
North: Acceso Norte							
1 LT	0.286	0.62	0.00	0.01	0.63	0.772	0.00
2 TR	0.286	0.57	0.00	0.02	0.60	0.759	0.01

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

Table D.3A - Lane Queues (veh)

Intersecci n Avenida Las Flores Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time = 35 (Sum of User-given Phase Times)

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
West: Acceso Oeste											
1 LTR	0.864	1.2	11.0	1.2	12.2	14.3	18.3	19.7	22.0	25.5	0.34
South: Acceso Sur											
1 L	0.441	0.2	1.7	0.2	1.9	2.2	2.9	3.3	3.8	4.8	0.06
2 TR	0.193	0.1	0.7	0.1	0.8	0.9	1.2	1.4	1.6	2.1	0.03
East: Acceso Este											
1 LTR	0.151	0.0	1.3	0.0	1.3	1.6	2.1	2.3	2.7	3.4	0.04
North: Acceso Norte											
1 LT	0.286	0.1	1.4	0.1	1.5	1.8	2.4	2.7	3.1	3.9	0.05
2 TR	0.286	0.1	1.1	0.1	1.2	1.5	2.0	2.2	2.5	3.2	0.04

Values printed in this table are back of queue (vehicles).

Table D.3B - Lane Queues (feet)

Intersecci n Avenida Las Flores Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time = 35 (Sum of User-given Phase Times)

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (feet) Nb1	Nb2	Nb	Percentile (feet) 70%	85%	90%	95%	98%	Queue Stor. Ratio
West: Acceso Oeste											
1 LTR	0.864	28.8	276.1	28.8	305.0	357.9	457.4	493.2	550.4	637.8	0.34
South: Acceso Sur											
1 L	0.441	4.4	41.9	4.4	46.4	55.4	73.3	81.8	94.6	119.0	0.06
2 TR	0.193	1.8	17.7	1.8	19.4	23.3	31.0	34.7	40.3	51.4	0.03
East: Acceso Este											
1 LTR	0.151	1.0	31.7	1.0	32.8	39.2	52.0	58.2	67.4	85.3	0.04
North: Acceso Norte											
1 LT	0.286	2.8	34.9	2.8	37.8	45.2	59.9	66.9	77.5	97.8	0.05
2 TR	0.286	2.9	27.9	2.9	30.8	36.9	49.0	54.8	63.5	80.5	0.04

Values printed in this table are back of queue (feet).

Table D.4 - Movement Speeds (mph) and Geometric Delay

Intersecci n Avenida Las Flores Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time = 35 (Sum of User-given Phase Times)

Mov ID	App. Speeds Cruise	Negn	Exit Speeds Negn	Cruise	Queue Move-up 1st Grn	2nd Grn	Av. Section Spd Running	Overall	Geom Delay (sec)
West: Acceso Oeste									
5L L	40.0	12.2	12.2	40.0	11.5		28.8	19.5	9.0
2T T	40.0	40.0	40.0	40.0	11.5		31.6	22.5	0.0
2R R	40.0	12.5	12.5	40.0	11.5		28.8	21.1	8.9
South: Acceso Sur									
3L L	40.0	12.2	12.2	40.0			29.3	23.9	9.0
8T T	40.0	40.0	40.0	40.0			34.1	33.6	0.0
8R R	40.0	12.5	12.5	40.0			29.8	27.8	8.9
East: Acceso Este									
1L L	40.0	12.2	12.2	40.0			29.3	24.4	9.0
6T T	40.0	40.0	40.0	40.0			32.9	29.2	0.0
6R R	40.0	12.5	12.5	40.0			29.4	24.5	8.9
North: Acceso Norte									
7L L	40.0	12.2	12.2	40.0			29.5	25.2	9.0
4T T	40.0	40.0	40.0	40.0		0.0	33.4	31.3	0.0
4R R	40.0	12.5	12.5	40.0		3.5	29.5	27.1	8.9

"Running Speed" is the average speed excluding stopped periods.

Table D.5 - Progression Factors and Actuated Signal Parameters

Intersecci n Avenida Las Flores Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time = 35 (Sum of User-given Phase Times)

Mov ID	Control	Coord.	Arrival Type	Delay Prog. Factor	Queue Prog. Factor	Gap Settings es	Gap Settings eh	Disp. Grn. Settings 1st Grn Gmin	1st Grn Gmax	2nd Grn Gmin	2nd Grn Gmax
West: Acceso Oeste											
5L L	VA	No	3	1.000	1.000	2.5	3.1	6	50		
2T T	VA	No	3	1.000	1.000	2.5	3.1	6	50		
2R R	VA	No	3	1.000	1.000	2.5	3.1	6	50	6	50
South: Acceso Sur											
3L L	VA	No	3	1.000	1.000	2.5	3.1	6	50		
8T T	VA	No	3	1.000	1.000	2.5	3.1	6	50		
8R R	VA	No	3	1.000	1.000	2.5	3.1	6	50	6	50
East: Acceso Este											
1L L	VA	No	3	1.000	1.000	2.5	3.1	6	50		
6T T	VA	No	3	1.000	1.000	2.5	3.1	6	50		
6R R	VA	No	3	1.000	1.000	2.5	3.1	6	50	6	50
North: Acceso Norte											
7L L	VA	No	3	1.000	1.000	2.5	3.1	6	50		
4T T	VA	No	3	1.000	1.000	2.5	3.1	6	50		
4R R	VA	No	3	1.000	1.000	2.5	3.1	6	50	6	50

Table D.6 - Gap Acceptance Parameters

Intersecci n Avenida Las Flores Calle Hortensia
Futura (PM)
Intersection ID: 1
Actuated Isolated Signals, Cycle Time = 35 (Sum of User-given Phase Times)

Mov ID	Mov Type	Opng Flow (pcu/h)	Critical Gap Hdwy (s)	Critical Gap Dist (ft)	Foll-up Headway (s)	Entry HV Equiv
West: Acceso Oeste						
5L L	Normal	114	4.50	197.2	2.50	2.00
2R R	Normal	310	6.00	352.0	3.00	2.00
South: Acceso Sur						
3L L	Normal	335	4.50	250.5	2.50	2.00
8R R	Normal	119	6.00	352.0	3.00	2.00
East: Acceso Este						
1L L	Normal	914	4.50	106.3	2.50	2.00
6R R	Normal	72	6.00	352.0	3.00	2.00
North: Acceso Norte						
7L L	Normal	123	4.50	188.8	2.50	2.00
4R R	Normal	72	6.00	352.0	3.00	2.00

Values in this table are adjusted for heavy vehicles in the entry stream.

Site: New Site - 1
C:\Documents and Settings\Alidys Alicea\My Documents\Tilysay's Documents\Estudios (Tilysay Hernandez)\Laguna Plaza\Laguna Plaza\Corridas SIDRA\Int. Existentes\Int. Ave. Las Flores & Calle Hortensia\Int. Ave. Las Flores & Calle Hortensia F (PM).aap
Processed Jan 23, 2008 10:26:42AM

A1460, PLC, Large Office
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SIDRA INTERSECTION

Output Tables

Intersección Avenida Los Ángeles & Calle Norte

Futuro (PM)

Run Information

```
Cycle Time =   55  (Sum of User-given Phase Times)

* 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 optimum cycle time specification
    Any green split priority specification
  For actuated signal timings, cycle increment is set to 1 second
  Driving on the right-hand side of the road
  Input data specified in US units
  Model Defaults: US HCM (US)
  Peak Flow Period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes.
  Delay definition: Control delay
                    Geometric delay included
  HCM Delay Model option selected
  HCM Queue Model option selected
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile

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

Table B.1 - Movement Definitions and Flow Rates (Origin-Destination)

```
Intersecci n  Avenida Los  ngeles    Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time =  55 (Sum of User-given Phase Times)

-----------------------------------------------------------------
 From      To          Mov           Flow Rate   Flow   Peak Flow
 Approach  Approach    ID    Turn     LV    HV   Scale    Factor
-----------------------------------------------------------------
 West: Acceso Oeste
           South        2R   Right     8     0    1.00     1.00
```

FIGURA 45

```
          East         2T   Thru     34     0    1.00     1.00
          North        5L   Left    986     0    1.00     1.00
-----------------------------------------------------------------
 South: Acceso Sur
          East         8R   Right     1     0    1.00     1.00
          North        8T   Thru     89     0    1.00     1.00
-----------------------------------------------------------------
 North: Acceso Norte
          South        4T   Thru     51     0    1.00     1.00
          East         7L   Left     38     0    1.00     1.00
-----------------------------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table B.2A - Flow Rates (Separate Light and Heavy Vehicles)

```
Intersecci n  Avenida Los  ngeles    Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time =  55 (Sum of User-given Phase Times)

-----------------------------------------------
  Mov          Left       Through       Right
  ID        ---------    ---------    ---------
             LV    HV     LV    HV     LV    HV
-----------------------------------------------
Demand flows in veh/hour as used by the program
West: Acceso Oeste
   5L L     986     0      0     0      0     0
   2T T       0     0     34     0      0     0
   2R R       0     0      0     0      8     0
-----------------------------------------------
South: Acceso Sur
   8T T       0     0     89     0      0     0
   8R R       0     0      0     0      1     0
-----------------------------------------------
North: Acceso Norte
   7L L      38     0      0     0      0     0
   4T T       0     0     51     0      0     0
-----------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table B.2B - Flow Rates (Total Vehicles and Percent Heavy)

```
Intersecci n  Avenida Los  ngeles    Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time =  55 (Sum of User-given Phase Times)

-------------------------------------------------
  Mov          Left        Through        Right
  ID        ----------    ----------    ----------
           Total  %HV    Total  %HV    Total  %HV
-------------------------------------------------
```

```
Demand flows in veh/hour as used by the program
West: Acceso Oeste
   5L L      986   0.0       0   0.0       0   0.0
   2T T        0   0.0      34   0.0       0   0.0
   2R R        0   0.0       0   0.0       8   0.0
-------------------------------------------------
South: Acceso Sur
   8T T        0   0.0      89   0.0       0   0.0
   8R R        0   0.0       0   0.0       1   0.0
-------------------------------------------------
North: Acceso Norte
   7L L       38   0.0       0   0.0       0   0.0
   4T T        0   0.0      51   0.0       0   0.0
-------------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table S.1 - Movement Phase and Timing Parameters

```
Intersecci n  Avenida Los  ngeles    Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time =  55 (Sum of User-given Phase Times)

-------------------------------------------------------------------------------------------
 Mov     Mov          P H A S E  M A T R I X          Lost Tim  Req.Mov.Time     Eff. Grn
 ID      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: Acceso Oeste
  5L L         2     1                                   4        24.0Max           26
  2T T         2     1                                   4        26.9              26
  2R R         1     2      Y     *2      1              4    4   10.0Min  33.5     21   26
-------------------------------------------------------------------------------------------
South: Acceso Sur
  8T T         1     2                                   4        10.0Min           21
  8R R         1     2             2      1      Y       4    4   10.0Min  10.0Min  21   26
-------------------------------------------------------------------------------------------
North: Acceso Norte
  7L L        *1     2      Y                            4        10.0Min           21
  4T T         1     2                                   4        10.0Min           21
-------------------------------------------------------------------------------------------
-------------------------------------------------------------------------------------------
  Current Phase Sequence: Two-phase
  Input phase sequence: 1 2
  Output phase sequence: 1 2
-------------------------------------------------------------------------------------------
  *  Critical Movement/Green Period

Movement Types:                          Under heading 'Op':
  Slp  Slip Lane Movement                  Y   If opposed turn
  Ped  Pedestrian
  Dum  Dummy
```

Table S.2 - Movement Capacity Parameters

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Mov ID	Dem Flow (veh /h)	HV (%)	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: Acceso Oeste											
5L L	986	0.0	3481		0.283		1646	0.90	50	100	0.599*
2T T	34	0.0	120		0.283		57	0.90	50	100	0.599*
2R R	8	0.0	13	18	0.000	0.444	13	0.90	52	100	0.594
South: Acceso Sur											
8T T	89	0.0	5649		0.016		2157	0.90	2081	100	0.041
8R R	1	0.0	46	14	0.022	0.000	24	0.90	2076	100	0.041
North: Acceso Norte											
7L L	38	0.0	1507		0.025		575	0.90	1263	100	0.066
4T T	51	0.0	3800		0.013		1451	0.90	2460	53	0.035

Table S.3 - Intersection Parameters

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Crit Mov ID	App. and Turn	Green Period	Phases Fr	Phases To	Adjusted Lost Time	Adjusted Flow Ratio	Required Grn Time Ratio	Required Movement Time
7L	N_L		1	2	10	-	-	10.0Min
2R	W_R	2nd	2	1	4	0.388	0.537	33.5
				Total:	14	0.388	0.537	43.5

- 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
20	NA	31	55

(Phase times user specified, cycle time = sum of phase times)

NA Cmax does not apply at actuated signals

Intersection Level of Service	=	D
Worst movement Level of Service	=	E
Average intersection delay (s/pers)	=	40.6
Largest average movement delay (s)	=	61.0
Largest back of queue, 95% (ft)	=	623
Performance Index	=	53.58
Degree of saturation (highest)	=	0.599
Practical Spare Capacity (lowest)	=	50 %
Effective intersection capacity, (veh/h)	=	2014
Total vehicle flow (veh/h)	=	1207
Total person flow (pers/h)	=	1448

Total vehicle delay (veh-h/h)	=	13.61
Total person delay (pers-h/h)	=	16.33
Total effective vehicle stops (veh/h)	=	1032
Total effective person stops (pers/h)	=	1238
Total vehicle travel (veh-mi/h)	=	456.1
Total cost ($/h)	=	363.28
Total fuel (gal/h)	=	26.8
Total CO2 (kg/h)	=	253.75

Table S.4 - Phase Information

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Phase	Change Time	Starting Intgrn	Green Start	Displayed Green	Green End	Terminating Intgrn	Phase Time	Phase Split
1	0	4	4	21	25	4	25	45%
2	25	4	29	26	55	4	30	55%

(Phase times specified by the user)
Current Phase Sequence: Two-phase
Input phase sequence: 1 2
Output phase sequence: 1 2

Table S.5 - Movement Performance

Mov ID	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% (vehs)	Back (ft)	Perf. Index	Aver. Speed (mph)
West: Acceso Oeste									
5L L	12.32	14.78	45.0	0.88	0.91	24.9	623	46.51	17.2
2T T	0.58	0.69	61.0	1.00	1.00	24.9	623	2.01	14.4
2R R	0.05	0.06	22.3	0.77	0.77	12.4	309	0.26	24.1
South: Acceso Sur									
8T T	0.27	0.32	10.9	0.63	0.45	0.7	17	2.27	30.2
8R R	0.00	0.01	17.8	0.62	0.72	0.6	15	0.03	26.2
North: Acceso Norte									
7L L	0.22	0.27	21.0	0.64	0.72	0.9	22	1.16	24.7
4T T	0.17	0.20	11.9	0.63	0.46	0.6	15	1.34	29.7

Table S.6 - Intersection Performance

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
West: Acceso Oeste									
1028	0.599	12.94	15.53	45.3	0.88	0.91	623	48.78	17.1
South: Acceso Sur									
90	0.041	0.28	0.33	11.0	0.63	0.46	17	2.30	30.1
North: Acceso Norte									
89	0.066	0.39	0.47	15.8	0.64	0.57	22	2.50	27.3
ALL VEHICLES:									
1207	0.599	13.61	16.33	40.6	0.85	0.86	623	53.58	18.2
INTERSECTION (persons):									
1448	0.599		16.33	40.6	0.85	0.86		53.58	18.2

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

Table S.7 - Lane Performance

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Lane No.	Effective Red and Green Times (sec) R1	G1	R2	G2	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	(ft)	Lane Length (ft)
West: Acceso Oeste												
1 L	29	26	0	0	511	853	0.599	22.0	0.83	13.3	333.4	1600.0
2 LTR	29	26	0	0	517	862	0.599	69.1	1.00	24.9	622.6	1600.0
South: Acceso Sur												
1 T	34	21	0	0	30	725	0.041	11.9	0.47	0.7	17.1	1600.0
2 T	34	21	0	0	30	725	0.041	11.9	0.47	0.7	17.1	1600.0
3 TR	29	21	4	1	30	730	0.041	9.2	0.44	0.6	14.9	1600.0
North: Acceso Norte												
1 L	34	21	0	0	38	575	0.066	21.0	0.72	0.9	22.3	1600.0
2 T	34	21	0	0	26	725	0.035	11.9	0.46	0.6	14.6	1600.0
3 T	34	21	0	0	26	725	0.035	11.9	0.46	0.6	14.6	1600.0

Table S.8 - Lane Flow and Capacity Information

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)

Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Lane No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (ft)	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: Acceso Oeste												
1 L	511	0	0	511	12.0	1900	1805	0	0	853	0.599	100
2 LTR	475	34	8	517	12.0	1900	16	0	65	862	0.599	100
South: Acceso Sur												
1 T	0	30	0	30	12.0	1900	1900	0	0	725	0.041	100
2 T	0	30	0	30	12.0	1900	1900	0	0	725	0.041	100
3 TR	0	29	1	30	12.0	1900	1889	494	65	730	0.041	100
North: Acceso Norte												
1 L	38	0	0	38	12.0	1900	1507	0	131	575	0.066	100
2 T	0	26	0	26	12.0	1900	1900	0	0	725	0.035	53P
3 T	0	26	0	26	12.0	1900	1900	0	0	725	0.035	53P

P Lane under-utilisation found by the "Program". This includes cases where the value of lane under-utilisation due to downstream effects has been modified by the program during lane flow calculations (e.g. a de facto exclusive lane has been found).

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.

Table S.9 - Signal Timing Diagram

```
Intersecci n  Avenida Los  ngeles    Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time =  55 (Sum of User-given Phase Times)

Displayed (Phase) Green Times

           Phase 1                              Phase 2

0                              25                                      55
I------------------------------I--------------------------------------I
.....GGGGGGGGGGGGGGGGGGGGGGGGG.......GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG.
    4                                29


Effective (Movement) Green Times


 West: Acceso Oeste

Mov.    5L (L)
I                              I                                       I
GG.....................................GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG
  2                                   31

Mov.    2T (T)
I                              I                                       I
GG.....................................GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG
  2                                   31

Mov.    2R (R)
I                              I                                       I
GGG.....GGGGGGGGGGGGGGGGGGGGGGGGGGG.....GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG
```

```
  2    6                        27    31

 South: Acceso Sur

Mov.    8T (T)
I                              I                                    I
........GGGGGGGGGGGGGGGGGGGGGGGGG.....................................
       6                        27

Mov.    8R (R)
I                              I                                    I
GGG.....GGGGGGGGGGGGGGGGGGGGGGGGG.....GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG
  2    6                        27    31


 North: Acceso Norte

Mov.    7L (L)
I                              I                                    I
........GGGGGGGGGGGGGGGGGGGGGGGGG.....................................
       6                        27

Mov.    4T (T)
I                              I                                    I
........GGGGGGGGGGGGGGGGGGGGGGGGG.....................................
       6                        27


I-----I------I------I------I------I------I------I------I------I------I----->
0      6     11     17     22     28     33     39     44     50     55

                                T I M E  (s)
```

Table S.10 - Movement Capacity and Performance Summary

```
Intersecci n  Avenida Los  ngeles    Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time =  55 (Sum of User-given Phase Times)

-------------------------------------------------------------------------------
 Mov      Mov  Dem   Total  Lane  Deg.  Eff. Grn  Aver.  Eff.    95%    Perf.
 ID       Typ  Flow   Cap.  Util  Satn  -------  Delay  Stop  Back of  Index
              (veh  (veh                1st  2nd         Rate   Queue
               /h)   /h)   (%)     x    Grn  Grn  (sec)         (veh)
-------------------------------------------------------------------------------
West: Acceso Oeste
  5L L         986  1646   100  0.599*  26        45.0  0.91   24.9   46.51
  2T T          34    57   100  0.599*  26        61.0  1.00   24.9    2.01
  2R R           8    13   100  0.594   21   26*  22.3  0.77   12.4    0.26
-------------------------------------------------------------------------------
South: Acceso Sur
  8T T          89  2157   100  0.041   21        10.9  0.45    0.7    2.27
  8R R           1    24   100  0.041   21   26   17.8  0.72    0.6    0.03
-------------------------------------------------------------------------------
North: Acceso Norte
  7L L          38   575   100  0.066   21*       21.0  0.72    0.9    1.16
  4T T          51  1451    53  0.035   21        11.9  0.46    0.6    1.34
-------------------------------------------------------------------------------
  *  Maximum degree of saturation, or critical green periods
```

Table S.12A - Fuel Consumption, Emissions and Cost (TOTAL)

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Mov ID	Fuel Total gal/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
West: Acceso Oeste						
5L L	22.6	311.11	0.397	16.68	0.485	213.8
2T T	0.8	12.46	0.015	0.59	0.017	8.0
2R R	0.2	1.97	0.003	0.13	0.004	1.6
	23.6	325.53	0.415	17.40	0.506	223.4
South: Acceso Sur						
8T T	1.5	17.93	0.024	1.04	0.034	14.5
8R R	0.0	0.23	0.000	0.02	0.000	0.2
	1.6	18.16	0.025	1.05	0.035	14.7
North: Acceso Norte						
7L L	0.8	9.19	0.013	0.62	0.018	7.3
4T T	0.9	10.40	0.014	0.60	0.020	8.4
	1.7	19.59	0.027	1.21	0.038	15.7
INTERSECTION:	26.8	363.28	0.466	19.67	0.578	253.8

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/US gal)	=	2.400
Fuel resource cost factor	=	0.70
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	19.00
Time value factor	=	0.40
Light vehicle mass (1000 lb)	=	3.1
Heavy vehicle mass (1000 lb)	=	24.0
Light vehicle idle fuel rate (US gal/h)	=	0.360
Heavy vehicle idle fuel rate (US gal/h)	=	0.530

Table S.12B - Fuel Consumption, Emissions and Cost (RATE)

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Mov ID	Fuel Eff. mpg	Cost Rate $/mi	HC Rate g/km	CO Rate g/km	NOX Rate g/km	CO2 Rate g/km
West: Acceso Oeste						
5L L	16.5	0.52	0.662	27.84	0.810	356.8
2T T	15.3	0.60	0.726	28.47	0.832	385.2
2R R	18.3	0.41	0.582	27.46	0.790	322.2
	16.4	0.52	0.664	27.85	0.810	357.5

South: Acceso Sur						
8T T	22.0	0.33	0.448	19.08	0.628	267.0
8R R	18.7	0.38	0.563	27.06	0.780	313.7
	22.0	0.33	0.449	19.17	0.629	267.5
North: Acceso Norte						
7L L	18.6	0.40	0.568	26.74	0.776	316.6
4T T	21.9	0.33	0.451	19.16	0.630	268.5
	20.3	0.36	0.501	22.39	0.692	289.0
INTERSECTION:	17.0	0.49	0.636	26.80	0.788	345.7

Table S.14 - Summary of Input and Output Data

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

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 (ft)	Shrt Lane (ft)
West: Acceso Oeste												
1 L	511			511	0	1899	26		0.599	22.0	333	1600
2 LTR	475	34	8	517	0	1900	26		0.599	21.6	309	1600
	986	34	8	1028	0				0.599	45.7	623	
South: Acceso Sur												
1 T		30		30	0	1899	21		0.041	11.9	17	1600
2 T		30		30	0	1899	21		0.041	11.9	17	1600
3 TR		29	1	30	0	1899	21	1	0.041	9.2	15	1600
	0	89	1	90	0				0.041	11.0	17	
North: Acceso Norte												
1 L	38			38	0	1900	21		0.066	21.0	22	1600
2 T		26		26	0	1900	21		0.035	11.9	15	1600
3 T		26		26	0	1900	21		0.035	11.9	15	1600
	38	51	0	89	0				0.066	15.8	22	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	1207	0	55	0.599	40.6	623

Peak flow period = 15 minutes.

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

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

Table S.15 - Capacity and Level of Service

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Mov ID	Mov Typ	Green Time Ratio (g/C) 1st grn	2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue 95% Back (vehs)	(ft)
West: Acceso Oeste										
5L	L	0.473		986	1646	0.599*	45.0	D	24.9	623
2T	T	0.473		34	57	0.599*	61.0	E	24.9	623
2R	R	0.382	0.473*	8	13	0.594	22.3	C	12.4	309
South: Acceso Sur										
8T	T	0.382		89	2157	0.041	10.9	B	0.7	17
8R	R	0.382	0.473	1	24	0.041	17.8	B	0.6	15
North: Acceso Norte										
7L	L	0.382*		38	575	0.066	21.0	C	0.9	22
4T	T	0.382		51	1451	0.035	11.9	B	0.6	15
ALL VEHICLES:				1207		0.599	40.6	D	24.9	623
INTERSECTION (persons):				1448			40.6		24.9	623

Level of Service calculations are based on
average control delay including geometric delay (HCM criteria),
independent of the current delay definition used.
For the criteria, refer to the "Level of Service" topic in the
SIDRA Output Guide or the Output section of the on-line help.
* Maximum v/c ratio, or critical green periods
" Movement Level of service has been determined using adjacent lane
v/c ratio rather than short lane v/c ratio (v/c=1.0)

Table S.16 - SCATS MF Parameter

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Lane No.	Stopline Flow (veh/h)	Capacity (veh/h)	SCATS Satn Flow	SCATS MF	Deg. Satn x	Lane Util. %
West: Acceso Oeste						
1 L	511	853	1805	1564	0.599	100
2 LTR	517	862	1808	NA	0.599	100
South: Acceso Sur						
1 T	30	725	1900	1596	0.041	100
2 T	30	725	1900	1596	0.041	100
3 TR	30	730	1889	NA	0.041	100
North: Acceso Norte						
1 L	38	575	1805	1516	0.066	100
2 T	26	725	1900	1596	0.035	53P
3 T	26	725	1900	1596	0.035	53P

NA Not Applicable - SCATS MF was not calculated for this lane due to one of the following reasons:
- the lane is not controlled by signals (slip or continuous lane)
- two movements share this lane and do not run in the same phases

P Lane under-utilisation found by the "Program". This includes cases where the value of lane under-utilisation due to downstream effects has been modified by the program during lane flow calculations (e.g. a de facto exclusive lane has been found).

STOPLINE FLOW: Departure flow rate in veh/h as measured at the stop line. This cannot exceed capacity.

SCATS SATURATION FLOW: This allows for lane width, approach grade and turning vehicles. Saturation flow scale applies if specified. The effects of heavy vehicles, parking manoeuvres, number of buses stopping and conflicting pedestrian volume are not included.

SCATS MF: This emulates the MF (Maximum Flow) parameter used in the SCATS control system. It is calculated from the SCATS SATURATION FLOW parameter.

DEG. SATN: The Demand (Arrival) Flow Rate may exceed the Stopline Flow Rate, therefore x > 1 is possible.

Table D.0 - Geometric Delay Data

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

From Approach	To Approach	Turn	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream Distance (ft)	User Spec?
West: Acceso Oeste								
	South	Right	32.8	12.5	51.5	1600	387	No
	East	Thru	S	40.0	91.0	1600	403	No
	North	Left	39.3	13.4	61.7	1600	394	No
South: Acceso Sur								
	East	Right	32.8	12.5	51.5	1600	387	No
	North	Thru	S	40.0	36.0	1600	403	No
North: Acceso Norte								
	South	Thru	S	40.0	36.0	1600	403	No
	East	Left	39.8	13.5	62.5	1600	394	No

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.

Table D.1 - Lane Delays

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)
Intersection ID: 2 A

Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Lane No.	Deg. Satn x	Stop-line Delay 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
West: Acceso Oeste										
1 L	0.599	12.2	1.0	13.2	3.3	9.9	0.0	9.9	8.8	22.0
2 LTR	0.599	59.8	1.2	61.0	4.6	55.6	0.0	55.6	8.2	69.2
South: Acceso Sur										
1 T	0.041	11.9	0.0	11.9	5.6	6.3	0.0	6.3	0.0	11.9
2 T	0.041	11.9	0.0	11.9	5.6	6.3	0.0	6.3	0.0	11.9
3 TR	0.041	8.9	0.0	8.9	5.4	3.9	0.0	3.9	0.3	9.2
North: Acceso Norte										
1 L	0.066	12.2	0.0	12.2	2.8	9.4	0.0	9.4	8.8	21.0
2 T	0.035	11.8	0.0	11.9	5.6	6.2	0.0	6.2	0.0	11.9
3 T	0.035	11.8	0.0	11.9	5.6	6.2	0.0	6.2	0.0	11.9

dn is average stop-start delay for all vehicles queued and unqueued

Table D.2 - Lane Stops

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Lane No.	Deg. Satn x	-- Effective Stop Rate -- he1	he2	Geom. hig	Overall h	Prop. Queued pq	Queue Move-up Rate hqm
West: Acceso Oeste							
1 L	0.599	0.68	0.00	0.15	0.83	0.771	0.00
2 LTR	0.599	0.99	0.00	0.00	1.00	1.000	0.00
South: Acceso Sur							
1 T	0.041	0.47	0.00	0.00	0.47	0.635	0.00
2 T	0.041	0.47	0.00	0.00	0.47	0.635	0.00
3 TR	0.041	0.43	0.00	0.01	0.44	0.620	0.00
North: Acceso Norte							
1 L	0.066	0.48	0.00	0.24	0.72	0.643	0.00
2 T	0.035	0.46	0.00	0.00	0.46	0.633	0.00
3 T	0.035	0.46	0.00	0.00	0.46	0.633	0.00

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

Table D.3A - Lane Queues (veh)

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)

Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
West: Acceso Oeste											
1 L	0.599	0.7	6.3	0.7	7.0	8.3	10.8	11.8	13.3	16.0	0.21
2 LTR	0.599	0.0	14.0	0.0	14.0	16.4	20.9	22.4	24.9	28.6	0.39
South: Acceso Sur											
1 T	0.041	0.0	0.3	0.0	0.3	0.4	0.5	0.6	0.7	0.9	0.01
2 T	0.041	0.0	0.3	0.0	0.3	0.4	0.5	0.6	0.7	0.9	0.01
3 TR	0.041	0.0	0.3	0.0	0.3	0.3	0.5	0.5	0.6	0.8	0.01
North: Acceso Norte											
1 L	0.066	0.0	0.4	0.0	0.4	0.5	0.7	0.8	0.9	1.1	0.01
2 T	0.035	0.0	0.3	0.0	0.3	0.3	0.4	0.5	0.6	0.7	0.01
3 T	0.035	0.0	0.3	0.0	0.3	0.3	0.4	0.5	0.6	0.7	0.01

Values printed in this table are back of queue (vehicles).

Table D.3B - Lane Queues (feet)

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (feet) Nb1	Nb2	Nb	Percentile (feet) 70%	85%	90%	95%	98%	Queue Stor. Ratio
West: Acceso Oeste											
1 L	0.599	17.2	157.7	17.2	174.9	207.0	268.9	294.1	333.4	399.4	0.21
2 LTR	0.599	1.0	349.7	1.0	350.7	410.5	521.9	560.6	622.6	715.4	0.39
South: Acceso Sur											
1 T	0.041	0.5	7.8	0.5	8.2	9.8	13.1	14.7	17.1	22.0	0.01
2 T	0.041	0.5	7.8	0.5	8.2	9.8	13.1	14.7	17.1	22.0	0.01
3 TR	0.041	0.5	6.7	0.5	7.1	8.5	11.4	12.8	14.9	19.1	0.01
North: Acceso Norte											
1 L	0.066	0.7	10.1	0.7	10.7	12.8	17.1	19.2	22.3	28.6	0.01
2 T	0.035	0.4	6.6	0.4	7.0	8.4	11.1	12.5	14.6	18.7	0.01
3 T	0.035	0.4	6.6	0.4	7.0	8.4	11.1	12.5	14.6	18.7	0.01

Values printed in this table are back of queue (feet).

Table D.4 - Movement Speeds (mph) and Geometric Delay

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)
Intersection ID: 2 A

Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Mov ID	App. Speeds Cruise	App. Speeds Negn	Exit Speeds Negn	Exit Speeds Cruise	Queue Move-up 1st Grn	Queue Move-up 2nd Grn	Av. Section Spd Running	Av. Section Spd Overall	Geom Delay (sec)
West: Acceso Oeste									
5L L	40.0	13.4	13.4	40.0			29.2	17.2	8.8
2T T	40.0	40.0	40.0	40.0			31.7	14.4	0.0
2R R	40.0	12.5	12.5	40.0			29.5	24.1	8.9
South: Acceso Sur									
8T T	40.0	40.0	40.0	40.0			34.4	30.2	0.0
8R R	40.0	12.5	12.5	40.0			29.9	26.2	8.9
North: Acceso Norte									
7L L	40.0	13.5	13.5	40.0			29.8	24.7	8.8
4T T	40.0	40.0	40.0	40.0			34.3	29.7	0.0

"Running Speed" is the average speed excluding stopped periods.

Table D.5 - Progression Factors and Actuated Signal Parameters

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Mov ID	Control	Coord.	Arrival Type	Delay Prog. Factor	Queue Prog. Factor	Gap Settings es	Gap Settings eh	Disp. Grn. Settings 1st Grn Gmin	1st Grn Gmax	2nd Grn Gmin	2nd Grn Gmax
West: Acceso Oeste											
5L L	VA	No	3	1.000	1.000	2.0	2.6	6	20		
2T T	VA	No	3	1.000	1.000	2.5	3.1	6	50		
2R R	VA	No	3	1.000	1.000	2.5	3.1	6	50	6	50
South: Acceso Sur											
8T T	VA	No	3	1.000	1.000	2.5	3.1	6	50		
8R R	VA	No	3	1.000	1.000	2.5	3.1	6	50	6	50
North: Acceso Norte											
7L L	VA	No	3	1.000	1.000	2.5	3.1	6	50		
4T T	VA	No	3	1.000	1.000	2.5	3.1	6	50		

Table D.6 - Gap Acceptance Parameters

Intersecci n Avenida Los ngeles Calle Norte
Futuro (PM)
Intersection ID: 2 A
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Critical Gap

Mov ID	Mov Type	Opng Flow (pcu/h)	Hdwy (s)	Dist (ft)	Foll-up Headway (s)	Entry HV Equiv
West: Acceso Oeste						
2R R	Normal	51	6.00	352.0	3.00	2.00
South: Acceso Sur						
8R R	Normal	34	6.00	352.0	3.00	2.00
North: Acceso Norte						
7L L	Normal	89	4.50	264.0	2.50	2.00

Values in this table are adjusted for heavy vehicles in the entry stream.

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SIDRA INTERSECTION

Output Tables

Intersección Avenida Los Angeles & Calle W

Futura (PM)

Run Information

```
Cycle Time =   55  (Sum of User-given Phase Times)

* 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 optimum cycle time specification
    Any green split priority specification
  For actuated signal timings, cycle increment is set to 1 second
  Driving on the right-hand side of the road
  Input data specified in US units
  Model Defaults: US HCM (US)
  Peak Flow Period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes.
  Delay definition: Control delay
                    Geometric delay included
  HCM Delay Model option selected
  HCM Queue Model option selected
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile

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

Table B.1 - Movement Definitions and Flow Rates (Origin-Destination)

```
Intersecci n Avenida  Los Angeles    Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time =  55 (Sum of User-given Phase Times)

-----------------------------------------------------------------
 From      To          Mov           Flow Rate   Flow   Peak Flow
 Approach  Approach    ID    Turn     LV    HV   Scale    Factor
-----------------------------------------------------------------
 South: Acceso Sur
          West         3L   Left      1     0    1.00     1.00
```

FIGURA 46

```
          North        8T   Thru    403     0    1.00     1.00
-----------------------------------------------------------------
 East: Acceso Este
          West         6T   Thru     55     0    1.00     1.00
          South        1L   Left      4     0    1.00     1.00
          North        6R   Right   301     0    1.00     1.00
-----------------------------------------------------------------
 North: Acceso Norte
          West         4R   Right   415     0    1.00     1.00
          South        4T   Thru     51     0    1.00     1.00
-----------------------------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table B.2A - Flow Rates (Separate Light and Heavy Vehicles)

```
Intersecci n Avenida  Los Angeles    Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time =  55 (Sum of User-given Phase Times)

-----------------------------------------------
  Mov          Left       Through       Right
  ID        ---------    ---------    ---------
             LV    HV     LV    HV     LV    HV
-----------------------------------------------
Demand flows in veh/hour as used by the program
South: Acceso Sur
   3L L       1     0      0     0      0     0
   8T T       0     0    403     0      0     0
-----------------------------------------------
East: Acceso Este
   1L L       4     0      0     0      0     0
   6T T       0     0     55     0      0     0
   6R R       0     0      0     0    301     0
-----------------------------------------------
North: Acceso Norte
   4T T       0     0     51     0      0     0
   4R R       0     0      0     0    415     0
-----------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table B.2B - Flow Rates (Total Vehicles and Percent Heavy)

```
Intersecci n Avenida  Los Angeles    Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time =  55 (Sum of User-given Phase Times)

-------------------------------------------------
  Mov          Left         Through        Right
  ID        ----------    ----------    ----------
            Total  %HV    Total  %HV    Total  %HV
-------------------------------------------------
```

```
Demand flows in veh/hour as used by the program
South: Acceso Sur
   3L L        1   0.0       0   0.0       0   0.0
   8T T        0   0.0     403   0.0       0   0.0
-------------------------------------------------
East: Acceso Este
   1L L        4   0.0       0   0.0       0   0.0
   6T T        0   0.0      55   0.0       0   0.0
   6R R        0   0.0       0   0.0     301   0.0
-------------------------------------------------
North: Acceso Norte
   4T T        0   0.0      51   0.0       0   0.0
   4R R        0   0.0       0   0.0     415   0.0
-------------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table S.1 - Movement Phase and Timing Parameters

```
Intersecci n Avenida  Los Angeles    Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time =  55 (Sum of User-given Phase Times)

-------------------------------------------------------------------------------------------
 Mov     Mov          P H A S E  M A T R I X          Lost Tim  Req.Mov.Time     Eff. Grn
 ID      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
-------------------------------------------------------------------------------------------
South: Acceso Sur
  3L L        1      2      Y                            5        14.2             20
  8T T        1      2                                   4        13.8             21
-------------------------------------------------------------------------------------------
East: Acceso Este
  1L L        2      1                                   4        10.0Min          26
  6T T        2      1                                   4        10.0Min          26
  6R R        1      2      Y     *2      1              6    4   16.5     18.8    19   26
-------------------------------------------------------------------------------------------
North: Acceso Norte
  4T T        1      2                                   4        10.0Min          21
  4R R       *1      2             2      1      Y       4    4   16.5     22.0    21   26
-------------------------------------------------------------------------------------------
-------------------------------------------------------------------------------------------
  Current Phase Sequence: Two-phase
  Input phase sequence: 1 2
  Output phase sequence: 1 2
-------------------------------------------------------------------------------------------
  *  Critical Movement/Green Period

Movement Types:                          Under heading 'Op':
  Slp  Slip Lane Movement                  Y   If opposed turn
  Ped  Pedestrian
  Dum  Dummy
```

Table S.2 - Movement Capacity Parameters

Intersecci n Avenida Los Angeles Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Mov ID	Dem Flow (veh /h)	HV (%)	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
South: Acceso Sur											
3L L	1	0.0	15		0.067		5	0.90	391	100	0.183
8T T	403	0.0	5674		0.071		2166	0.90	384	100	0.186
East: Acceso Este											
1L L	4	0.0	128		0.031		61	0.90	1261	23	0.066
6T T	55	0.0	1765		0.031		834	0.90	1265	23	0.066
6R R	301	0.0	786	1615	0.099	0.138	1035	0.90	209	100	0.291
North: Acceso Norte											
4T T	51	0.0	5700		0.009		2176	0.90	3741	100	0.023
4R R	415	0.0	1615	1132	0.128	0.184	1152	0.90	150	100	0.360*

Table S.3 - Intersection Parameters

Intersecci n Avenida Los Angeles Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Crit Mov ID	App. and Turn	Green Period	Phases Fr	Phases To	Adjusted Lost Time	Adjusted Flow Ratio	Required Grn Time Ratio	Required Movement Time
4R	N_R	1st	1	2	4	0.128	0.228	16.5
6R	E_R	2nd	2	1	4	0.138	0.269	18.8
				Total:	8	0.267	0.497	35.3

Cycle Time:

Minimum	Maximum	Practical	Chosen
20	NA	20	55

(Phase times user specified, cycle time = sum of phase times)

NA Cmax does not apply at actuated signals

Intersection Level of Service	=	B
Worst movement Level of Service	=	C
Average intersection delay (s/pers)	=	10.9
Largest average movement delay (s)	=	21.7
Largest back of queue, 95% (ft)	=	82
Performance Index	=	27.94
Degree of saturation (highest)	=	0.360
Practical Spare Capacity (lowest)	=	150 %
Effective intersection capacity, (veh/h)	=	3414
Total vehicle flow (veh/h)	=	1230
Total person flow (pers/h)	=	1476
Total vehicle delay (veh-h/h)	=	3.71
Total person delay (pers-h/h)	=	4.46
Total effective vehicle stops (veh/h)	=	795

Total effective person stops (pers/h)	=	954
Total vehicle travel (veh-mi/h)	=	464.4
Total cost ($/h)	=	254.38
Total fuel (gal/h)	=	22.7
Total CO2 (kg/h)	=	214.64

Table S.4 - Phase Information

Intersecci n Avenida Los Angeles Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Phase	Change Time	Starting Intgrn	Green Start	Displayed Green	Green End	Terminating Intgrn	Phase Time	Phase Split
1	0	4	4	21	25	4	25	45%
2	25	4	29	26	55	4	30	55%

(Phase times specified by the user)
Current Phase Sequence: Two-phase
Input phase sequence: 1 2
Output phase sequence: 1 2

Table S.5 - Movement Performance

Mov ID	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% Back (vehs)	(ft)	Perf. Index	Aver. Speed (mph)
South: Acceso Sur									
3L L	0.01	0.01	21.7	0.68	0.76	3.2	81	0.03	24.4
8T T	1.45	1.74	12.9	0.68	0.55	3.3	82	11.26	29.0
East: Acceso Este									
1L L	0.02	0.02	17.6	0.55	0.73	1.2	29	0.11	26.3
6T T	0.13	0.16	8.8	0.55	0.43	1.2	29	1.31	31.8
6R R	0.83	1.00	9.9	0.28	0.74	2.4	60	6.07	30.8
North: Acceso Norte									
4T T	0.17	0.20	11.8	0.63	0.45	0.4	10	1.33	29.8
4R R	1.11	1.33	9.6	0.22	0.73	2.3	58	7.83	31.0

Table S.6 - Intersection Performance

Intersecci n Avenida Los Angeles Calle W
Futura (PM)
Intersection ID: 2 B

Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
South: Acceso Sur									
404	0.186	1.45	1.75	13.0	0.68	0.55	82	11.30	29.0
East: Acceso Este									
360	0.291	0.98	1.18	9.8	0.32	0.69	60	7.49	30.9
North: Acceso Norte									
466	0.360	1.27	1.53	9.8	0.27	0.70	58	9.16	30.9
ALL VEHICLES:									
1230	0.360	3.71	4.46	10.9	0.42	0.65	82	27.94	30.2
INTERSECTION (persons):									
1476	0.360		4.46	10.9	0.42	0.65		27.94	30.2

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

Table S.7 - Lane Performance

Intersecci n Avenida Los Angeles Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Lane No.	Effective Green Times (sec) R1	G1	R2	G2	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	(ft)	Lane Length (ft)
South: Acceso Sur												
1 LT	34	21	0	0	134	721	0.186	13.0	0.55	3.2	81.2	1600.0
2 T	34	21	0	0	135	725	0.186	12.9	0.55	3.3	81.7	1600.0
3 T	34	21	0	0	135	725	0.186	12.9	0.55	3.3	81.7	1600.0
East: Acceso Este												
1 LT	29	26	0	0	59	895	0.066	9.4	0.45	1.2	29.2	1600.0
2 R	6	19	4	26	301	1035	0.291	9.9	0.74	2.4	60.4	1600.0
North: Acceso Norte												
1 T	34	21	0	0	17	725	0.023	11.8	0.45	0.4	9.6	1600.0
2 T	34	21	0	0	17	725	0.023	11.8	0.45	0.4	9.6	1600.0
3 T	34	21	0	0	17	725	0.023	11.8	0.45	0.4	9.6	1600.0
4 R	4	21	4	26	415	1152	0.360	9.6	0.73	2.3	58.5	1600.0

Table S.8 - Lane Flow and Capacity Information

Intersecci n Avenida Los Angeles Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Lane No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (ft)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	End Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: Acceso Sur												
1 LT	1	133	0	134	12.0	1900	1888	0	66	721	0.186	100
2 T	0	135	0	135	12.0	1900	1900	0	0	725	0.186	100
3 T	0	135	0	135	12.0	1900	1900	0	0	725	0.186	100
East: Acceso Este												
1 LT	4	55	0	59	12.0	1900	1893	0	0	895	0.066	23P
2 R	0	0	301	301	12.0	1900	786	1615	65	1035	0.291	100
North: Acceso Norte												
1 T	0	17	0	17	12.0	1900	1900	0	0	725	0.023	100
2 T	0	17	0	17	12.0	1900	1900	0	0	725	0.023	100
3 T	0	17	0	17	12.0	1900	1900	0	0	725	0.023	100
4 R	0	0	415	415	12.0	1900	1615	1132	65	1152	0.360	100

P Lane under-utilisation found by the "Program". This includes cases where the value of lane under-utilisation due to downstream effects has been modified by the program during lane flow calculations (e.g. a de facto exclusive lane has been found).

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.

Table S.9 - Signal Timing Diagram

```
Intersecci n Avenida  Los Angeles    Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time =  55 (Sum of User-given Phase Times)

Displayed (Phase) Green Times

           Phase 1                              Phase 2

0                             25                                      55
I-----------------------------I---------------------------------------I
.....GGGGGGGGGGGGGGGGGGGGGGGGG.......GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG.
    4                              29


Effective (Movement) Green Times


 South: Acceso Sur

Mov.    3L (L)
I                             I                                       I
.........GGGGGGGGGGGGGGGGGGGGGGGGG....................................
        7                        27

Mov.    8T (T)
I                             I                                       I
........GGGGGGGGGGGGGGGGGGGGGGGGG....................................
       6                         27


 East: Acceso Este

Mov.    1L (L)
```

```
I                               I                                       I
GG.....................................GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG
  2                                   31

Mov.    6T (T)
I                               I                                       I
GG.....................................GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG
  2                                   31

Mov.    6R (R)
I                               I                                       I
GGG.......GGGGGGGGGGGGGGGGGGGGGGGG.....GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG
  2      8                        27    31


 North: Acceso Norte

Mov.    4T (T)
I                               I                                       I
........GGGGGGGGGGGGGGGGGGGGGGGGGGG....................................
       6                          27

Mov.    4R (R)
I                               I                                       I
GGG.....GGGGGGGGGGGGGGGGGGGGGGGGGGG.....GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG
  2    6                          27    31


I-----I------I------I------I------I------I------I------I------I------I---->
0      6     11     17     22     28     33     39     44     50     55

                                T I M E  (s)
```

Table S.10 - Movement Capacity and Performance Summary

```
Intersecci n Avenida  Los Angeles    Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time =  55 (Sum of User-given Phase Times)

-------------------------------------------------------------------------------
 Mov     Mov  Dem   Total  Lane  Deg.  Eff. Grn  Aver.  Eff.    95%    Perf.
 ID      Typ  Flow   Cap.  Util  Satn  -------- Delay  Stop  Back of  Index
              (veh  (veh                1st  2nd         Rate   Queue
               /h)   /h)   (%)     x   Grn  Grn  (sec)         (veh)
-------------------------------------------------------------------------------
South: Acceso Sur
  3L L           1     5   100  0.183   20        21.7  0.76    3.2    0.03
  8T T         403  2166   100  0.186   21        12.9  0.55    3.3   11.26
-------------------------------------------------------------------------------
East: Acceso Este
  1L L           4    61    23  0.066   26        17.6  0.73    1.2    0.11
  6T T          55   834    23  0.066   26         8.8  0.43    1.2    1.31
  6R R         301  1035   100  0.291   19   26*   9.9  0.74    2.4    6.07
-------------------------------------------------------------------------------
North: Acceso Norte
  4T T          51  2176   100  0.023   21        11.8  0.45    0.4    1.33
  4R R         415  1152   100  0.360*  21*  26    9.6  0.73    2.3    7.83
-------------------------------------------------------------------------------
  *  Maximum degree of saturation, or critical green periods
```

Table S.12A - Fuel Consumption, Emissions and Cost (TOTAL)

Intersecci n Avenida Los Angeles Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Mov ID	Fuel Total gal/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
South: Acceso Sur						
3L L	0.0	0.24	0.000	0.02	0.000	0.2
8T T	7.2	84.18	0.115	4.99	0.160	67.8
	7.2	84.43	0.115	5.00	0.161	68.0
East: Acceso Este						
1L L	0.1	0.92	0.001	0.06	0.002	0.8
6T T	0.9	10.55	0.014	0.58	0.020	8.6
6R R	5.7	62.42	0.096	4.78	0.138	54.3
	6.7	73.89	0.111	5.43	0.160	63.6
North: Acceso Norte						
4T T	0.9	10.37	0.014	0.59	0.020	8.3
4R R	7.9	85.70	0.132	6.57	0.190	74.7
	8.8	96.07	0.146	7.16	0.210	83.0
INTERSECTION:	22.7	254.38	0.372	17.59	0.531	214.6

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/US gal)	=	2.400
Fuel resource cost factor	=	0.70
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	19.00
Time value factor	=	0.40
Light vehicle mass (1000 lb)	=	3.1
Heavy vehicle mass (1000 lb)	=	24.0
Light vehicle idle fuel rate (US gal/h)	=	0.360
Heavy vehicle idle fuel rate (US gal/h)	=	0.530

Table S.12B - Fuel Consumption, Emissions and Cost (RATE)

Intersecci n Avenida Los Angeles Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Mov ID	Fuel Eff. mpg	Cost Rate $/mi	HC Rate g/km	CO Rate g/km	NOX Rate g/km	CO2 Rate g/km
South: Acceso Sur						
3L L	18.5	0.40	0.571	26.84	0.779	318.2
8T T	21.3	0.34	0.468	20.26	0.651	275.5
	21.3	0.34	0.468	20.28	0.652	275.6

```
East: Acceso Este
   1L L          18.9     0.38   0.553   26.49   0.770   310.4
   6T T          23.1     0.31   0.419   17.31   0.593   255.0
   6R R          19.7     0.34   0.526   26.24   0.759   298.0
                ---------------------------------------------
                 20.2     0.34   0.510   24.87   0.733   291.5
-------------------------------------------------------------
North: Acceso Norte
   4T T          21.9     0.33   0.450   19.07   0.628   267.9
   4R R          19.8     0.34   0.524   26.13   0.757   297.1
                ---------------------------------------------
                 20.0     0.34   0.515   25.35   0.742   293.9
-------------------------------------------------------------
 INTERSECTION:   20.5     0.34   0.498   23.53   0.710   287.2
-------------------------------------------------------------
```

Table S.14 - Summary of Input and Output Data

```
Intersecci n Avenida  Los Angeles    Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time =  55 (Sum of User-given Phase Times)

-----------------------------------------------------------------------------
 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)   (ft)  (ft)
-----------------------------------------------------------------------------
 South: Acceso Sur
1 LT      1  133        134    0  1900   21      0.186   13.0    81  1600
2 T         135        135    0  1900   21      0.186   12.9    82  1600
3 T         135        135    0  1900   21      0.186   12.9    82  1600
         ------------------------------------------------------------------
          1  403    0   404    0                 0.186   13.0    82
-----------------------------------------------------------------------------
 East: Acceso Este
1 LT      4   55         59    0  1900   26      0.066    9.4    29  1600
2 R              301   301    0  1900   19  26  0.291    9.9    60  1600
         ------------------------------------------------------------------
          4   55  301   360    0                 0.291    9.8    60
-----------------------------------------------------------------------------
 North: Acceso Norte
1 T          17         17    0  1899   21      0.023   11.8    10  1600
2 T          17         17    0  1899   21      0.023   11.8    10  1600
3 T          17         17    0  1899   21      0.023   11.8    10  1600
4 R              415   415    0  1899   21  26  0.360    9.6    58  1600
         ------------------------------------------------------------------
          0   51  415   466    0                 0.360    9.8    58
=============================================================================
 ALL VEHICLES           Total   %       Cycle      Max   Aver.   Max
                        Flow   HV       Time       X    Delay  Queue
                        1230    0         55      0.360  10.9    82
=============================================================================
Peak flow period = 15 minutes.

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

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

Table S.15 - Capacity and Level of Service

Intersecci n Avenida Los Angeles Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Mov ID	Mov Typ	Green Ratio (g/C) 1st grn	Green Ratio (g/C) 2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue 95% Back (vehs)	(ft)
South: Acceso Sur										
3L	L	0.364		1	5	0.183	21.7	C	3.2	81
8T	T	0.382		403	2166	0.186	12.9	B	3.3	82
East: Acceso Este										
1L	L	0.473		4	61	0.066	17.6	B	1.2	29
6T	T	0.473		55	834	0.066	8.8	A	1.2	29
6R	R	0.345	0.473*	301	1035	0.291	9.9	A	2.4	60
North: Acceso Norte										
4T	T	0.382		51	2176	0.023	11.8	B	0.4	10
4R	R	0.382*	0.473	415	1152	0.360*	9.6	A	2.3	58
ALL VEHICLES:				1230		0.360	10.9	B	3.3	82
INTERSECTION (persons):				1476			10.9		3.3	82

Level of Service calculations are based on
average control delay including geometric delay (HCM criteria),
independent of the current delay definition used.
For the criteria, refer to the "Level of Service" topic in the
SIDRA Output Guide or the Output section of the on-line help.
* Maximum v/c ratio, or critical green periods
" Movement Level of service has been determined using adjacent lane
v/c ratio rather than short lane v/c ratio (v/c=1.0)

Table S.16 - SCATS MF Parameter

Intersecci n Avenida Los Angeles Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Lane No.	Stopline Flow (veh/h)	Capacity (veh/h)	SCATS Satn Flow	SCATS MF	Deg. Satn x	Lane Util. %
South: Acceso Sur						
1 LT	134	721	1899	1595	0.186	100
2 T	135	725	1900	1596	0.186	100
3 T	135	725	1900	1596	0.186	100
East: Acceso Este						
1 LT	59	895	1893	1641	0.066	23P
2 R	301	1035	1615	NA	0.291	100
North: Acceso Norte						
1 T	17	725	1900	1596	0.023	100
2 T	17	725	1900	1596	0.023	100
3 T	17	725	1900	1596	0.023	100
4 R	415	1152	1615	1400	0.360	100

NA Not Applicable - SCATS MF was not calculated for this lane due to one of the following reasons:
- the lane is not controlled by signals (slip or continuous lane)
- two movements share this lane and do not run in the same phases

P Lane under-utilisation found by the "Program". This includes cases where the value of lane under-utilisation due to downstream effects has been modified by the program during lane flow calculations (e.g. a de facto exclusive lane has been found).

STOPLINE FLOW: Departure flow rate in veh/h as measured at the stop line. This cannot exceed capacity.

SCATS SATURATION FLOW: This allows for lane width, approach grade and turning vehicles. Saturation flow scale applies if specified. The effects of heavy vehicles, parking manoeuvres, number of buses stopping and conflicting pedestrian volume are not included.

SCATS MF: This emulates the MF (Maximum Flow) parameter used in the SCATS control system. It is calculated from the SCATS SATURATION FLOW parameter.

DEG. SATN: The Demand (Arrival) Flow Rate may exceed the Stopline Flow Rate, therefore x > 1 is possible.

Table D.0 - Geometric Delay Data

Intersecci n Avenida Los Angeles Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

From Approach	To Approach	Turn	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream Distance (ft)	User Spec?
South: Acceso Sur								
	West	Left	39.8	13.5	62.5	1600	394	No
	North	Thru	S	40.0	36.0	1600	403	No
East: Acceso Este								
	West	Thru	S	40.0	103.0	1600	403	No
	South	Left	39.3	13.4	61.7	1600	394	No
	North	Right	32.8	12.5	51.5	1600	387	No
North: Acceso Norte								
	West	Right	32.8	12.5	51.5	1600	387	No
	South	Thru	S	40.0	36.0	1600	403	No

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.

Table D.1 - Lane Delays

Intersecci n Avenida Los Angeles Calle W
Futura (PM)

Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Lane No.	Deg. Satn x	Stop-line Delay 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: Acceso Sur										
1 LT	0.186	12.8	0.1	12.9	6.0	6.9	0.0	6.9	0.1	13.0
2 T	0.186	12.8	0.1	12.9	6.1	6.9	0.0	6.9	0.0	12.9
3 T	0.186	12.8	0.1	12.9	6.1	6.9	0.0	6.9	0.0	12.9
East: Acceso Este										
1 LT	0.066	8.8	0.0	8.8	4.7	4.1	0.0	4.1	0.6	9.4
2 R	0.291	0.9	0.2	1.0	1.1	0.0	0.0	0.0	8.9	9.9
North: Acceso Norte										
1 T	0.023	11.7	0.0	11.8	5.6	6.2	0.0	6.2	0.0	11.8
2 T	0.023	11.7	0.0	11.8	5.6	6.2	0.0	6.2	0.0	11.8
3 T	0.023	11.7	0.0	11.8	5.6	6.2	0.0	6.2	0.0	11.8
4 R	0.360	0.5	0.2	0.7	0.9	0.0	0.0	0.0	8.9	9.6

dn is average stop-start delay for all vehicles queued and unqueued

Table D.2 - Lane Stops

Intersecci n Avenida Los Angeles Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Lane No.	Deg. Satn x	Effective Stop Rate he1	he2	Geom. hig	Overall h	Prop. Queued pq	Queue Move-up Rate hqm
South: Acceso Sur							
1 LT	0.186	0.55	0.00	0.00	0.55	0.681	0.00
2 T	0.186	0.55	0.00	0.00	0.55	0.681	0.00
3 T	0.186	0.55	0.00	0.00	0.55	0.681	0.00
East: Acceso Este							
1 LT	0.066	0.43	0.00	0.02	0.45	0.553	0.00
2 R	0.291	0.24	0.00	0.50	0.74	0.278	0.00
North: Acceso Norte							
1 T	0.023	0.45	0.00	0.00	0.45	0.629	0.00
2 T	0.023	0.45	0.00	0.00	0.45	0.629	0.00
3 T	0.023	0.45	0.00	0.00	0.45	0.629	0.00
4 R	0.360	0.20	0.00	0.53	0.73	0.223	0.00

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

Table D.3A - Lane Queues (veh)

Intersecci n Avenida Los Angeles Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: Acceso Sur											
1 LT	0.186	0.1	1.5	0.1	1.6	1.9	2.5	2.8	3.2	4.1	0.05
2 T	0.186	0.1	1.5	0.1	1.6	1.9	2.5	2.8	3.3	4.1	0.05
3 T	0.186	0.1	1.5	0.1	1.6	1.9	2.5	2.8	3.3	4.1	0.05
East: Acceso Este											
1 LT	0.066	0.0	0.5	0.0	0.6	0.7	0.9	1.0	1.2	1.5	0.02
2 R	0.291	0.2	1.0	0.2	1.2	1.4	1.9	2.1	2.4	3.1	0.04
North: Acceso Norte											
1 T	0.023	0.0	0.2	0.0	0.2	0.2	0.3	0.3	0.4	0.5	0.01
2 T	0.023	0.0	0.2	0.0	0.2	0.2	0.3	0.3	0.4	0.5	0.01
3 T	0.023	0.0	0.2	0.0	0.2	0.2	0.3	0.3	0.4	0.5	0.01
4 R	0.360	0.3	0.8	0.3	1.1	1.4	1.8	2.0	2.3	3.0	0.04

Values printed in this table are back of queue (vehicles).

Table D.3B - Lane Queues (feet)

Intersecci n Avenida Los Angeles Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (feet) Nb1	Nb2	Nb	Percentile (feet) 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: Acceso Sur											
1 LT	0.186	2.4	37.2	2.4	39.6	47.4	62.8	70.1	81.2	102.5	0.05
2 T	0.186	2.4	37.5	2.4	39.9	47.7	63.2	70.6	81.7	103.1	0.05
3 T	0.186	2.4	37.5	2.4	39.9	47.7	63.2	70.6	81.7	103.1	0.05
East: Acceso Este											
1 LT	0.066	0.8	13.2	0.8	14.0	16.8	22.4	25.1	29.2	37.3	0.02
2 R	0.291	5.4	23.9	5.4	29.3	35.1	46.6	52.1	60.4	76.6	0.04
North: Acceso Norte											
1 T	0.023	0.3	4.4	0.3	4.6	5.5	7.4	8.3	9.6	12.4	0.01
2 T	0.023	0.3	4.4	0.3	4.6	5.5	7.4	8.3	9.6	12.4	0.01
3 T	0.023	0.3	4.4	0.3	4.6	5.5	7.4	8.3	9.6	12.4	0.01
4 R	0.360	7.8	20.5	7.8	28.4	33.9	45.0	50.4	58.5	74.2	0.04

Values printed in this table are back of queue (feet).

Table D.4 - Movement Speeds (mph) and Geometric Delay

Intersecci n Avenida Los Angeles Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Mov ID	App. Speeds Cruise	App. Speeds Negn	Exit Speeds Negn	Exit Speeds Cruise	Queue Move-up 1st Grn	Queue Move-up 2nd Grn	Av. Section Spd Running	Av. Section Spd Overall	Geom Delay (sec)
South: Acceso Sur									
3L L	40.0	13.5	13.5	40.0			29.7	24.4	8.8
8T T	40.0	40.0	40.0	40.0			34.0	29.0	0.0
East: Acceso Este									
1L L	40.0	13.4	13.4	40.0			30.1	26.3	8.8
6T T	40.0	40.0	40.0	40.0			35.0	31.8	0.0
6R R	40.0	12.5	12.5	40.0			30.8	30.8	8.9
North: Acceso Norte									
4T T	40.0	40.0	40.0	40.0			34.4	29.8	0.0
4R R	40.0	12.5	12.5	40.0			31.0	31.0	8.9

"Running Speed" is the average speed excluding stopped periods.

Table D.5 - Progression Factors and Actuated Signal Parameters

Intersecci n Avenida Los Angeles Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Mov ID	Control	Coord.	Arrival Type	Delay Prog. Factor	Queue Prog. Factor	Gap Settings es	Gap Settings eh	Disp. Grn. Settings 1st Grn Gmin	1st Grn Gmax	2nd Grn Gmin	2nd Grn Gmax
South: Acceso Sur											
3L L	VA	No	3	1.000	1.000	2.5	3.1	6	50		
8T T	VA	No	3	1.000	1.000	2.5	3.1	6	50		
East: Acceso Este											
1L L	VA	No	3	1.000	1.000	2.0	2.6	6	20		
6T T	VA	No	3	1.000	1.000	2.5	3.1	6	50		
6R R	VA	No	3	1.000	1.000	2.5	3.1	6	50	6	50
North: Acceso Norte											
4T T	VA	No	3	1.000	1.000	2.5	3.1	6	50		
4R R	VA	No	3	1.000	1.000	2.5	3.1	6	50	6	50

Table D.6 - Gap Acceptance Parameters

Intersecci n Avenida Los Angeles Calle W
Futura (PM)
Intersection ID: 2 B
Actuated Isolated Signals, Cycle Time = 55 (Sum of User-given Phase Times)

Mov ID	Mov Type	Opng Flow (pcu/h)	Critical Gap Hdwy (s)	Critical Gap Dist (ft)	Foll-up Headway (s)	Entry HV Equiv
South: Acceso Sur						
3L L	Normal	466	4.50	119.6	2.50	2.00
East: Acceso Este						
1L L	Normal	0	4.50	263.6	2.50	2.00
6R R	Normal	403	6.00	352.0	3.00	2.00
North: Acceso Norte						
4R R	Normal	55	6.00	352.0	3.00	2.00

Values in this table are adjusted for heavy vehicles in the entry stream.

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SIDRA INTERSECTION

Output Tables

Intersección Avenida Los Ángeles y PR-26

Futura (PM)

Run Information

```
Cycle Time =   50  (Sum of User-given Phase Times)

* 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 optimum cycle time specification
    Any green split priority specification
  For actuated signal timings, cycle increment is set to 1 second
  Driving on the right-hand side of the road
  Input data specified in US units
  Model Defaults: US HCM (US)
  Peak Flow Period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes.
  Delay definition: Control delay
                    Geometric delay included
  HCM Delay Model option selected
  HCM Queue Model option selected
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile

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

Table B.1 - Movement Definitions and Flow Rates (Origin-Destination)

```
Intersecci n Avenida Los  ngeles y  PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time =  50 (Sum of User-given Phase Times)

-----------------------------------------------------------------
 From       To           Mov            Flow Rate   Flow   Peak Flow
 Approach   Approach     ID    Turn      LV    HV   Scale    Factor
-----------------------------------------------------------------
 SouthEast: Acceso Sureste
            NorthWest    16T   Thru     747     0    1.00     1.00
```

FIGURA 47

```
-----------------------------------------------------------------
 NorthEast: Acceso Noreste
          SouthWest   14T   Thru    392     0    1.00     1.00
-----------------------------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table B.2A - Flow Rates (Separate Light and Heavy Vehicles)

```
Intersecci n Avenida Los  ngeles y  PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time =  50 (Sum of User-given Phase Times)

-----------------------------------------------
  Mov          Left       Through       Right
  ID        ---------    ---------    ---------
             LV    HV     LV    HV     LV    HV
-----------------------------------------------
Demand flows in veh/hour as used by the program
SouthEast: Acceso Sureste
  16T T       0     0    747     0      0     0
-----------------------------------------------
NorthEast: Acceso Noreste
  14T T       0     0    392     0      0     0
-----------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table B.2B - Flow Rates (Total Vehicles and Percent Heavy)

```
Intersecci n Avenida Los  ngeles y  PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time =  50 (Sum of User-given Phase Times)

--------------------------------------------------
  Mov          Left        Through        Right
  ID        ----------    ----------    ----------
           Total  %HV    Total  %HV    Total  %HV
--------------------------------------------------
Demand flows in veh/hour as used by the program
SouthEast: Acceso Sureste
  16T T        0   0.0     747   0.0       0   0.0
--------------------------------------------------
NorthEast: Acceso Noreste
  14T T        0   0.0     392   0.0       0   0.0
--------------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table S.1 - Movement Phase and Timing Parameters

```
Intersecci n Avenida Los  ngeles y  PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time =  50 (Sum of User-given Phase Times)

-----------------------------------------------------------------------------------------
 Mov     Mov           P H A S E  M A T R I X          Lost Tim  Req.Mov.Time     Eff. Grn
 ID      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
-----------------------------------------------------------------------------------------
SouthEast: Acceso Sureste
 16T T       *1      2                                    4        21.3              21
-----------------------------------------------------------------------------------------
NorthEast: Acceso Noreste
 14T T       *2      1                                    4        16.6              21
-----------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------
  Current Phase Sequence: Two-phase
  Input phase sequence: 1 2
  Output phase sequence: 1 2
-----------------------------------------------------------------------------------------
  *  Critical Movement/Green Period

Movement Types:                              Under heading 'Op':
  Slp  Slip Lane Movement                      Y   If opposed turn
  Ped  Pedestrian
  Dum  Dummy
```

Table S.2 - Movement Capacity Parameters

```
Intersecci n Avenida Los  ngeles y  PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time =  50 (Sum of User-given Phase Times)

-------------------------------------------------------------------------------
 Mov      Dem          Satn Flow   Flow Ratio  Total Prac. Prac. Lane   Deg.
 ID       Flow        -----------  ---------   Cap. Deg.  Spare Util   Satn
          (veh    HV   1st   2nd    1st   2nd  (veh  Satn  Cap.
           /h)    (%)  Grn   Grn    Grn   Grn   /h)   xp    (%)   (%)     x
-------------------------------------------------------------------------------
SouthEast: Acceso Sureste
 16T T     747    0.0  3800        0.197        1596  0.90    92   100  0.468*
-------------------------------------------------------------------------------
NorthEast: Acceso Noreste
 14T T     392    0.0  3800        0.103        1596  0.90   266   100  0.246
-------------------------------------------------------------------------------
```

Table S.3 - Intersection Parameters

```
Intersecci n Avenida Los  ngeles y  PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time =  50 (Sum of User-given Phase Times)

--------------------------------------------------------------------------
   Crit App.  Green   Phases   Adjusted    Adjusted   Required   Required
   Mov  and   Period  ------     Lost        Flow     Grn Time   Movement
   ID   Turn          Fr  To     Time        Ratio     Ratio       Time
--------------------------------------------------------------------------
   16T  SE_T         1    2        4        0.197      0.347       21.3
   14T  NE_T         2    1        4        0.103      0.251       16.6
                                 ----       ------     ------      ------
                          Total:    8        0.300      0.598       37.9
--------------------------------------------------------------------------

   Cycle Time:
     Minimum   Maximum   Practical   Chosen
        20        NA         20         50
     (Phase times user specified, cycle time = sum of phase times)

 NA  Cmax does not apply at actuated signals

   Intersection Level of Service              =         B
   Worst movement Level of Service            =         B
   Average intersection delay (s/pers)        =      11.9
   Largest average movement delay (s)         =      12.4
   Largest back of queue, 95% (ft)            =       221
   Performance Index                          =     31.56
   Degree of saturation (highest)             =     0.468
   Practical Spare Capacity (lowest)          =        92 %
   Effective intersection capacity, (veh/h)   =      2434
   Total vehicle flow (veh/h)                 =      1139
   Total person flow (pers/h)                 =      1367
   Total vehicle delay (veh-h/h)              =      3.76
   Total person delay (pers-h/h)              =      4.51
   Total effective vehicle stops (veh/h)      =       695
   Total effective person stops (pers/h)      =       834
   Total vehicle travel (veh-mi/h)            =     432.2
   Total cost ($/h)                           =    235.93
   Total fuel (gal/h)                         =      20.5
   Total CO2 (kg/h)                           =    193.56
```

Table S.4 - Phase Information

```
Intersecci n Avenida Los  ngeles y  PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time =  50 (Sum of User-given Phase Times)

--------------------------------------------------------------------------
Phase  Change  Starting  Green  Displayed  Green  Terminating  Phase  Phase
        Time    Intgrn   Start    Green     End     Intgrn     Time   Split
--------------------------------------------------------------------------
 1        0       4        4       21       25        4         25    50%
 2       25       4       29       21       50        4         25    50%
--------------------------------------------------------------------------
            (Phase times specified by the user)
  Current Phase Sequence: Two-phase
  Input phase sequence: 1 2
  Output phase sequence: 1 2
```

Table S.5 - Movement Performance

Mov ID	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% Back (vehs)	Queue 95% Back (ft)	Perf. Index	Aver. Speed (mph)
SouthEast: Acceso Sureste									
16T T	2.58	3.10	12.4	0.75	0.64	8.8	221	21.33	29.3
NorthEast: Acceso Noreste									
14T T	1.18	1.42	10.8	0.67	0.55	4.2	105	10.22	30.4

Table S.6 - Intersection Performance

Intersecci n Avenida Los ngeles y PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time = 50 (Sum of User-given Phase Times)

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
SouthEast: Acceso Sureste									
747	0.468	2.58	3.10	12.4	0.75	0.64	221	21.33	29.3
NorthEast: Acceso Noreste									
392	0.246	1.18	1.42	10.8	0.67	0.55	105	10.22	30.4
ALL VEHICLES:									
1139	0.468	3.76	4.51	11.9	0.72	0.61	221	31.56	29.7
INTERSECTION (persons):									
1367	0.468		4.51	11.9	0.72	0.61		31.56	29.7

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

Table S.7 - Lane Performance

Intersecci n Avenida Los ngeles y PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time = 50 (Sum of User-given Phase Times)

Lane	Effective Red and Green Times (sec)	Dem Flow (veh	Cap (veh	Deg. Satn	Aver. Delay	Eff. Stop	Queue 95% Back	Lane Length

No.	R1	G1	R2	G2	/h)	/h)	x	(sec)	Rate	(vehs)	(ft)	(ft)
SouthEast: Acceso Sureste												
1 T	29	21	0	0	374	798	0.468	12.4	0.64	8.8	221.2	1600.0
2 T	29	21	0	0	374	798	0.468	12.4	0.64	8.8	221.2	1600.0
NorthEast: Acceso Noreste												
1 T	29	21	0	0	196	798	0.246	10.8	0.55	4.2	105.1	1600.0
2 T	29	21	0	0	196	798	0.246	10.8	0.55	4.2	105.1	1600.0

Table S.8 - Lane Flow and Capacity Information

Intersecci n Avenida Los ngeles y PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time = 50 (Sum of User-given Phase Times)

Lane No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (ft)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	End Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
SouthEast: Acceso Sureste												
1 T	0	374	0	374	12.0	1900	1900	0	0	798	0.468	100
2 T	0	374	0	374	12.0	1900	1900	0	0	798	0.468	100
NorthEast: Acceso Noreste												
1 T	0	196	0	196	12.0	1900	1900	0	0	798	0.246	100
2 T	0	196	0	196	12.0	1900	1900	0	0	798	0.246	100

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.

Table S.9 - Signal Timing Diagram

Intersecci n Avenida Los ngeles y PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time = 50 (Sum of User-given Phase Times)

Displayed (Phase) Green Times

```
             Phase 1                              Phase 2

0                                 25                                   50
I----------------------------------I-----------------------------------I
......GGGGGGGGGGGGGGGGGGGGGGGGGGGG.......GGGGGGGGGGGGGGGGGGGGGGGGGGGGG.
     4                                   29
```

Effective (Movement) Green Times

SouthEast: Acceso Sureste

```
Mov.   16T (T)
I                                I                                I
........GGGGGGGGGGGGGGGGGGGGGGGGGGGG...............................
       6                            27


 NorthEast: Acceso Noreste

Mov.   14T (T)
I                                I                                I
GG.......................................GGGGGGGGGGGGGGGGGGGGGGGGGGGG
  2                                     31


I-----I------I------I------I------I------I------I------I------I------I----->
0     5     10     15     20     25     30     35     40     45     50

                              T I M E  (s)
```

Table S.10 - Movement Capacity and Performance Summary

```
Intersecci n Avenida Los  ngeles y  PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time =  50 (Sum of User-given Phase Times)

-------------------------------------------------------------------------------
 Mov     Mov  Dem   Total  Lane  Deg.  Eff. Grn  Aver.  Eff.    95%    Perf.
 ID      Typ  Flow   Cap.  Util  Satn  -------- Delay  Stop  Back of  Index
              (veh  (veh                1st  2nd        Rate   Queue
               /h)   /h)   (%)     x   Grn  Grn  (sec)         (veh)
-------------------------------------------------------------------------------
SouthEast: Acceso Sureste
 16T T         747  1596   100  0.468*  21*       12.4  0.64    8.8   21.33
-------------------------------------------------------------------------------
NorthEast: Acceso Noreste
 14T T         392  1596   100  0.246   21*       10.8  0.55    4.2   10.22
-------------------------------------------------------------------------------
  *  Maximum degree of saturation, or critical green periods
```

Table S.12A - Fuel Consumption, Emissions and Cost (TOTAL)

```
Intersecci n Avenida Los  ngeles y  PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time =  50 (Sum of User-given Phase Times)

-------------------------------------------------------------
  Mov            Fuel    Cost     HC      CO     NOX     CO2
  ID             Total   Total   Total   Total   Total   Total
                 gal/h   $/h     kg/h    kg/h    kg/h    kg/h
-------------------------------------------------------------
SouthEast: Acceso Sureste
  16T T          13.6   156.78   0.221    9.94   0.310   128.8
               ---------------------------------------------
                 13.6   156.78   0.221    9.94   0.310   128.8
-------------------------------------------------------------
NorthEast: Acceso Noreste
  14T T           6.8    79.15   0.109    4.75   0.154    64.7
```

	6.8	79.15	0.109	4.75	0.154	64.7
INTERSECTION:	20.5	235.93	0.330	14.69	0.464	193.6

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/US gal)	=	2.400
Fuel resource cost factor	=	0.70
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	19.00
Time value factor	=	0.40
Light vehicle mass (1000 lb)	=	3.1
Heavy vehicle mass (1000 lb)	=	24.0
Light vehicle idle fuel rate (US gal/h)	=	0.360
Heavy vehicle idle fuel rate (US gal/h)	=	0.530

Table S.12B - Fuel Consumption, Emissions and Cost (RATE)

Intersecci n Avenida Los ngeles y PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time = 50 (Sum of User-given Phase Times)

Mov ID	Fuel Eff. mpg	Cost Rate $/mi	HC Rate g/km	CO Rate g/km	NOX Rate g/km	CO2 Rate g/km
SouthEast: Acceso Sureste						
16T T	20.8	0.34	0.484	21.79	0.681	282.4
	20.8	0.34	0.484	21.79	0.681	282.4
NorthEast: Acceso Noreste						
14T T	21.7	0.33	0.456	19.86	0.643	270.5
	21.7	0.33	0.456	19.86	0.643	270.5
INTERSECTION:	21.1	0.34	0.474	21.13	0.668	278.3

Table S.14 - Summary of Input and Output Data

Intersecci n Avenida Los ngeles y PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time = 50 (Sum of User-given Phase Times)

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 (ft)	Shrt Lane (ft)
SouthEast: Acceso Sureste												
1 T		374		374	0	1899	21		0.468	12.4	221	1600

```
2 T          374        374    0  1899   21      0.468   12.4   221  1600
        ---------------------------------------------------------------------
          0  747    0   747    0                 0.468   12.4   221
-----------------------------------------------------------------------------
 NorthEast: Acceso Noreste
1 T          196        196    0  1899   21      0.246   10.8   105  1600
2 T          196        196    0  1899   21      0.246   10.8   105  1600
        ---------------------------------------------------------------------
          0  392    0   392    0                 0.246   10.8   105
=============================================================================
 ALL VEHICLES          Total   %       Cycle      Max   Aver.   Max
                       Flow   HV       Time       X    Delay  Queue
                       1139    0         50      0.468   11.9   221
=============================================================================
Peak flow period = 15 minutes.

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

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

Table S.15 - Capacity and Level of Service

```
Intersecci n Avenida Los  ngeles y  PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time =  50 (Sum of User-given Phase Times)

-------------------------------------------------------------------------------
 Mov     Mov    Green Time  Total  Total    Deg.   Aver.   LOS  Longest Queue
 ID      Typ    Ratio (g/C) Flow   Cap.     of    Delay          95% Back
               ------------ (veh   (veh     Satn                (vehs)  (ft)
                1st   2nd    /h)    /h)     (v/c)  (sec)
                grn   grn
-------------------------------------------------------------------------------
SouthEast: Acceso Sureste
 16T T        0.420*          747   1596   0.468*   12.4    B      8.8    221
-------------------------------------------------------------------------------
NorthEast: Acceso Noreste
 14T T        0.420*          392   1596   0.246    10.8    B      4.2    105
-------------------------------------------------------------------------------
  ALL VEHICLES:               1139          0.468    11.9    B      8.8    221
-------------------------------------------------------------------------------
  INTERSECTION (persons):     1367                   11.9           8.8    221
-------------------------------------------------------------------------------
     Level of Service calculations are based on
     average control delay including geometric delay (HCM criteria),
     independent of the current delay definition used.
     For the criteria, refer to the "Level of Service" topic in the
     SIDRA Output Guide or the Output section of the on-line help.
  *  Maximum v/c ratio, or critical green periods
```

Table S.16 - SCATS MF Parameter

```
Intersecci n Avenida Los  ngeles y  PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time =  50 (Sum of User-given Phase Times)
```

Lane No.	Stopline Flow (veh/h)	Capacity (veh/h)	SCATS Satn Flow	SCATS MF	Deg. Satn x	Lane Util. %
SouthEast: Acceso Sureste						
1 T	374	798	1900	1596	0.468	100
2 T	374	798	1900	1596	0.468	100
NorthEast: Acceso Noreste						
1 T	196	798	1900	1596	0.246	100
2 T	196	798	1900	1596	0.246	100

STOPLINE FLOW: Departure flow rate in veh/h as measured at the stop line. This cannot exceed capacity.

SCATS SATURATION FLOW: This allows for lane width, approach grade and turning vehicles. Saturation flow scale applies if specified. The effects of heavy vehicles, parking manoeuvres, number of buses stopping and conflicting pedestrian volume are not included.

SCATS MF: This emulates the MF (Maximum Flow) parameter used in the SCATS control system. It is calculated from the SCATS SATURATION FLOW parameter.

DEG. SATN: The Demand (Arrival) Flow Rate may exceed the Stopline Flow Rate, therefore x > 1 is possible.

Table D.0 - Geometric Delay Data

Intersecci n Avenida Los ngeles y PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time = 50 (Sum of User-given Phase Times)

From Approach	To Approach	Turn	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream Distance (ft)	User Spec?
SouthEast: Acceso Sureste								
	NorthWest	Thru	S	40.0	36.0	1600	403	No
NorthEast: Acceso Noreste								
	SouthWest	Thru	S	40.0	36.0	1600	403	No

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.

Table D.1 - Lane Delays

Intersecci n Avenida Los ngeles y PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time = 50 (Sum of User-given Phase Times)

Lane No.	Deg. Satn x	Stop-line Delay 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
SouthEast: Acceso Sureste										
1 T	0.468	12.0	0.4	12.4	6.7	5.8	0.0	5.8	0.0	12.4
2 T	0.468	12.0	0.4	12.4	6.7	5.8	0.0	5.8	0.0	12.4
NorthEast: Acceso Noreste										
1 T	0.246	10.7	0.2	10.8	5.9	4.9	0.0	4.9	0.0	10.8
2 T	0.246	10.7	0.2	10.8	5.9	4.9	0.0	4.9	0.0	10.8

Delay (seconds/veh)

dn is average stop-start delay for all vehicles queued and unqueued

Table D.2 - Lane Stops

Intersecci n Avenida Los ngeles y PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time = 50 (Sum of User-given Phase Times)

Lane No.	Deg. Satn x	-- Effective Stop Rate -- he1	he2	Geom. hig	Overall h	Prop. Queued pq	Queue Move-up Rate hqm
SouthEast: Acceso Sureste							
1 T	0.468	0.64	0.00	0.00	0.64	0.750	0.00
2 T	0.468	0.64	0.00	0.00	0.64	0.750	0.00
NorthEast: Acceso Noreste							
1 T	0.246	0.55	0.00	0.00	0.55	0.665	0.00
2 T	0.246	0.55	0.00	0.00	0.55	0.665	0.00

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

Table D.3A - Lane Queues (veh)

Intersecci n Avenida Los ngeles y PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time = 50 (Sum of User-given Phase Times)

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
SouthEast: Acceso Sureste											
1 T	0.468	0.4	4.1	0.4	4.5	5.3	7.0	7.7	8.8	10.8	0.14
2 T	0.468	0.4	4.1	0.4	4.5	5.3	7.0	7.7	8.8	10.8	0.14
NorthEast: Acceso Noreste											
1 T	0.246	0.1	1.9	0.1	2.1	2.5	3.3	3.6	4.2	5.3	0.07

2 T	0.246	0.1	1.9	0.1	2.1	2.5	3.3	3.6	4.2	5.3	0.07

Values printed in this table are back of queue (vehicles).

Table D.3B - Lane Queues (feet)

Intersecci n Avenida Los ngeles y PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time = 50 (Sum of User-given Phase Times)

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (feet) Nb1	Nb2	Nb	Percentile (feet) 70%	85%	90%	95%	98%	Queue Stor. Ratio
SouthEast: Acceso Sureste											
1 T	0.468	9.2	103.2	9.2	112.4	133.7	175.2	193.3	221.2	270.7	0.14
2 T	0.468	9.2	103.2	9.2	112.4	133.7	175.2	193.3	221.2	270.7	0.14
NorthEast: Acceso Noreste											
1 T	0.246	3.4	48.2	3.4	51.7	61.7	81.6	91.0	105.1	131.9	0.07
2 T	0.246	3.4	48.2	3.4	51.7	61.7	81.6	91.0	105.1	131.9	0.07

Values printed in this table are back of queue (feet).

Table D.4 - Movement Speeds (mph) and Geometric Delay

Intersecci n Avenida Los ngeles y PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time = 50 (Sum of User-given Phase Times)

Mov ID	App. Speeds Cruise	Negn	Exit Speeds Negn	Cruise	Queue Move-up 1st Grn	2nd Grn	Av. Section Spd Running	Overall	Geom Delay (sec)
SouthEast: Acceso Sureste									
16T T	40.0	40.0	40.0	40.0			33.5	29.3	0.0
NorthEast: Acceso Noreste									
14T T	40.0	40.0	40.0	40.0			34.1	30.4	0.0

"Running Speed" is the average speed excluding stopped periods.

Table D.5 - Progression Factors and Actuated Signal Parameters

Intersecci n Avenida Los ngeles y PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time = 50 (Sum of User-given Phase Times)

Mov ID	Control	Coord.	Arrival Type	Delay Prog. Factor	Queue Prog. Factor	Gap Settings es	Gap Settings eh	Disp. Grn. Settings 1st Grn Gmin	1st Grn Gmax	2nd Grn Gmin	2nd Grn Gmax
SouthEast: Acceso Sureste											
16T T	VA	No	3	1.000	1.000	2.5	3.1	6	50		
NorthEast: Acceso Noreste											
14T T	VA	No	3	1.000	1.000	2.5	3.1	6	50		

Table D.6 - Gap Acceptance Parameters

Intersecci n Avenida Los ngeles y PR-26
Futura (PM)
Intersection ID: 3
Actuated Isolated Signals, Cycle Time = 50 (Sum of User-given Phase Times)

No opposed movements at this intersection

SIDRA SOLUTIONS

Site: New Site - 1
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A1460, PLC, Large Office
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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Tilysay Hernández Acevedo
Agency/Co.:	PLC Traffic Consulting
Date performed:	12/13/2007
Analysis time period:	24 horas
Freeway/Dir of Travel:	Rampa Este
Junction:	
Jurisdiction:	Caguas
Analysis Year:	2007
Description:	Plaza Laguna F (PM)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	55.0	mph
Volume on freeway	3354	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	306	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3354	306		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	932	85		v
Trucks and buses	0	0		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

FIGURA 48

Heavy vehicle adjustment, fHV	1.000	1.000	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	3727	340	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.591 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2205 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4067	6750	No
v_{R12}	2545	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 22.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.336	
Space mean speed in ramp influence area,	S_R = 50.6	mph
Space mean speed in outer lanes,	S_O = 51.3	mph
Space mean speed for all vehicles,	S = 50.9	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Tilysay Hernandez Acevedo
Agency/Co.:	PLC Traffic Consulting
Date performed:	12/13/2007
Analysis time period:	24 horas
Freeway/Dir of Travel:	Rampa Oeste
Junction:	
Jurisdiction:	Caguas
Analysis Year:	2007
Description:	Laguna Plaza F (PM)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	55.0	mph
Volume on freeway	3354	vph

On Ramp Data

Side of freeway	Left	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	431	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3354	431		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	932	120		v
Trucks and buses	0	0		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%		%
Length	mi	mi		mi
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

FIGURA 49

Heavy vehicle adjustment, fHV	1.000	1.000	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	3727	479	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.591 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2205 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4206	6750	No
v_{R12}	2948	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 25.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.360	
Space mean speed in ramp influence area,	S_R = 50.3	mph
Space mean speed in outer lanes,	S_O = 52.3	mph
Space mean speed for all vehicles,	S = 50.9	mph

SIDRA INTERSECTION

Output Tables

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)

Futuro(AM)

Run Information

```
* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in US units
  Model Defaults: US HCM (US)
  Peak Flow Period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes.
  Delay definition: Control delay
                    Geometric delay included
  HCM Delay Model option selected
  HCM Queue Model option selected
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile
```

Table B.1 - Movement Definitions and Flow Rates (Origin-Destination)

```
Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection
```

From Approach	To Approach	Mov ID	Turn	Flow Rate LV	Flow Rate HV	Flow Scale	Peak Flow Factor
South: Acceso Sur							
	East	8R	Right	10	0	1.00	1.00
	North	8T	Thru	1	0	1.00	1.00
East: Acceso Este							
	North	6R	Right	42	0	1.00	1.00

```
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table B.2A - Flow Rates (Separate Light and Heavy Vehicles)

FIGURA 50

```
Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

-----------------------------------------------
  Mov          Left        Through        Right
  ID        ---------    ---------    ---------
             LV    HV     LV    HV     LV    HV
-----------------------------------------------
Demand flows in veh/hour as used by the program
South: Acceso Sur
   8T T       0     0      1     0      0     0
   8R R       0     0      0     0     10     0
-----------------------------------------------
East: Acceso Este
   6R R       0     0      0     0     42     0
-----------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table B.2B - Flow Rates (Total Vehicles and Percent Heavy)

```
Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

--------------------------------------------------
  Mov          Left         Through         Right
  ID        ----------    ----------    ----------
            Total  %HV    Total  %HV    Total  %HV
--------------------------------------------------
Demand flows in veh/hour as used by the program
South: Acceso Sur
   8T T        0   0.0       1   0.0       0   0.0
   8R R        0   0.0       0   0.0      10   0.0
--------------------------------------------------
East: Acceso Este
   6R R        0   0.0       0   0.0      42   0.0
--------------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table S.2 - Movement Capacity Parameters

```
Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection
```

Mov ID	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: Acceso Sur										
8T T	1	0.0	0			1900	0.80	****	100	0.001
8R R	10	0.0	0			1615	0.80	****	100	0.006
East: Acceso Este										
6R R	42	0.0	1	0.0	1	3598	0.80	6753	100	0.012*

Table S.3 - Intersection Parameters

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

Intersection Level of Service	=	NA
Worst movement Level of Service	=	A
Average intersection delay (s/pers)	=	6.4
Largest average movement delay (s)	=	8.9
Largest back of queue, 95% (ft)	=	2
Performance Index	=	0.89
Degree of saturation (highest)	=	0.012
Practical Spare Capacity (lowest)	=	6753 %
Effective intersection capacity, (veh/h)	=	4540
Total vehicle flow (veh/h)	=	53
Total person flow (pers/h)	=	64
Total vehicle delay (veh-h/h)	=	0.09
Total person delay (pers-h/h)	=	0.11
Total effective vehicle stops (veh/h)	=	48
Total effective person stops (pers/h)	=	58
Total vehicle travel (veh-mi/h)	=	19.9
Total cost ($/h)	=	11.28
Total fuel (gal/h)	=	1.0
Total CO2 (kg/h)	=	9.78

NA Not Applicable - Intersection Level of Service is not calculated at two-way stop control or give-way/yield controlled intersections. See Table S.15 or Movement Displays for individual movement LOS values.

Table S.5 - Movement Performance

Mov ID	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% (vehs)	Back (ft)	Perf. Index	Aver. Speed (mph)
South: Acceso Sur									
8T T	0.00	0.00	0.0	0.00	0.00	0.0	0	0.01	40.0
8R R	0.02	0.03	8.9	0.00	0.69	0.0	0	0.16	31.7
East: Acceso Este									
6R R	0.07	0.08	6.0	0.01	0.99	0.1	2	0.72	29.4

Table S.6 - Intersection Performance

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
South: Acceso Sur									
11	0.006	0.02	0.03	8.1	0.00	0.62	0	0.17	32.3
East: Acceso Este									
42	0.012	0.07	0.08	6.0	0.01	0.99	2	0.72	29.4
ALL VEHICLES:									
53	0.012	0.09	0.11	6.4	0.01	0.91	2	0.89	30.0
INTERSECTION (persons):									
64	0.012		0.11	6.4	0.01	0.91		0.89	30.0

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

Table S.7 - Lane Performance

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue 95% Back (ft)	Lane Length (ft)
South: Acceso Sur								
1 T	1	1900	0.001	0.0	0.00	0.0	0.0	1600.0
2 R	10	1615	0.006	8.9	0.69	0.0	0.0	1600.0
East: Acceso Este								
1 R	42	3598	0.012	6.0	0.99	0.1	2.0	1600.0

Table S.8 - Lane Flow and Capacity Information

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: Acceso Sur								
1 T	0	1	0	1	0	1900	0.001	100
2 R	0	0	10	10	10	1615	0.006	100
East: Acceso Este								
1 R	0	0	42	42	42	3598	0.012	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.

Table S.10 - Movement Capacity and Performance Summary

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

Mov ID	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: Acceso Sur									
8T	T	1	1900	100	0.001	0.0	0.00	0.0	0.01
8R	R	10	1615	100	0.006	8.9	0.69	0.0	0.16
East: Acceso Este									
6R	R	42	3598	100	0.012*	6.0	0.99	0.1	0.72

* Maximum degree of saturation

Table S.12A - Fuel Consumption, Emissions and Cost (TOTAL)

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

Mov ID	Fuel Total gal/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
South: Acceso Sur						

8T T	0.0	0.15	0.000	0.00	0.000	0.1
8R R	0.2	2.03	0.003	0.16	0.005	1.8
	0.2	2.18	0.003	0.16	0.005	1.9
East: Acceso Este						
6R R	0.8	9.11	0.014	0.70	0.020	7.9
	0.8	9.11	0.014	0.70	0.020	7.9
INTERSECTION:	1.0	11.28	0.017	0.86	0.025	9.8

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/US gal)	=	2.400
Fuel resource cost factor	=	0.70
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	19.00
Time value factor	=	0.40
Light vehicle mass (1000 lb)	=	3.1
Heavy vehicle mass (1000 lb)	=	24.0
Light vehicle idle fuel rate (US gal/h)	=	0.360
Heavy vehicle idle fuel rate (US gal/h)	=	0.530

Table S.12B - Fuel Consumption, Emissions and Cost (RATE)

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

Mov ID	Fuel Eff. mpg	Cost Rate $/mi	HC Rate g/km	CO Rate g/km	NOX Rate g/km	CO2 Rate g/km
South: Acceso Sur						
8T T	32.6	0.24	0.243	4.77	0.347	180.3
8R R	20.0	0.34	0.515	25.68	0.747	293.5
	20.8	0.33	0.490	23.77	0.710	283.1
East: Acceso Este						
6R R	18.9	0.36	0.551	27.65	0.790	310.4
	18.9	0.36	0.551	27.65	0.790	310.4
INTERSECTION:	19.3	0.35	0.538	26.84	0.773	304.7

Table S.14 - Summary of Input and Output Data

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

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 (ft)	Shrt Lane (ft)
South: Acceso Sur												
1 T		1		1	0				0.001	0.0	0	1600
2 R			10	10	0				0.006	8.9	0	1600
	0	1	10	11	0				0.006	8.1		
East: Acceso Este												
1 R			42	42	0				0.012	6.0	2	1600
	0	0	42	42	0				0.012	6.0	2	
ALL VEHICLES				Total Flow 53	% HV 0				Max X 0.012	Aver. Delay 6.4	Max Queue 2	

Peak flow period = 15 minutes.

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

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Table S.15 - Capacity and Level of Service

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

Mov ID	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue 95% Back (vehs)	(ft)
South: Acceso Sur								
8T	T	1	1900	0.001	0.0	A	0.0	0
8R	R	10	1615	0.006	8.9	A	0.0	0
East: Acceso Este								
6R	R	42	3598	0.012*	6.0	A	0.1	2
ALL VEHICLES:		53		0.012	6.4	NA	0.1	2

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

NA Not Applicable - Intersection Level of Service is not calculated at two-way stop control or give-way/yield controlled intersections.

* Maximum v/c ratio, or critical green periods
" Movement Level of service has been determined using adjacent lane v/c ratio rather than short lane v/c ratio (v/c=1.0)

Table D.0 - Geometric Delay Data

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

From Approach	To Approach	Turn	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream Dist. (ft)	Distance User Spec?
South: Acceso Sur								
	East	Right	32.8	12.5	51.5	1600	387	No
	North	Thru	S	40.0	36.0	1600	403	No
East: Acceso Este								
	North	Right	32.8	12.5	51.5	1600	387	No

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.

Table D.1 - Lane Delays

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Stop-line Delay 1st d1	2nd d2	Total dSL	Delay (seconds/veh) Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: Acceso Sur										
1 T	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 R	0.006	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.9	8.9
East: Acceso Este										
1 R	0.012	1.0	0.0	1.0	0.0	1.0	0.0	1.0	5.0	6.0

dn is average stop-start delay for all vehicles queued and unqueued

Table D.2 - Lane Stops

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	-- Effective Stop Rate -- he1	he2	Geom. hig	Overall h	Prop. Queued pq	Queue Move-up Rate hqm
South: Acceso Sur							
1 T	0.001	0.00	0.00	0.00	0.00	0.000	0.00
2 R	0.006	0.00	0.00	0.69	0.69	0.000	0.00
East: Acceso Este							
1 R	0.012	0.00	0.00	0.99	0.99	0.010	0.00

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

Table D.3A - Lane Queues (veh)

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: Acceso Sur											
1 T	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
2 R	0.006	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
East: Acceso Este											
1 R	0.012	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.00

Values printed in this table are back of queue (vehicles).

Table D.3B - Lane Queues (feet)

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (feet) Nb1	Nb2	Nb	Percentile (feet) 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: Acceso Sur											
1 T	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
2 R	0.006	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
East: Acceso Este											
1 R	0.012	0.0	0.6	0.0	0.6	1.2	1.4	1.6	2.0	2.3	0.00

Values printed in this table are back of queue (feet).

Table D.4 - Movement Speeds (mph) and Geometric Delay

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

Mov ID	App. Speeds Cruise	App. Speeds Negn	Exit Speeds Negn	Exit Speeds Cruise	Queue Move-up 1st Grn	Queue Move-up 2nd Grn	Av. Section Spd Running	Av. Section Spd Overall	Geom Delay (sec)
South: Acceso Sur									
8T T	40.0	40.0	40.0	40.0			40.0	40.0	0.0
8R R	40.0	12.5	12.5	40.0			31.7	31.7	8.9
East: Acceso Este									
6R R	40.0	0.0	12.5	40.0			30.0	29.4	5.0

"Running Speed" is the average speed excluding stopped periods.

Table D.6 - Gap Acceptance Parameters

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro(AM)
Intersection ID: 0
Stop Sign Controlled Intersection

Mov ID	Mov Type	Opng Flow (pcu/h)	Critical Gap Hdwy (s)	Critical Gap Dist (ft)	Foll-up Headway (s)	Entry HV Equiv
South: Acceso Sur						
No opposed movements on this approach						
East: Acceso Este						
6R R	Normal	1	2.00	117.3	1.00	2.00

Values in this table are adjusted for heavy vehicles in the entry stream.

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Site: New Site - 1
I:\Laguna Plaza\Corridas SIDRA\Int. Propuestas\Int. Avenida Laguna y Entrada Edificio Residencial (103 unidades)\Int. Ave Laguna y Entrada Edif. Res. (103 unidades) F (AM) .aap
Processed Jan 23, 2008 11:53:11AM

A1460, PLC, Large Office
Produced by SIDRA Intersection 3.2.0.1455
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SIDRA INTERSECTION

Output Tables

Int. Avenida Laguna y Entrada Hotel

Futura (AM)

Run Information

```
* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in US units
  Model Defaults: US HCM (US)
  Peak Flow Period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes.
  Delay definition: Control delay
                    Geometric delay included
  HCM Delay Model option selected
  HCM Queue Model option selected
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile
```

Table B.1 - Movement Definitions and Flow Rates (Origin-Destination)

```
Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

-----------------------------------------------------------------
 From      To          Mov           Flow Rate   Flow   Peak Flow
 Approach  Approach    ID    Turn     LV    HV   Scale    Factor
-----------------------------------------------------------------
 West: Acceso Oeste
           South       2R    Right    58     0    1.00     1.00
           East        2T    Thru    365     0    1.00     1.00
-----------------------------------------------------------------
 South: Acceso Sur
           East        8R    Right    70     0    1.00     1.00
-----------------------------------------------------------------
 East: Acceso Este
           South       1L    Left     51     0    1.00     1.00
-----------------------------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

FIGURA 51

Table B.2A - Flow Rates (Separate Light and Heavy Vehicles)

```
Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

-----------------------------------------------
  Mov          Left        Through       Right
  ID        ---------    ---------    ---------
             LV    HV     LV    HV     LV    HV
-----------------------------------------------
Demand flows in veh/hour as used by the program
West: Acceso Oeste
   2T T       0     0    365     0      0     0
   2R R       0     0      0     0     58     0
-----------------------------------------------
South: Acceso Sur
   8R R       0     0      0     0     70     0
-----------------------------------------------
East: Acceso Este
   1L L      51     0      0     0      0     0
-----------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table B.2B - Flow Rates (Total Vehicles and Percent Heavy)

```
Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

--------------------------------------------------
  Mov          Left         Through        Right
  ID        ----------    ----------    ----------
            Total  %HV    Total  %HV    Total  %HV
--------------------------------------------------
Demand flows in veh/hour as used by the program
West: Acceso Oeste
   2T T        0   0.0     365   0.0       0   0.0
   2R R        0   0.0       0   0.0      58   0.0
--------------------------------------------------
South: Acceso Sur
   8R R        0   0.0       0   0.0      70   0.0
--------------------------------------------------
East: Acceso Este
   1L L       51   0.0       0   0.0       0   0.0
--------------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table S.2 - Movement Capacity Parameters

Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

Mov ID	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
West: Acceso Oeste										
2T T	365	0.0	51	0.0	51	1624	0.80	256	100	0.225*
2R R	58	0.0	51	0.0	51	258	0.80	256	100	0.225*
South: Acceso Sur										
8R R	70	0.0	365	0.0	365	3091	0.80	3433	100	0.023
East: Acceso Este										
1L L	51	0.0	423	0.0	423	1107	0.80	1636	100	0.046

Table S.3 - Intersection Parameters

Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

Intersection Level of Service	=	NA
Worst movement Level of Service	=	B
Average intersection delay (s/pers)	=	3.1
Largest average movement delay (s)	=	10.5
Largest back of queue, 95% (ft)	=	30
Performance Index	=	7.31
Degree of saturation (highest)	=	0.225
Practical Spare Capacity (lowest)	=	256 %
Effective intersection capacity, (veh/h)	=	2420
Total vehicle flow (veh/h)	=	544
Total person flow (pers/h)	=	653
Total vehicle delay (veh-h/h)	=	0.46
Total person delay (pers-h/h)	=	0.55
Total effective vehicle stops (veh/h)	=	149
Total effective person stops (pers/h)	=	178
Total vehicle travel (veh-mi/h)	=	205.8
Total cost ($/h)	=	94.80
Total fuel (gal/h)	=	8.2
Total CO2 (kg/h)	=	77.94

NA Not Applicable - Intersection Level of Service is not calculated at two-way stop control or give-way/yield controlled intersections. See Table S.15 or Movement Displays for individual movement LOS values.

Table S.5 - Movement Performance

Mov ID	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% Back (vehs)	(ft)	Perf. Index	Aver. Speed (mph)
West: Acceso Oeste									
2T T	0.04	0.05	0.4	0.18	0.05	1.2	30	4.27	38.2
2R R	0.15	0.18	9.3	0.17	0.61	1.2	30	0.99	31.2
South: Acceso Sur									
8R R	0.12	0.14	6.2	0.27	0.86	0.1	3	1.15	29.6
East: Acceso Este									
1L L	0.15	0.18	10.5	0.44	0.69	0.2	6	0.90	30.4

Table S.6 - Intersection Performance

Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
West: Acceso Oeste									
423	0.225	0.19	0.23	1.6	0.18	0.13	30	5.26	37.1
South: Acceso Sur									
70	0.023	0.12	0.14	6.2	0.27	0.86	3	1.15	29.6
East: Acceso Este									
51	0.046	0.15	0.18	10.5	0.44	0.69	6	0.90	30.4
ALL VEHICLES:									
544	0.225	0.46	0.55	3.1	0.21	0.27	30	7.31	35.2
INTERSECTION (persons):									
653	0.225		0.55	3.1	0.21	0.27		7.31	35.2

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

Table S.7 - Lane Performance

Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	(ft)	Lane Length (ft)
West: Acceso Oeste								

1 T	189	843	0.225	0.5	0.05	1.2	29.9	1600.0
2 TR	234	1039	0.225	2.6	0.18	1.2	30.5	1600.0
South: Acceso Sur								
1 R	70	3091	0.023	6.2	0.86	0.1	3.0	1600.0
East: Acceso Este								
1 L	51	1107	0.046	10.5	0.69	0.2	5.9	1600.0

Table S.8 - Lane Flow and Capacity Information

Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
West: Acceso Oeste								
1 T	0	189	0	189	60	843	0.225	100
2 TR	0	176	58	234	60	1039	0.225	100
South: Acceso Sur								
1 R	0	0	70	70	60	3091	0.023	100
East: Acceso Este								
1 L	51	0	0	51	51	1107	0.046	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.

Table S.10 - Movement Capacity and Performance Summary

Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

Mov ID	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: Acceso Oeste									
2T	T	365	1624	100	0.225*	0.4	0.05	1.2	4.27
2R	R	58	258	100	0.225*	9.3	0.61	1.2	0.99
South: Acceso Sur									
8R	R	70	3091	100	0.023	6.2	0.86	0.1	1.15
East: Acceso Este									

1L L	51	1107	100	0.046	10.5	0.69	0.2	0.90

* Maximum degree of saturation

Table S.12A - Fuel Consumption, Emissions and Cost (TOTAL)

Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

Mov ID	Fuel Total gal/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
West: Acceso Oeste						
2T T	4.8	57.06	0.066	1.96	0.095	45.1
2R R	1.1	11.93	0.018	0.91	0.026	10.4
	5.9	68.99	0.084	2.87	0.121	55.5
South: Acceso Sur						
8R R	1.4	15.10	0.023	1.17	0.033	13.1
	1.4	15.10	0.023	1.17	0.033	13.1
East: Acceso Este						
1L L	1.0	10.70	0.016	0.82	0.024	9.3
	1.0	10.70	0.016	0.82	0.024	9.3
INTERSECTION:	8.2	94.80	0.124	4.87	0.178	77.9

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/US gal)	=	2.400
Fuel resource cost factor	=	0.70
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	19.00
Time value factor	=	0.40
Light vehicle mass (1000 lb)	=	3.1
Heavy vehicle mass (1000 lb)	=	24.0
Light vehicle idle fuel rate (US gal/h)	=	0.360
Heavy vehicle idle fuel rate (US gal/h)	=	0.530

Table S.12B - Fuel Consumption, Emissions and Cost (RATE)

Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

Mov	Fuel	Cost	HC	CO	NOX	CO2

ID	Eff. mpg	Rate $/mi	Rate g/km	Rate g/km	Rate g/km	Rate g/km
West: Acceso Oeste						
2T T	29.1	0.26	0.295	8.78	0.425	202.4
2R R	19.9	0.34	0.521	26.02	0.754	296.2
	27.3	0.27	0.326	11.13	0.470	215.2
South: Acceso Sur						
8R R	19.0	0.36	0.549	27.64	0.789	309.8
	19.0	0.36	0.549	27.64	0.789	309.8
East: Acceso Este						
1L L	19.5	0.35	0.534	26.72	0.769	301.4
	19.5	0.35	0.534	26.72	0.769	301.4
INTERSECTION:	25.0	0.29	0.374	14.69	0.539	235.3

Table S.14 - Summary of Input and Output Data

Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

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 (ft)	Shrt Lane (ft)
West: Acceso Oeste												
1 T		189		189	0				0.225	0.5	30	1600
2 TR		176	58	234	0				0.225	2.6	30	1600
	0	365	58	423	0				0.225	1.6	30	
South: Acceso Sur												
1 R			70	70	0				0.023	6.2	3	1600
	0	0	70	70	0				0.023	6.2	3	
East: Acceso Este												
1 L	51			51	0				0.046	10.5	6	1600
	51	0	0	51	0				0.046	10.5	6	
ALL VEHICLES				Total Flow 544	% HV 0				Max X 0.225	Aver. Delay 3.1	Max Queue 30	

Peak flow period = 15 minutes.

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

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Table S.15 - Capacity and Level of Service

Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

Mov ID	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue 95% Back (vehs)	(ft)
West: Acceso Oeste								
2T	T	365	1624	0.225*	0.4	A	1.2	30
2R	R	58	258	0.225*	9.3	A	1.2	30
South: Acceso Sur								
8R	R	70	3091	0.023	6.2	A	0.1	3
East: Acceso Este								
1L	L	51	1107	0.046	10.5	B	0.2	6
ALL VEHICLES:		544		0.225	3.1	NA	1.2	30

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

NA Not Applicable - Intersection Level of Service is not calculated at
two-way stop control or give-way/yield controlled intersections.

* Maximum v/c ratio, or critical green periods

Table D.0 - Geometric Delay Data

Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

From Approach	To Approach	Turn	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream (ft)	Distance User Spec?
West: Acceso Oeste								
	South	Right	32.8	12.5	51.5	1600	387	No
	East	Thru	S	40.0	36.0	1600	403	No
South: Acceso Sur								
	East	Right	32.8	12.5	51.5	1600	387	No
East: Acceso Este								
	South	Left	30.6	12.2	48.1	1600	384	No

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.

Table D.1 - Lane Delays

Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Stop-line Delay 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
West: Acceso Oeste										
1 T	0.225	0.5	0.0	0.5	1.7	0.0	0.0	0.0	0.0	0.5
2 TR	0.225	0.4	0.0	0.4	1.3	0.0	0.0	0.0	2.2	2.6
South: Acceso Sur										
1 R	0.023	1.2	0.0	1.2	0.6	0.6	0.0	0.6	5.0	6.2
East: Acceso Este										
1 L	0.046	1.5	0.0	1.5	1.7	0.0	0.0	0.0	9.0	10.5

Delay (seconds/veh)

dn is average stop-start delay for all vehicles queued and unqueued

Table D.2 - Lane Stops

Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Effective Stop Rate he1	he2	Geom. hig	Overall h	Prop. Queued pq	Queue Move-up Rate hqm
West: Acceso Oeste							
1 T	0.225	0.05	0.00	0.00	0.05	0.186	0.00
2 TR	0.225	0.04	0.00	0.14	0.18	0.169	0.00
South: Acceso Sur							
1 R	0.023	0.12	0.00	0.73	0.86	0.266	0.00
East: Acceso Este							
1 L	0.046	0.30	0.00	0.39	0.69	0.435	0.00

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

Table D.3A - Lane Queues (veh)

Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
West: Acceso Oeste											
1 T	0.225	0.0	0.4	0.0	0.4	0.7	0.9	1.0	1.2	1.4	0.02
2 TR	0.225	0.0	0.4	0.0	0.4	0.7	0.9	1.0	1.2	1.4	0.02
South: Acceso Sur											
1 R	0.023	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.00
East: Acceso Este											
1 L	0.046	0.0	0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.00

Values printed in this table are back of queue (vehicles).

Table D.3B - Lane Queues (feet)

Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (feet) Nb1	Nb2	Nb	Percentile (feet) 70%	85%	90%	95%	98%	Queue Stor. Ratio
West: Acceso Oeste											
1 T	0.225	0.0	9.4	0.0	9.4	17.6	21.4	24.2	29.9	34.6	0.02
2 TR	0.225	0.0	9.6	0.0	9.6	18.0	21.8	24.7	30.5	35.3	0.02
South: Acceso Sur											
1 R	0.023	0.0	0.9	0.0	0.9	1.8	2.2	2.4	3.0	3.5	0.00
East: Acceso Este											
1 L	0.046	0.0	1.9	0.0	1.9	3.5	4.3	4.8	5.9	6.9	0.00

Values printed in this table are back of queue (feet).

Table D.4 - Movement Speeds (mph) and Geometric Delay

Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

Mov ID	App. Speeds Cruise	App. Speeds Negn	Exit Speeds Negn	Exit Speeds Cruise	Queue Move-up 1st Grn	Queue Move-up 2nd Grn	Av. Section Spd Running	Av. Section Spd Overall	Geom Delay (sec)
West: Acceso Oeste									
2T T	40.0	40.0	40.0	40.0			38.2	38.2	0.0
2R R	40.0	12.5	12.5	40.0			31.2	31.2	8.9
South: Acceso Sur									
8R R	40.0	0.0	12.5	40.0			30.0	29.6	5.0
East: Acceso Este									
1L L	40.0	12.2	12.2	40.0			30.4	30.4	9.0

"Running Speed" is the average speed excluding stopped periods.

Table D.6 - Gap Acceptance Parameters

Int. Avenida Laguna y Entrada Hotel
Futura (AM)
Intersection ID: 2
Stop Sign Controlled Intersection

Mov ID	Mov Type	Opng Flow (pcu/n)	Critical Gap Hdwy (s)	Critical Gap Dist (ft)	Foll-up Headway (s)	Entry HV Equiv
West: Acceso Oeste						
2T T	Normal	51	6.50	116.3	4.00	2.00
2R R	Normal	51	2.00	35.8	1.00	2.00
South: Acceso Sur						
8R R	Normal	365	2.00	117.3	1.00	2.00
East: Acceso Este						
1L L	Normal	423	4.10	217.9	2.20	2.00

Values in this table are adjusted for heavy vehicles in the entry stream.

SIDRA SOLUTIONS

Site: New Site - 1
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A1460, PLC, Large Office
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SIDRA INTERSECTION

Output Tables

Intersección Avenida Laguna y Entrada Comercio y Oficinas

Futura (AM)

Run Information

```
* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in US units
  Model Defaults: US HCM (US)
  Peak Flow Period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes.
  Delay definition: Control delay
                    Geometric delay included
  HCM Delay Model option selected
  HCM Queue Model option selected
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile
```

Table B.1 - Movement Definitions and Flow Rates (Origin-Destination)

```
Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection
```

From Approach	To Approach	Mov ID	Turn	Flow Rate LV	Flow Rate HV	Flow Scale	Peak Flow Factor
West: Acceso Oeste							
	South	2R	Right	32	0	1.00	1.00
	North	5L	Left	1	0	1.00	1.00
South: Acceso Sur							
	West	3L	Left	83	0	1.00	1.00
	North	8T	Thru	51	0	1.00	1.00
North: Acceso Norte							
	West	4R	Right	93	0	1.00	1.00
	South	4T	Thru	435	0	1.00	1.00

```
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

FIGURA 52

Table B.2A - Flow Rates (Separate Light and Heavy Vehicles)

```
Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

-----------------------------------------------
  Mov          Left        Through       Right
  ID        ---------    ---------    ---------
             LV    HV     LV    HV     LV    HV
-----------------------------------------------
Demand flows in veh/hour as used by the program
West: Acceso Oeste
   5L L       1     0      0     0      0     0
   2R R       0     0      0     0     32     0
-----------------------------------------------
South: Acceso Sur
   3L L      83     0      0     0      0     0
   8T T       0     0     51     0      0     0
-----------------------------------------------
North: Acceso Norte
   4T T       0     0    435     0      0     0
   4R R       0     0      0     0     93     0
-----------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table B.2B - Flow Rates (Total Vehicles and Percent Heavy)

```
Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

--------------------------------------------------
  Mov          Left         Through        Right
  ID        ----------    ----------    ----------
            Total  %HV    Total  %HV    Total  %HV
--------------------------------------------------
Demand flows in veh/hour as used by the program
West: Acceso Oeste
   5L L        1   0.0       0   0.0       0   0.0
   2R R        0   0.0       0   0.0      32   0.0
--------------------------------------------------
South: Acceso Sur
   3L L       83   0.0       0   0.0       0   0.0
   8T T        0   0.0      51   0.0       0   0.0
--------------------------------------------------
North: Acceso Norte
   4T T        0   0.0     435   0.0       0   0.0
   4R R        0   0.0       0   0.0      93   0.0
--------------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table S.2 - Movement Capacity Parameters

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
West: Acceso Oeste										
5L L	1	0.0	615+	0.0	615	75	0.80	5900	100	0.013
2R R	32	0.0	435	0.0	435	2406	0.80	5915	100	0.013
South: Acceso Sur										
3L L	83	0.0	528	0.0	528	992	0.80	856	100	0.084
8T T	51	0.0	1	0.0	1	899	0.80	1310	68	0.057
North: Acceso Norte										
4T T	435	0.0	84	0.0	84	808	0.80	49	100	0.538*
4R R	93	0.0	0			1615	0.80	1289	100	0.058

+ Percentage of exiting flow included in total opposing flow

Table S.3 - Intersection Parameters

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Intersection Level of Service	=	NA
Worst movement Level of Service	=	B
Average intersection delay (s/pers)	=	3.7
Largest average movement delay (s)	=	11.1
Largest back of queue, 95% (ft)	=	109
Performance Index	=	10.18
Degree of saturation (highest)	=	0.538
Practical Spare Capacity (lowest)	=	49 %
Effective intersection capacity, (veh/h)	=	1291
Total vehicle flow (veh/h)	=	695
Total person flow (pers/h)	=	834
Total vehicle delay (veh-h/h)	=	0.71
Total person delay (pers-h/h)	=	0.85
Total effective vehicle stops (veh/h)	=	223
Total effective person stops (pers/h)	=	267
Total vehicle travel (veh-mi/h)	=	263.0
Total cost ($/h)	=	124.17
Total fuel (gal/h)	=	10.9
Total CO2 (kg/h)	=	103.58

NA Not Applicable - Intersection Level of Service is not calculated at two-way stop control or give-way/yield controlled intersections. See Table S.15 or Movement Displays for individual movement LOS values.

Table S.5 - Movement Performance

Mov ID	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% Back (vehs)	(ft)	Perf. Index	Aver. Speed (mph)
West: Acceso Oeste									
5L L	0.00	0.00	6.5	0.32	0.94	0.1	2	0.02	29.5
2R R	0.06	0.07	6.5	0.32	0.83	0.1	2	0.53	29.5
South: Acceso Sur									
3L L	0.26	0.31	11.1	0.50	0.75	0.4	11	1.51	30.1
8T T	0.00	0.00	0.0	0.02	0.00	0.3	6	0.56	39.8
North: Acceso Norte									
4T T	0.17	0.20	1.4	0.37	0.16	4.4	109	6.10	36.5
4R R	0.23	0.28	8.9	0.00	0.69	0.0	0	1.46	31.7

Table S.6 - Intersection Performance

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
West: Acceso Oeste									
33	0.013	0.06	0.07	6.5	0.32	0.84	2	0.54	29.5
South: Acceso Sur									
134	0.084	0.26	0.31	6.9	0.31	0.46	11	2.08	33.2
North: Acceso Norte									
528	0.538	0.40	0.48	2.7	0.30	0.25	109	7.56	35.6
ALL VEHICLES:									
695	0.538	0.71	0.85	3.7	0.31	0.32	109	10.18	34.8
INTERSECTION (persons):									
834	0.538		0.85	3.7	0.31	0.32		10.18	34.8

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

Table S.7 - Lane Performance

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue 95% Back (ft)	Lane Length (ft)
West: Acceso Oeste								
1 LR	33	2481	0.013	6.5	0.84	0.1	1.6	1600.0
South: Acceso Sur								
1 L	83	992	0.084	11.1	0.75	0.4	10.8	1600.0
2 T	51	899	0.057	0.0	0.00	0.3	6.5	1600.0
North: Acceso Norte								
1 T	435	808	0.538	1.4	0.16	4.4	109.3	1600.0
2 R	93	1615	0.058	8.9	0.69	0.0	0.0	1600.0

Table S.8 - Lane Flow and Capacity Information

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
West: Acceso Oeste								
1 LR	1	0	32	33	33	2481	0.013	100
South: Acceso Sur								
1 L	83	0	0	83	60	992	0.084	100
2 T	0	51	0	51	51	899	0.057	68P
North: Acceso Norte								
1 T	0	435	0	435	60	808	0.538	100
2 R	0	0	93	93	93	1615	0.058	100

P Lane under-utilisation found by the "Program". This includes cases where the value of lane under-utilisation due to downstream effects has been modified by the program during lane flow calculations (e.g. a de facto exclusive lane has been found).

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.

Table S.10 - Movement Capacity and Performance Summary

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas

Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	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: Acceso Oeste									
5L	L	1	75	100	0.013	6.5	0.94	0.1	0.02
2R	R	32	2406	100	0.013	6.5	0.83	0.1	0.53
South: Acceso Sur									
3L	L	83	992	100	0.084	11.1	0.75	0.4	1.51
8T	T	51	899	68	0.057	0.0	0.00	0.3	0.56
North: Acceso Norte									
4T	T	435	808	100	0.538*	1.4	0.16	4.4	6.10
4R	R	93	1615	100	0.058	8.9	0.69	0.0	1.46

* Maximum degree of saturation

Table S.12A - Fuel Consumption, Emissions and Cost (TOTAL)

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Fuel Total gal/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
West: Acceso Oeste						
5L L	0.0	0.22	0.000	0.02	0.000	0.2
2R R	0.6	6.92	0.011	0.54	0.015	6.0
	0.7	7.14	0.011	0.55	0.016	6.2
South: Acceso Sur						
3L L	1.6	17.52	0.027	1.35	0.039	15.2
8T T	0.6	7.45	0.008	0.16	0.011	5.7
	2.2	24.98	0.035	1.51	0.050	20.9
North: Acceso Norte						
4T T	6.3	73.18	0.093	3.46	0.135	60.0
4R R	1.7	18.88	0.029	1.45	0.042	16.5
	8.1	92.06	0.122	4.91	0.177	76.5
INTERSECTION:	10.9	124.17	0.168	6.97	0.242	103.6

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/US gal)	=	2.400
Fuel resource cost factor	=	0.70
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	19.00
Time value factor	=	0.40

```
Light vehicle mass (1000 lb)              =       3.1
Heavy vehicle mass (1000 lb)              =      24.0
Light vehicle idle fuel rate (US gal/h)   =     0.360
Heavy vehicle idle fuel rate (US gal/h)   =     0.530
```

Table S.12B - Fuel Consumption, Emissions and Cost (RATE)

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Fuel Eff. mpg	Cost Rate $/mi	HC Rate g/km	CO Rate g/km	NOX Rate g/km	CO2 Rate g/km
West: Acceso Oeste						
5L L	19.0	0.36	0.548	27.49	0.787	309.5
2R R	19.0	0.36	0.550	27.64	0.789	310.1
	19.0	0.36	0.550	27.64	0.789	310.0
South: Acceso Sur						
3L L	19.4	0.35	0.537	26.84	0.771	302.6
8T T	32.3	0.24	0.248	5.11	0.354	182.2
	22.9	0.31	0.426	18.52	0.611	256.5
North: Acceso Norte						
4T T	26.0	0.28	0.351	13.03	0.508	225.9
4R R	20.0	0.34	0.515	25.68	0.747	293.5
	24.7	0.29	0.379	15.25	0.550	237.7
INTERSECTION:	24.0	0.29	0.396	16.46	0.573	244.7

Table S.14 - Summary of Input and Output Data

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

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 (ft)	Shrt Lane (ft)
West: Acceso Oeste												
1 LR	1		32	33	0				0.013	6.5	2	1600
	1	0	32	33	0				0.013	6.5	2	
South: Acceso Sur												
1 L	83			83	0				0.084	11.1	11	1600
2 T		51		51	0				0.057	0.0	6	1600

```
         83   51    0   134    0                  0.084    6.9    11
-----------------------------------------------------------------------
 North: Acceso Norte
1 T          435        435    0                  0.538    1.4   109  1600
2 R                 93    93    0                  0.058    8.9     0  1600
        ---------------------------------------------------------------
          0  435   93   528    0                  0.538    2.7   109
=======================================================================
 ALL VEHICLES          Total   %                   Max   Aver.   Max
                       Flow   HV                    X    Delay  Queue
                        695    0                  0.538    3.7   109
=======================================================================
Peak flow period = 15 minutes.

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

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-
      controlled intersections and apply only to continuous lanes.
```

Table S.15 - Capacity and Level of Service

```
Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

-----------------------------------------------------------------
 Mov     Mov    Total  Total    Deg.   Aver.   LOS  Longest Queue
 ID      Typ    Flow    Cap.     of    Delay          95% Back
                (veh   (veh     Satn                (vehs)  (ft)
                  /h)    /h)    (v/c)  (sec)
-----------------------------------------------------------------
West: Acceso Oeste
  5L L             1     75   0.013     6.5    A      0.1      2
  2R R            32   2406   0.013     6.5    A      0.1      2
-----------------------------------------------------------------
South: Acceso Sur
  3L L            83    992   0.084    11.1    B      0.4     11
  8T T            51    899   0.057     0.0    A      0.3      6
-----------------------------------------------------------------
North: Acceso Norte
  4T T           435    808   0.538*    1.4    A      4.4    109
  4R R            93   1615   0.058     8.9    A      0.0      0
-----------------------------------------------------------------
 ALL VEHICLES:   695          0.538     3.7   NA      4.4    109
-----------------------------------------------------------------
     Level of Service calculations are based on
     average control delay including geometric delay (HCM criteria),
     independent of the current delay definition used.
     For the criteria, refer to the "Level of Service" topic in the
     SIDRA Output Guide or the Output section of the on-line help.

 NA  Not Applicable - Intersection Level of Service is not calculated at
     two-way stop control or give-way/yield controlled intersections.

  *  Maximum v/c ratio, or critical green periods
  "  Movement Level of service has been determined using adjacent lane
     v/c ratio rather than short lane v/c ratio (v/c=1.0)
```

Table D.0 - Geometric Delay Data

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

From Approach	To Approach	Turn	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream Distance (ft)	User Spec?
West: Acceso Oeste								
	South	Right	32.8	12.5	51.5	1600	387	No
	North	Left	36.0	13.0	56.5	1600	390	No
South: Acceso Sur								
	West	Left	30.6	12.2	48.1	1600	384	No
	North	Thru	S	40.0	48.0	1600	403	No
North: Acceso Norte								
	West	Right	32.8	12.5	51.5	1600	387	No
	South	Thru	S	40.0	48.0	1600	403	No

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.

Table D.1 - Lane Delays

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Delay (seconds/veh) Stop-line 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
West: Acceso Oeste										
1 LR	0.013	1.5	0.0	1.5	0.7	0.8	0.0	0.8	5.0	6.5
South: Acceso Sur										
1 L	0.084	2.1	0.0	2.1	2.0	0.1	0.0	0.1	9.0	11.1
2 T	0.057	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
North: Acceso Norte										
1 T	0.538	1.3	0.1	1.4	3.3	0.0	0.0	0.0	0.0	1.4
2 R	0.058	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.9	8.9

dn is average stop-start delay for all vehicles queued and unqueued

Table D.2 - Lane Stops

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	-- Effective Stop Rate -- he1	he2	Geom. hig	Overall h	Prop. Queued pq	Queue Move-up Rate hqm
West: Acceso Oeste							
1 LR	0.013	0.16	0.00	0.68	0.84	0.319	0.00
South: Acceso Sur							
1 L	0.084	0.40	0.00	0.35	0.75	0.496	0.00
2 T	0.057	0.00	0.00	0.00	0.00	0.015	0.00
North: Acceso Norte							
1 T	0.538	0.16	0.00	0.00	0.16	0.367	0.01
2 R	0.058	0.00	0.00	0.69	0.69	0.000	0.00

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

Table D.3A - Lane Queues (veh)

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
West: Acceso Oeste											
1 LR	0.013	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.00
South: Acceso Sur											
1 L	0.084	0.0	0.1	0.0	0.1	0.3	0.3	0.4	0.4	0.5	0.01
2 T	0.057	0.0	0.1	0.0	0.1	0.2	0.2	0.2	0.3	0.3	0.00
North: Acceso Norte											
1 T	0.538	0.0	1.3	0.1	1.4	2.5	3.1	3.5	4.4	5.1	0.07
2 R	0.058	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00

Values printed in this table are back of queue (vehicles).

Table D.3B - Lane Queues (feet)

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (feet) Nb1	Nb2	Nb	Percentile (feet) 70%	85%	90%	95%	98%	Queue Stor. Ratio
West: Acceso Oeste											
1 LR	0.013	0.0	0.5	0.0	0.5	0.9	1.1	1.3	1.6	1.8	0.00
South: Acceso Sur											
1 L	0.084	0.0	3.4	0.0	3.4	6.4	7.7	8.8	10.8	12.5	0.01
2 T	0.057	0.0	2.0	0.0	2.0	3.8	4.6	5.2	6.5	7.5	0.00
North: Acceso Norte											
1 T	0.538	0.4	33.7	1.7	35.4	63.3	77.5	88.1	109.3	127.0	0.07
2 R	0.058	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00

Values printed in this table are back of queue (feet).

Table D.4 - Movement Speeds (mph) and Geometric Delay

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	App. Speeds Cruise	Negn	Exit Speeds Negn	Cruise	Queue Move-up 1st Grn	2nd Grn	Av. Section Spd Running	Overall	Geom Delay (sec)
West: Acceso Oeste									
5L L	40.0	0.0	13.0	40.0			30.0	29.5	5.0
2R R	40.0	0.0	12.5	40.0			30.0	29.5	5.0
South: Acceso Sur									
3L L	40.0	12.2	12.2	40.0			30.2	30.1	9.0
8T T	40.0	40.0	40.0	40.0			39.8	39.8	0.0
North: Acceso Norte									
4T T	40.0	40.0	40.0	40.0	22.1		36.5	36.5	0.0
4R R	40.0	12.5	12.5	40.0			31.7	31.7	8.9

"Running Speed" is the average speed excluding stopped periods.

Table D.6 - Gap Acceptance Parameters

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Mov Type	Opng Flow (pcu/h)	Critical Gap Hdwy (s)	Dist (ft)	Foll-up Headway (s)	Entry HV Equiv

West: Acceso Oeste						
5L	L	Normal	615+	7.50	359.2	3.50	2.00
2R	R	Normal	435	2.00	117.3	1.00	2.00
South: Acceso Sur						
3L	L	Normal	528	4.10	211.4	2.20	2.00
8T	T	Normal	1	6.50	123.8	4.00	2.00
North: Acceso Norte						
4T	T	Normal	84	6.50	116.4	4.00	2.00

Values in this table are adjusted for heavy vehicles in the entry stream.
+ Percentage of exiting flow included in total opposing flow

SIDRA SOLUTIONS

Site: New Site - 1
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A1460, PLC, Large Office
Produced by SIDRA Intersection 3.2.0.1455
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SIDRA INTERSECTION

Output Tables

Intersección Avenida Laguna y Entrada Edif. Residencial (178 unidades)

Futura (AM)

Run Information

```
* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in US units
  Model Defaults: US HCM (US)
  Peak Flow Period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes.
  Delay definition: Control delay
                    Geometric delay included
  HCM Delay Model option selected
  HCM Queue Model option selected
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile
```

Table B.1 - Movement Definitions and Flow Rates (Origin-Destination)

```
Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection
```

From Approach	To Approach	Mov ID	Turn	Flow Rate LV	Flow Rate HV	Flow Scale	Peak Flow Factor
West: Acceso Oeste							
	South	2R	Right	73	0	1.00	1.00
	North	5L	Left	1	0	1.00	1.00
South: Acceso Sur							
	West	3L	Left	8	0	1.00	1.00
	North	8T	Thru	134	0	1.00	1.00
North: Acceso Norte							
	West	4R	Right	10	0	1.00	1.00
	South	4T	Thru	467	0	1.00	1.00

```
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

FIGURA 53

Table B.2A - Flow Rates (Separate Light and Heavy Vehicles)

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV
Demand flows in veh/hour as used by the program						
West: Acceso Oeste						
5L L	1	0	0	0	0	0
2R R	0	0	0	0	73	0
South: Acceso Sur						
3L L	8	0	0	0	0	0
8T T	0	0	134	0	0	0
North: Acceso Norte						
4T T	0	0	467	0	0	0
4R R	0	0	0	0	10	0

Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor

Table B.2B - Flow Rates (Total Vehicles and Percent Heavy)

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Left Total	Left %HV	Through Total	Through %HV	Right Total	Right %HV
Demand flows in veh/hour as used by the program						
West: Acceso Oeste						
5L L	1	0.0	0	0.0	0	0.0
2R R	0	0.0	0	0.0	73	0.0
South: Acceso Sur						
3L L	8	0.0	0	0.0	0	0.0
8T T	0	0.0	134	0.0	0	0.0
North: Acceso Norte						
4T T	0	0.0	467	0.0	0	0.0
4R R	0	0.0	0	0.0	10	0.0

Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor

Table S.2 - Movement Capacity Parameters

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
West: Acceso Oeste										
5L L	1	0.0	614+	0.0	614	37	0.80	2860	100	0.027
2R R	73	0.0	467	0.0	467	2676	0.80	2833	100	0.027
South: Acceso Sur										
3L L	8	0.0	477	0.0	477	1047	0.80	****	100	0.008
8T T	134	0.0	1	0.0	1	899	0.80	437	100	0.149
North: Acceso Norte										
4T T	467	0.0	9	0.0	9	1759	0.80	201	100	0.265*
4R R	10	0.0	0			38	0.80	204	100	0.263

+ Percentage of exiting flow included in total opposing flow

Table S.3 - Intersection Parameters

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Intersection Level of Service	=	NA
Worst movement Level of Service	=	B
Average intersection delay (s/pers)	=	1.0
Largest average movement delay (s)	=	10.6
Largest back of queue, 95% (ft)	=	39
Performance Index	=	8.45
Degree of saturation (highest)	=	0.265
Practical Spare Capacity (lowest)	=	201 %
Effective intersection capacity, (veh/h)	=	2610
Total vehicle flow (veh/h)	=	693
Total person flow (pers/h)	=	832
Total vehicle delay (veh-h/h)	=	0.19
Total person delay (pers-h/h)	=	0.23
Total effective vehicle stops (veh/h)	=	79
Total effective person stops (pers/h)	=	95
Total vehicle travel (veh-mi/h)	=	262.6
Total cost ($/h)	=	109.14
Total fuel (gal/h)	=	9.1
Total CO2 (kg/h)	=	85.96

NA Not Applicable - Intersection Level of Service is not calculated at two-way stop control or give-way/yield controlled intersections. See Table S.15 or Movement Displays for individual movement LOS values.

Table S.5 - Movement Performance

Mov ID	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% Back (vehs)	Longest Queue 95% Back (ft)	Perf. Index	Aver. Speed (mph)
West: Acceso Oeste									
5L L	0.00	0.00	6.4	0.32	0.96	0.1	4	0.02	29.6
2R R	0.13	0.15	6.4	0.32	0.84	0.1	4	1.20	29.6
South: Acceso Sur									
3L L	0.02	0.03	10.6	0.45	0.65	0.0	1	0.14	30.3
8T T	0.00	0.00	0.0	0.02	0.00	0.7	19	1.51	39.8
North: Acceso Norte									
4T T	0.01	0.01	0.1	0.07	0.01	1.5	39	5.41	39.3
4R R	0.03	0.03	9.0	0.07	0.64	1.5	39	0.17	31.4

Table S.6 - Intersection Performance

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
West: Acceso Oeste									
74	0.027	0.13	0.16	6.4	0.32	0.85	4	1.22	29.6
South: Acceso Sur									
142	0.149	0.02	0.03	0.6	0.04	0.04	19	1.65	39.1
North: Acceso Norte									
477	0.265	0.04	0.04	0.3	0.07	0.02	39	5.59	39.1
ALL VEHICLES:									
693	0.265	0.19	0.23	1.0	0.09	0.11	39	8.45	37.8
INTERSECTION (persons):									
832	0.265		0.23	1.0	0.09	0.11		8.45	37.8

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

Table S.7 - Lane Performance

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue 95% Back (ft)	Lane Length (ft)
West: Acceso Oeste								
1 LR	74	2712	0.027	6.4	0.85	0.1	3.5	1600.0
South: Acceso Sur								
1 L	8	1047	0.008	10.6	0.65	0.0	1.0	1600.0
2 T	134	899	0.149	0.0	0.00	0.7	18.6	1600.0
North: Acceso Norte								
1 T	236	890	0.265	0.1	0.01	1.5	37.6	1600.0
2 TR	241	907	0.265	0.5	0.04	1.5	38.5	1600.0

Table S.8 - Lane Flow and Capacity Information

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
West: Acceso Oeste								
1 LR	1	0	73	74	60	2712	0.027	100
South: Acceso Sur								
1 L	8	0	0	8	8	1047	0.008	100
2 T	0	134	0	134	60	899	0.149	100
North: Acceso Norte								
1 T	0	236	0	236	236	890	0.265	100
2 TR	0	231	10	241	241	907	0.265	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.

Table S.10 - Movement Capacity and Performance Summary

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	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: Acceso Oeste									
5L	L	1	37	100	0.027	6.4	0.96	0.1	0.02
2R	R	73	2676	100	0.027	6.4	0.84	0.1	1.20
South: Acceso Sur									
3L	L	8	1047	100	0.008	10.6	0.65	0.0	0.14
8T	T	134	899	100	0.149	0.0	0.00	0.7	1.51
North: Acceso Norte									
4T	T	467	1759	100	0.265*	0.1	0.01	1.5	5.41
4R	R	10	38	100	0.263	9.0	0.64	1.5	0.17

* Maximum degree of saturation

Table S.12A - Fuel Consumption, Emissions and Cost (TOTAL)

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID		Fuel Total gal/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
West: Acceso Oeste							
5L	L	0.0	0.22	0.000	0.02	0.000	0.2
2R	R	1.4	15.76	0.024	1.22	0.035	13.7
		1.5	15.98	0.025	1.24	0.035	13.9
South: Acceso Sur							
3L	L	0.2	1.68	0.003	0.13	0.004	1.5
8T	T	1.6	19.59	0.020	0.42	0.029	14.9
		1.7	21.27	0.023	0.55	0.033	16.4
North: Acceso Norte							
4T	T	5.7	69.85	0.075	1.81	0.108	53.9
4R	R	0.2	2.04	0.003	0.16	0.005	1.8
		5.9	71.89	0.078	1.97	0.112	55.7
INTERSECTION:		9.1	109.14	0.126	3.76	0.180	86.0

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/US gal)	=	2.400
Fuel resource cost factor	=	0.70
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	19.00
Time value factor	=	0.40
Light vehicle mass (1000 lb)	=	3.1
Heavy vehicle mass (1000 lb)	=	24.0
Light vehicle idle fuel rate (US gal/h)	=	0.360
Heavy vehicle idle fuel rate (US gal/h)	=	0.530

Table S.12B - Fuel Consumption, Emissions and Cost (RATE)

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Fuel Eff. mpg	Cost Rate $/mi	HC Rate g/km	CO Rate g/km	NOX Rate g/km	CO2 Rate g/km
West: Acceso Oeste						
5L L	19.0	0.36	0.551	27.75	0.791	310.3
2R R	19.0	0.36	0.550	27.64	0.789	309.9
	19.0	0.36	0.550	27.64	0.789	309.9
South: Acceso Sur						
3L L	19.5	0.35	0.535	26.75	0.769	301.7
8T T	32.2	0.24	0.248	5.14	0.355	182.4
	31.1	0.25	0.264	6.35	0.378	189.0
North: Acceso Norte						
4T T	31.1	0.24	0.264	6.36	0.378	189.1
4R R	20.0	0.34	0.518	25.83	0.750	294.6
	30.7	0.25	0.269	6.76	0.386	191.3
INTERSECTION:	28.9	0.26	0.298	8.89	0.427	203.4

Table S.14 - Summary of Input and Output Data

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

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 (ft)	Shrt Lane (ft)
West: Acceso Oeste												
1 LR	1		73	74	0				0.027	6.4	4	1600
	1	0	73	74	0				0.027	6.4	4	
South: Acceso Sur												
1 L	8			8	0				0.008	10.6	1	1600
2 T		134		134	0				0.149	0.0	19	1600
	8	134	0	142	0				0.149	0.6	19	
North: Acceso Norte												
1 T		236		236	0				0.265	0.1	38	1600
2 TR		231	10	241	0				0.265	0.5	39	1600

0	467	10	477	0	0.265	0.3	39

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	693	0	0.265	1.0	39

Peak flow period = 15 minutes.

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

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Table S.15 - Capacity and Level of Service

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue 95% Back (vehs)	(ft)
West: Acceso Oeste								
5L	L	1	37	0.027	6.4	A	0.1	4
2R	R	73	2676	0.027	6.4	A	0.1	4
South: Acceso Sur								
3L	L	8	1047	0.008	10.6	B	0.0	1
8T	T	134	899	0.149	0.0	A	0.7	19
North: Acceso Norte								
4T	T	467	1759	0.265*	0.1	A	1.5	39
4R	R	10	38	0.263	9.0	A	1.5	39
ALL VEHICLES:		693		0.265	1.0	NA	1.5	39

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

NA Not Applicable - Intersection Level of Service is not calculated at two-way stop control or give-way/yield controlled intersections.

* Maximum v/c ratio, or critical green periods
" Movement Level of service has been determined using adjacent lane v/c ratio rather than short lane v/c ratio (v/c=1.0)

Table D.0 - Geometric Delay Data

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3

Stop Sign Controlled Intersection

From Approach	To Approach	Turn	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream Distance (ft)	User Spec?
West: Acceso Oeste								
	South	Right	32.8	12.5	51.5	1600	387	No
	North	Left	30.6	12.2	48.1	1600	384	No
South: Acceso Sur								
	West	Left	30.6	12.2	48.1	1600	384	No
	North	Thru	S	40.0	36.0	1600	403	No
North: Acceso Norte								
	West	Right	32.8	12.5	51.5	1600	387	No
	South	Thru	S	40.0	36.0	1600	403	No

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.

Table D.1 - Lane Delays

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Stop-line Delay 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
		Delay (seconds/veh)								
West: Acceso Oeste										
1 LR	0.027	1.3	0.0	1.4	0.7	0.7	0.0	0.7	5.0	6.4
South: Acceso Sur										
1 L	0.008	1.7	0.0	1.7	1.8	0.0	0.0	0.0	9.0	10.6
2 T	0.149	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
North: Acceso Norte										
1 T	0.265	0.1	0.0	0.1	0.6	0.0	0.0	0.0	0.0	0.1
2 TR	0.265	0.1	0.0	0.1	0.6	0.0	0.0	0.0	0.4	0.5

dn is average stop-start delay for all vehicles queued and unqueued

Table D.2 - Lane Stops

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	-- Effective Stop Rate -- he1	he2	Geom. hig	Overall h	Prop. Queued pq	Queue Move-up Rate hqm
West: Acceso Oeste							
1 LR	0.027	0.17	0.00	0.68	0.85	0.319	0.00
South: Acceso Sur							
1 L	0.008	0.27	0.00	0.38	0.65	0.453	0.00
2 T	0.149	0.00	0.00	0.00	0.00	0.016	0.00
North: Acceso Norte							
1 T	0.265	0.01	0.00	0.00	0.01	0.070	0.00
2 TR	0.265	0.01	0.00	0.03	0.04	0.071	0.00

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

Table D.3A - Lane Queues (veh)

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
West: Acceso Oeste											
1 LR	0.027	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.00
South: Acceso Sur											
1 L	0.008	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
2 T	0.149	0.0	0.2	0.0	0.2	0.4	0.5	0.6	0.7	0.9	0.01
North: Acceso Norte											
1 T	0.265	0.0	0.5	0.0	0.5	0.9	1.1	1.2	1.5	1.7	0.02
2 TR	0.265	0.0	0.5	0.0	0.5	0.9	1.1	1.2	1.5	1.8	0.02

Values printed in this table are back of queue (vehicles).

Table D.3B - Lane Queues (feet)

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (feet) Nb1	Nb2	Nb	Percentile (feet) 70%	85%	90%	95%	98%	Queue Stor. Ratio
West: Acceso Oeste											

1 LR	0.027	0.0	1.1	0.0	1.1	2.1	2.5	2.9	3.5	4.1	0.00
South: Acceso Sur											
1 L	0.008	0.0	0.3	0.0	0.3	0.6	0.7	0.8	1.0	1.1	0.00
2 T	0.149	0.0	5.8	0.0	5.8	11.0	13.3	15.1	18.6	21.5	0.01
North: Acceso Norte											
1 T	0.265	0.0	11.9	0.0	11.9	22.1	26.9	30.5	37.6	43.5	0.02
2 TR	0.265	0.0	12.2	0.0	12.2	22.7	27.6	31.2	38.5	44.6	0.02

Values printed in this table are back of queue (feet).

Table D.4 - Movement Speeds (mph) and Geometric Delay

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	App. Speeds Cruise	App. Speeds Negn	Exit Speeds Negn	Exit Speeds Cruise	Queue Move-up 1st Grn	Queue Move-up 2nd Grn	Av. Section Spd Running	Av. Section Spd Overall	Geom Delay (sec)
West: Acceso Oeste									
5L L	40.0	0.0	12.2	40.0			30.1	29.6	5.0
2R R	40.0	0.0	12.5	40.0			30.0	29.6	5.0
South: Acceso Sur									
3L L	40.0	12.2	12.2	40.0			30.3	30.3	9.0
8T T	40.0	40.0	40.0	40.0			39.8	39.8	0.0
North: Acceso Norte									
4T T	40.0	40.0	40.0	40.0			39.3	39.3	0.0
4R R	40.0	12.5	12.5	40.0			31.4	31.4	8.9

"Running Speed" is the average speed excluding stopped periods.

Table D.6 - Gap Acceptance Parameters

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (AM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Mov Type	Opng Flow (pcu/h)	Critical Gap Hdwy (s)	Critical Gap Dist (ft)	Foll-up Headway (s)	Entry HV Equiv
West: Acceso Oeste						
5L L	Normal	614+	7.50	431.2	3.50	2.00
2R R	Normal	467	2.00	117.3	1.00	2.00
South: Acceso Sur						

3L	L	Normal	477	4.10	237.1	2.20	2.00
8T	T	Normal	1	6.50	116.3	4.00	2.00
North: Acceso Norte							
4T	T	Normal	9	6.50	116.3	4.00	2.00

Values in this table are adjusted for heavy vehicles in the entry stream.
+ Percentage of exiting flow included in total opposing flow

SIDRA SOLUTIONS

Site: New Site - 1
I:\Laguna Plaza\Corridas SIDRA\Int. Propuestas\Int Aveniida Laguna y Entrada Edif Res. (178 unidades)\Int. Avenidqa Laguna y Edif. Res.(178 unidades). F (AM) .aap
Processed Jan 16, 2008 03:05:10PM

A1460, PLC, Large Office
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SIDRA INTERSECTION

Output Tables

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)

Futuro (PM)

Run Information

```
* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in US units
  Model Defaults: US HCM (US)
  Peak Flow Period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes.
  Delay definition: Control delay
                    Geometric delay included
  HCM Delay Model option selected
  HCM Queue Model option selected
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile
```

Table B.1 - Movement Definitions and Flow Rates (Origin-Destination)

```
Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

-----------------------------------------------------------------
 From      To          Mov           Flow Rate   Flow   Peak Flow
 Approach  Approach    ID    Turn     LV    HV   Scale    Factor
-----------------------------------------------------------------
 South: Acceso Sur
           East         8R   Right    41     0    1.00     1.00
           North        8T   Thru      1     0    1.00     1.00
-----------------------------------------------------------------
 East: Acceso Este
           North        6R   Right    23     0    1.00     1.00
-----------------------------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table B.2A - Flow Rates (Separate Light and Heavy Vehicles)

FIGURA 54

```
Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

-----------------------------------------------
  Mov          Left        Through        Right
  ID        ---------    ----------    ---------
             LV    HV     LV    HV      LV    HV
-----------------------------------------------
Demand flows in veh/hour as used by the program
South: Acceso Sur
   8T T       0     0      1     0       0     0
   8R R       0     0      0     0      41     0
-----------------------------------------------
East: Acceso Este
   6R R       0     0      0     0      23     0
-----------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table B.2B - Flow Rates (Total Vehicles and Percent Heavy)

```
Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

--------------------------------------------------
  Mov          Left         Through         Right
  ID        ----------    ----------    ----------
           Total  %HV    Total  %HV    Total  %HV
--------------------------------------------------
Demand flows in veh/hour as used by the program
South: Acceso Sur
   8T T        0   0.0       1   0.0       0   0.0
   8R R        0   0.0       0   0.0      41   0.0
--------------------------------------------------
East: Acceso Este
   6R R        0   0.0       0   0.0      23   0.0
--------------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table S.2 - Movement Capacity Parameters

```
Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection
```

Mov ID	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: Acceso Sur										
8T T	1	0.0	0			1900	0.80	****	100	0.001
8R R	41	0.0	0			1615	0.80	3051	100	0.025*
East: Acceso Este										
6R R	23	0.0	1	0.0	1	3598	0.80	****	100	0.006

Table S.3 - Intersection Parameters

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

Intersection Level of Service	=	NA
Worst movement Level of Service	=	A
Average intersection delay (s/pers)	=	7.8
Largest average movement delay (s)	=	8.9
Largest back of queue, 95% (ft)	=	1
Performance Index	=	1.05
Degree of saturation (highest)	=	0.025
Practical Spare Capacity (lowest)	=	3051 %
Effective intersection capacity, (veh/h)	=	2560
Total vehicle flow (veh/h)	=	65
Total person flow (pers/h)	=	78
Total vehicle delay (veh-h/h)	=	0.14
Total person delay (pers-h/h)	=	0.17
Total effective vehicle stops (veh/h)	=	51
Total effective person stops (pers/h)	=	61
Total vehicle travel (veh-mi/h)	=	24.5
Total cost ($/h)	=	13.45
Total fuel (gal/h)	=	1.2
Total CO2 (kg/h)	=	11.72

NA Not Applicable - Intersection Level of Service is not calculated at two-way stop control or give-way/yield controlled intersections. See Table S.15 or Movement Displays for individual movement LOS values.

Table S.5 - Movement Performance

Mov ID	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% (vehs)	Back (ft)	Perf. Index	Aver. Speed (mph)
South: Acceso Sur									
8T T	0.00	0.00	0.0	0.00	0.00	0.0	0	0.01	40.0
8R R	0.10	0.12	8.9	0.00	0.69	0.0	0	0.64	31.7
East: Acceso Este									
6R R	0.04	0.05	6.0	0.01	0.99	0.0	1	0.39	29.4

Table S.6 - Intersection Performance

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
South: Acceso Sur									
42	0.025	0.10	0.12	8.7	0.00	0.67	0	0.65	31.8
East: Acceso Este									
23	0.006	0.04	0.05	6.0	0.01	0.99	1	0.39	29.4
ALL VEHICLES:									
65	0.025	0.14	0.17	7.8	0.00	0.78	1	1.05	30.9
INTERSECTION (persons):									
78	0.025		0.17	7.8	0.00	0.78		1.05	30.9

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

Table S.7 - Lane Performance

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue 95% Back (ft)	Lane Length (ft)
South: Acceso Sur								
1 T	1	1900	0.001	0.0	0.00	0.0	0.0	1600.0
2 R	41	1615	0.025	8.9	0.69	0.0	0.0	1600.0
East: Acceso Este								
1 R	23	3598	0.006	6.0	0.99	0.0	1.1	1600.0

Table S.8 - Lane Flow and Capacity Information

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: Acceso Sur								
1 T	0	1	0	1	0	1900	0.001	100
2 R	0	0	41	41	41	1615	0.025	100
East: Acceso Este								
1 R	0	0	23	23	23	3598	0.006	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.

Table S.10 - Movement Capacity and Performance Summary

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

Mov ID	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: Acceso Sur									
8T	T	1	1900	100	0.001	0.0	0.00	0.0	0.01
8R	R	41	1615	100	0.025*	8.9	0.69	0.0	0.64
East: Acceso Este									
6R	R	23	3598	100	0.006	6.0	0.99	0.0	0.39

* Maximum degree of saturation

Table S.12A - Fuel Consumption, Emissions and Cost (TOTAL)

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

Mov ID	Fuel Total gal/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
South: Acceso Sur						

8T T	0.0	0.15	0.000	0.00	0.000	0.1
8R R	0.8	8.32	0.013	0.64	0.019	7.3
	0.8	8.47	0.013	0.64	0.019	7.4
East: Acceso Este						
6R R	0.5	4.99	0.008	0.39	0.011	4.3
	0.5	4.99	0.008	0.39	0.011	4.3
INTERSECTION:	1.2	13.45	0.021	1.03	0.030	11.7

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/US gal)	=	2.400
Fuel resource cost factor	=	0.70
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	19.00
Time value factor	=	0.40
Light vehicle mass (1000 lb)	=	3.1
Heavy vehicle mass (1000 lb)	=	24.0
Light vehicle idle fuel rate (US gal/h)	=	0.360
Heavy vehicle idle fuel rate (US gal/h)	=	0.530

Table S.12B - Fuel Consumption, Emissions and Cost (RATE)

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

Mov ID	Fuel Eff. mpg	Cost Rate $/mi	HC Rate g/km	CO Rate g/km	NOX Rate g/km	CO2 Rate g/km
South: Acceso Sur						
8T T	32.6	0.24	0.243	4.77	0.347	180.3
8R R	20.0	0.34	0.515	25.68	0.747	293.5
	20.2	0.33	0.508	25.18	0.737	290.8
East: Acceso Este						
6R R	18.9	0.36	0.551	27.65	0.790	310.3
	18.9	0.36	0.551	27.65	0.790	310.3
INTERSECTION:	19.8	0.34	0.523	26.05	0.756	297.7

Table S.14 - Summary of Input and Output Data

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

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 (ft)	Shrt Lane (ft)
South: Acceso Sur												
1 T		1		1	0				0.001	0.0	0	1600
2 R			41	41	0				0.025	8.9	0	1600
	0	1	41	42	0				0.025	8.7		
East: Acceso Este												
1 R			23	23	0				0.006	6.0	1	1600
	0	0	23	23	0				0.006	6.0	1	
ALL VEHICLES				Total Flow 65	% HV 0				Max X 0.025	Aver. Delay 7.8	Max Queue 1	

Peak flow period = 15 minutes.

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

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Table S.15 - Capacity and Level of Service

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

Mov ID	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue 95% Back (vehs)	(ft)
South: Acceso Sur								
8T	T	1	1900	0.001	0.0	A	0.0	0
8R	R	41	1615	0.025*	8.9	A	0.0	0
East: Acceso Este								
6R	R	23	3598	0.006	6.0	A	0.0	1
ALL VEHICLES:		65		0.025	7.8	NA	0.0	1

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

NA Not Applicable - Intersection Level of Service is not calculated at two-way stop control or give-way/yield controlled intersections.

* Maximum v/c ratio, or critical green periods
" Movement Level of service has been determined using adjacent lane v/c ratio rather than short lane v/c ratio (v/c=1.0)

Table D.0 - Geometric Delay Data

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

From Approach	To Approach	Turn	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream (ft)	Distance User Spec?
South: Acceso Sur								
	East	Right	32.8	12.5	51.5	1600	387	No
	North	Thru	S	40.0	36.0	1600	403	No
East: Acceso Este								
	North	Right	32.8	12.5	51.5	1600	387	No

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.

Table D.1 - Lane Delays

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Stop-line Delay 1st d1	2nd d2	Total dSL	Delay (seconds/veh) Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: Acceso Sur										
1 T	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 R	0.025	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.9	8.9
East: Acceso Este										
1 R	0.006	1.0	0.0	1.0	0.0	1.0	0.0	1.0	5.0	6.0

dn is average stop-start delay for all vehicles queued and unqueued

Table D.2 - Lane Stops

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	-- Effective Stop Rate -- he1	he2	Geom. hig	Overall h	Prop. Queued pq	Queue Move-up Rate hqm
South: Acceso Sur							
1 T	0.001	0.00	0.00	0.00	0.00	0.000	0.00
2 R	0.025	0.00	0.00	0.69	0.69	0.000	0.00
East: Acceso Este							
1 R	0.006	0.00	0.00	0.99	0.99	0.010	0.00

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

Table D.3A - Lane Queues (veh)

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: Acceso Sur											
1 T	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
2 R	0.025	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
East: Acceso Este											
1 R	0.006	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00

Values printed in this table are back of queue (vehicles).

Table D.3B - Lane Queues (feet)

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (feet) Nb1	Nb2	Nb	Percentile (feet) 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: Acceso Sur											
1 T	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
2 R	0.025	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
East: Acceso Este											
1 R	0.006	0.0	0.3	0.0	0.3	0.6	0.8	0.9	1.1	1.2	0.00

Values printed in this table are back of queue (feet).

Table D.4 - Movement Speeds (mph) and Geometric Delay

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

Mov ID	App. Speeds Cruise	App. Speeds Negn	Exit Speeds Negn	Exit Speeds Cruise	Queue Move-up 1st Grn	Queue Move-up 2nd Grn	Av. Section Spd Running	Av. Section Spd Overall	Geom Delay (sec)
South: Acceso Sur									
8T T	40.0	40.0	40.0	40.0			40.0	40.0	0.0
8R R	40.0	12.5	12.5	40.0			31.7	31.7	8.9
East: Acceso Este									
6R R	40.0	0.0	12.5	40.0			30.0	29.4	5.0

"Running Speed" is the average speed excluding stopped periods.

Table D.6 - Gap Acceptance Parameters

Int. Ave Laguna y Entrada Edificio Residencial (103 Apt)
Futuro (PM)
Intersection ID: 1
Stop Sign Controlled Intersection

Mov ID	Mov Type	Opng Flow (pcu/h)	Critical Gap Hdwy (s)	Critical Gap Dist (ft)	Foll-up Headway (s)	Entry HV Equiv
South: Acceso Sur						
No opposed movements on this approach						
East: Acceso Este						
6R R	Normal	1	2.00	117.3	1.00	2.00

Values in this table are adjusted for heavy vehicles in the entry stream.

SIDRA SOLUTIONS

Site: New Site - 1
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SIDRA INTERSECTION

Output Tables

Int. Avenida Laguna y Entrada Hotel

Futura (PM)

Run Information

```
* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in US units
  Model Defaults: US HCM (US)
  Peak Flow Period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes.
  Delay definition: Control delay
                    Geometric delay included
  HCM Delay Model option selected
  HCM Queue Model option selected
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile
```

Table B.1 - Movement Definitions and Flow Rates (Origin-Destination)

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

From Approach	To Approach	Mov ID	Turn	Flow Rate LV	Flow Rate HV	Flow Scale	Peak Flow Factor
West: Acceso Oeste							
	South	2R	Right	52	0	1.00	1.00
	East	2T	Thru	1025	0	1.00	1.00
South: Acceso Sur							
	East	8R	Right	90	0	1.00	1.00
East: Acceso Este							
	South	1L	Left	47	0	1.00	1.00

Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor

FIGURA 55

Table B.2A - Flow Rates (Separate Light and Heavy Vehicles)

```
Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

-----------------------------------------------
  Mov          Left        Through        Right
  ID        ---------    ---------     ---------
             LV    HV     LV    HV      LV    HV
-----------------------------------------------
Demand flows in veh/hour as used by the program
West: Acceso Oeste
   2T T       0     0   1025     0       0     0
   2R R       0     0      0     0      52     0
-----------------------------------------------
South: Acceso Sur
   8R R       0     0      0     0      90     0
-----------------------------------------------
East: Acceso Este
   1L L      47     0      0     0       0     0
-----------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table B.2B - Flow Rates (Total Vehicles and Percent Heavy)

```
Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

--------------------------------------------------
  Mov          Left         Through         Right
  ID        ----------    ----------     ----------
            Total  %HV    Total  %HV     Total  %HV
--------------------------------------------------
Demand flows in veh/hour as used by the program
West: Acceso Oeste
   2T T        0   0.0    1025   0.0        0   0.0
   2R R        0   0.0       0   0.0       52   0.0
--------------------------------------------------
South: Acceso Sur
   8R R        0   0.0       0   0.0       90   0.0
--------------------------------------------------
East: Acceso Este
   1L L       47   0.0       0   0.0        0   0.0
--------------------------------------------------
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

Table S.2 - Movement Capacity Parameters

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

Mov ID	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
West: Acceso Oeste										
2T T	1025	0.0	47	0.0	47	1675	0.80	31	100	0.612*
2R R	52	0.0	47	0.0	47	85	0.80	31	100	0.612*
South: Acceso Sur										
8R R	90	0.0	1025	0.0	1025	2341	0.80	1981	100	0.038
East: Acceso Este										
1L L	47	0.0	1077	0.0	1077	501	0.80	753	100	0.094

Table S.3 - Intersection Parameters

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

Intersection Level of Service	=	NA
Worst movement Level of Service	=	C
Average intersection delay (s/pers)	=	2.2
Largest average movement delay (s)	=	15.5
Largest back of queue, 95% (ft)	=	142
Performance Index	=	17.51
Degree of saturation (highest)	=	0.612
Practical Spare Capacity (lowest)	=	31 %
Effective intersection capacity, (veh/h)	=	1984
Total vehicle flow (veh/h)	=	1214
Total person flow (pers/h)	=	1457
Total vehicle delay (veh-h/h)	=	0.74
Total person delay (pers-h/h)	=	0.89
Total effective vehicle stops (veh/h)	=	247
Total effective person stops (pers/h)	=	297
Total vehicle travel (veh-mi/h)	=	460.0
Total cost ($/h)	=	209.53
Total fuel (gal/h)	=	18.2
Total CO2 (kg/h)	=	172.03

NA Not Applicable - Intersection Level of Service is not calculated at two-way stop control or give-way/yield controlled intersections. See Table S.15 or Movement Displays for individual movement LOS values.

Table S.5 - Movement Performance

Mov ID	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% Back (vehs)	Longest Queue 95% Back (ft)	Perf. Index	Aver. Speed (mph)
West: Acceso Oeste									
2T T	0.24	0.28	0.8	0.31	0.09	5.7	142	14.02	37.0
2R R	0.14	0.17	9.7	0.30	0.56	5.7	142	0.96	30.8
South: Acceso Sur									
8R R	0.16	0.20	6.6	0.43	0.89	0.2	4	1.51	29.6
East: Acceso Este									
1L L	0.20	0.24	15.5	0.71	0.91	0.4	11	1.02	27.4

Table S.6 - Intersection Performance

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
West: Acceso Oeste									
1077	0.612	0.38	0.45	1.3	0.31	0.12	142	14.98	36.7
South: Acceso Sur									
90	0.038	0.16	0.20	6.6	0.43	0.89	4	1.51	29.6
East: Acceso Este									
47	0.094	0.20	0.24	15.5	0.71	0.91	11	1.02	27.4
ALL VEHICLES:									
1214	0.612	0.74	0.89	2.2	0.33	0.20	142	17.51	35.6
INTERSECTION (persons):									
1457	0.612		0.89	2.2	0.33	0.20		17.51	35.6

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

Table S.7 - Lane Performance

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue 95% Back (ft)	Lane Length (ft)
West: Acceso Oeste								

1 T	519	848	0.612	0.9	0.10	5.6	141.1	1600.0
2 TR	558	912	0.612	1.6	0.13	5.7	141.5	1600.0
South: Acceso Sur								
1 R	90	2341	0.038	6.6	0.89	0.2	4.3	1600.0
East: Acceso Este								
1 L	47	501	0.094	15.5	0.91	0.4	10.8	1600.0

Table S.8 - Lane Flow and Capacity Information

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
West: Acceso Oeste								
1 T	0	519	0	519	60	848	0.612	100
2 TR	0	506	52	558	60	912	0.612	100
South: Acceso Sur								
1 R	0	0	90	90	60	2341	0.038	100
East: Acceso Este								
1 L	47	0	0	47	47	501	0.094	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.

Table S.10 - Movement Capacity and Performance Summary

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

Mov ID	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: Acceso Oeste									
2T	T	1025	1675	100	0.612*	0.8	0.09	5.7	14.02
2R	R	52	85	100	0.612*	9.7	0.56	5.7	0.96
South: Acceso Sur									
8R	R	90	2341	100	0.038	6.6	0.89	0.2	1.51
East: Acceso Este									

1L L	47	501	100	0.094	15.5	0.91	0.4	1.02

* Maximum degree of saturation

Table S.12A - Fuel Consumption, Emissions and Cost (TOTAL)

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

Mov ID	Fuel Total gal/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
West: Acceso Oeste						
2T T	14.5	168.71	0.209	7.34	0.302	136.9
2R R	1.0	10.80	0.017	0.83	0.024	9.4
	15.5	179.51	0.225	8.17	0.326	146.3
South: Acceso Sur						
8R R	1.8	19.43	0.030	1.51	0.043	16.9
	1.8	19.43	0.030	1.51	0.043	16.9
East: Acceso Este						
1L L	0.9	10.58	0.016	0.78	0.022	8.9
	0.9	10.58	0.016	0.78	0.022	8.9
INTERSECTION:	18.2	209.53	0.271	10.46	0.391	172.0

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/US gal)	=	2.400
Fuel resource cost factor	=	0.70
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	19.00
Time value factor	=	0.40
Light vehicle mass (1000 lb)	=	3.1
Heavy vehicle mass (1000 lb)	=	24.0
Light vehicle idle fuel rate (US gal/h)	=	0.360
Heavy vehicle idle fuel rate (US gal/h)	=	0.530

Table S.12B - Fuel Consumption, Emissions and Cost (RATE)

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

Mov	Fuel	Cost	HC	CO	NOX	CO2

ID	Eff. mpg	Rate $/mi	Rate g/km	Rate g/km	Rate g/km	Rate g/km
West: Acceso Oeste						
2T T	26.9	0.27	0.334	11.74	0.483	218.7
2R R	19.7	0.34	0.527	26.29	0.760	298.4
	26.4	0.27	0.343	12.43	0.496	222.5
South: Acceso Sur						
8R R	19.0	0.36	0.550	27.64	0.789	309.9
	19.0	0.36	0.550	27.64	0.789	309.9
East: Acceso Este						
1L L	18.9	0.37	0.558	27.33	0.784	311.5
	18.9	0.37	0.558	27.33	0.784	311.5
INTERSECTION:	25.3	0.28	0.366	14.12	0.528	232.4

Table S.14 - Summary of Input and Output Data

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

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 (ft)	Shrt Lane (ft)
West: Acceso Oeste												
1 T		519		519	0				0.612	0.9	141	1600
2 TR		506	52	558	0				0.612	1.6	142	1600
	0	1025	52	1077	0				0.612	1.3	142	
South: Acceso Sur												
1 R			90	90	0				0.038	6.6	4	1600
	0	0	90	90	0				0.038	6.6	4	
East: Acceso Este												
1 L	47			47	0				0.094	15.5	11	1600
	47	0	0	47	0				0.094	15.5	11	
ALL VEHICLES				Total Flow 1214	% HV 0				Max X 0.612	Aver. Delay 2.2	Max Queue 142	

Peak flow period = 15 minutes.

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

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Table S.15 - Capacity and Level of Service

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

Mov ID	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue 95% Back (vehs)	(ft)
West: Acceso Oeste								
2T	T	1025	1675	0.612*	0.8	A	5.7	142
2R	R	52	85	0.612*	9.7	A	5.7	142
South: Acceso Sur								
8R	R	90	2341	0.038	6.6	A	0.2	4
East: Acceso Este								
1L	L	47	501	0.094	15.5	C	0.4	11
ALL VEHICLES:		1214		0.612	2.2	NA	5.7	142

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

NA Not Applicable - Intersection Level of Service is not calculated at
two-way stop control or give-way/yield controlled intersections.

* Maximum v/c ratio, or critical green periods

Table D.0 - Geometric Delay Data

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

From Approach	To Approach	Turn	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream Distance (ft)	User Spec?
West: Acceso Oeste								
	South	Right	32.8	12.5	51.5	1600	387	No
	East	Thru	S	40.0	36.0	1600	403	No
South: Acceso Sur								
	East	Right	32.8	12.5	51.5	1600	387	No
East: Acceso Este								
	South	Left	30.6	12.2	48.1	1600	384	No

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.

Table D.1 - Lane Delays

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Stop-line Delay 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
		---------- Delay (seconds/veh) ----------								
West: Acceso Oeste										
1 T	0.612	0.9	0.0	0.9	2.8	0.0	0.0	0.0	0.0	0.9
2 TR	0.612	0.8	0.0	0.8	2.6	0.0	0.0	0.0	0.8	1.6
South: Acceso Sur										
1 R	0.038	1.5	0.1	1.6	0.9	0.7	0.0	0.7	5.0	6.6
East: Acceso Este										
1 L	0.094	6.5	0.0	6.5	2.9	3.7	0.0	3.7	9.0	15.5

dn is average stop-start delay for all vehicles queued and unqueued

Table D.2 - Lane Stops

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	-- Effective Stop Rate -- he1	he2	Geom. hig	Overall h	Prop. Queued pq	Queue Move-up Rate hqm
West: Acceso Oeste							
1 T	0.612	0.10	0.00	0.00	0.10	0.315	0.00
2 TR	0.612	0.09	0.00	0.04	0.13	0.304	0.00
South: Acceso Sur							
1 R	0.038	0.32	0.00	0.57	0.89	0.429	0.00
East: Acceso Este							
1 L	0.094	0.71	0.00	0.20	0.91	0.714	0.00

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

Table D.3A - Lane Queues (veh)

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
West: Acceso Oeste											
1 T	0.612	0.0	1.8	0.0	1.8	3.2	4.0	4.5	5.6	6.6	0.09
2 TR	0.612	0.0	1.9	0.0	1.9	3.3	4.0	4.5	5.7	6.6	0.09
South: Acceso Sur											
1 R	0.038	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.00
East: Acceso Este											
1 L	0.094	0.0	0.1	0.0	0.1	0.3	0.3	0.4	0.4	0.5	0.01

Values printed in this table are back of queue (vehicles).

Table D.3B - Lane Queues (feet)

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (feet) Nb1	Nb2	Nb	Percentile (feet) 70%	85%	90%	95%	98%	Queue Stor. Ratio
West: Acceso Oeste											
1 T	0.612	0.0	46.2	0.0	46.2	81.0	99.5	113.4	141.1	164.1	0.09
2 TR	0.612	0.0	46.3	0.0	46.3	81.3	99.8	113.7	141.5	164.7	0.09
South: Acceso Sur											
1 R	0.038	0.0	1.4	0.0	1.4	2.6	3.1	3.5	4.3	5.0	0.00
East: Acceso Este											
1 L	0.094	0.0	3.4	0.0	3.4	6.4	7.8	8.8	10.8	12.5	0.01

Values printed in this table are back of queue (feet).

Table D.4 - Movement Speeds (mph) and Geometric Delay

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

Mov ID	App. Speeds Cruise	App. Speeds Negn	Exit Speeds Negn	Exit Speeds Cruise	Queue Move-up 1st Grn	Queue Move-up 2nd Grn	Av. Section Spd Running	Av. Section Spd Overall	Geom Delay (sec)
West: Acceso Oeste									
2T T	40.0	40.0	40.0	40.0			37.0	37.0	0.0
2R R	40.0	12.5	12.5	40.0			30.8	30.8	8.9
South: Acceso Sur									
8R R	40.0	0.0	12.5	40.0			30.0	29.6	5.0
East: Acceso Este									
1L L	40.0	12.2	12.2	40.0			29.6	27.4	9.0

"Running Speed" is the average speed excluding stopped periods.

Table D.6 - Gap Acceptance Parameters

Int. Avenida Laguna y Entrada Hotel
Futura (PM)
Intersection ID: 2
Stop Sign Controlled Intersection

Mov ID	Mov Type	Opng Flow (pcu/h)	Critical Gap Hdwy (s)	Critical Gap Dist (ft)	Foll-up Headway (s)	Entry HV Equiv
West: Acceso Oeste						
2T T	Normal	47	6.50	116.3	4.00	2.00
2R R	Normal	47	2.00	35.8	1.00	2.00
South: Acceso Sur						
8R R	Normal	1025	2.00	117.3	1.00	2.00
East: Acceso Este						
1L L	Normal	1077	4.10	232.6	2.20	2.00

Values in this table are adjusted for heavy vehicles in the entry stream.

SIDRA SOLUTIONS

Site: New Site - 1
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Processed Jan 16, 2008 04:32:03PM

A1460, PLC, Large Office
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SIDRA INTERSECTION

Output Tables

Intersección Avenida Laguna y Entrada Comercio y Oficinas

Futura (PM)

Run Information

```
* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in US units
  Model Defaults: US HCM (US)
  Peak Flow Period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes.
  Delay definition: Control delay
                    Geometric delay included
  HCM Delay Model option selected
  HCM Queue Model option selected
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile
```

Table B.1 - Movement Definitions and Flow Rates (Origin-Destination)

```
Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection
```

From Approach	To Approach	Mov ID	Turn	Flow Rate LV	Flow Rate HV	Flow Scale	Peak Flow Factor
West: Acceso Oeste							
	South	2R	Right	167	0	1.00	1.00
	North	5L	Left	1	0	1.00	1.00
South: Acceso Sur							
	West	3L	Left	23	0	1.00	1.00
	North	8T	Thru	47	0	1.00	1.00
North: Acceso Norte							
	West	4R	Right	26	0	1.00	1.00
	South	4T	Thru	1115	0	1.00	1.00

```
Unit Time for Volumes =  60 minutes
Peak Flow Period =  15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor
```

FIGURA 56

Table B.2A - Flow Rates (Separate Light and Heavy Vehicles)

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV
Demand flows in veh/hour as used by the program						
West: Acceso Oeste						
5L L	1	0	0	0	0	0
2R R	0	0	0	0	167	0
South: Acceso Sur						
3L L	23	0	0	0	0	0
8T T	0	0	47	0	0	0
North: Acceso Norte						
4T T	0	0	1115	0	0	0
4R R	0	0	0	0	26	0

Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor

Table B.2B - Flow Rates (Total Vehicles and Percent Heavy)

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Left Total	Left %HV	Through Total	Through %HV	Right Total	Right %HV
Demand flows in veh/hour as used by the program						
West: Acceso Oeste						
5L L	1	0.0	0	0.0	0	0.0
2R R	0	0.0	0	0.0	167	0.0
South: Acceso Sur						
3L L	23	0.0	0	0.0	0	0.0
8T T	0	0.0	47	0.0	0	0.0
North: Acceso Norte						
4T T	0	0.0	1115	0.0	0	0.0
4R R	0	0.0	0	0.0	26	0.0

Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor

Table S.2 - Movement Capacity Parameters

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
West: Acceso Oeste										
5L L	1	0.0	1198+	0.0	1198	12	0.80	860	100	0.083
2R R	167	0.0	1115	0.0	1115	2060	0.80	887	100	0.081
South: Acceso Sur										
3L L	23	0.0	1141	0.0	1141	448	0.80	1458	100	0.051
8T T	47	0.0	1	0.0	1	915	0.80	1457	100	0.051
North: Acceso Norte										
4T T	1115	0.0	24	0.0	24	1725	0.80	24	100	0.646
4R R	26	0.0	0			40	0.80	23	100	0.650*

+ Percentage of exiting flow included in total opposing flow

Table S.3 - Intersection Parameters

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Intersection Level of Service	=	NA
Worst movement Level of Service	=	C
Average intersection delay (s/pers)	=	1.7
Largest average movement delay (s)	=	15.8
Largest back of queue, 95% (ft)	=	176
Performance Index	=	19.88
Degree of saturation (highest)	=	0.650
Practical Spare Capacity (lowest)	=	23 %
Effective intersection capacity, (veh/h)	=	2122
Total vehicle flow (veh/h)	=	1379
Total person flow (pers/h)	=	1655
Total vehicle delay (veh-h/h)	=	0.65
Total person delay (pers-h/h)	=	0.78
Total effective vehicle stops (veh/h)	=	247
Total effective person stops (pers/h)	=	296
Total vehicle travel (veh-mi/h)	=	522.5
Total cost ($/h)	=	232.58
Total fuel (gal/h)	=	20.0
Total CO2 (kg/h)	=	188.92

NA Not Applicable - Intersection Level of Service is not calculated at two-way stop control or give-way/yield controlled intersections. See Table S.15 or Movement Displays for individual movement LOS values.

Table S.5 - Movement Performance

Mov ID		Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% Back (vehs)	Longest Queue 95% Back (ft)	Perf. Index	Aver. Speed (mph)
West: Acceso Oeste										
5L	L	0.00	0.00	6.9	0.47	1.00	0.4	9	0.02	29.4
2R	R	0.32	0.38	6.9	0.47	0.92	0.4	9	2.85	29.5
South: Acceso Sur										
3L	L	0.10	0.12	15.8	0.06	0.71	0.2	6	0.48	27.2
8T	T	0.00	0.00	0.1	0.02	0.00	0.2	6	0.52	39.7
North: Acceso Norte										
4T	T	0.15	0.19	0.5	0.24	0.06	7.1	176	15.51	37.6
4R	R	0.07	0.08	9.4	0.25	0.52	7.1	176	0.49	30.9

Table S.6 - Intersection Performance

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
West: Acceso Oeste									
168	0.083	0.32	0.39	6.9	0.47	0.92	9	2.87	29.5
South: Acceso Sur									
70	0.051	0.10	0.12	5.3	0.03	0.23	6	1.00	34.5
North: Acceso Norte									
1141	0.650	0.22	0.27	0.7	0.24	0.07	176	16.01	37.5
ALL VEHICLES:									
1379	0.650	0.65	0.78	1.7	0.26	0.18	176	19.88	36.1
INTERSECTION (persons):									
1655	0.650		0.78	1.7	0.26	0.18		19.88	36.1

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

Table S.7 - Lane Performance

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue 95% Back (ft)	Lane Length (ft)
West: Acceso Oeste								
1 LR	168	2072	0.081	6.9	0.92	0.4	9.0	1600.0
South: Acceso Sur								
1 LT	24	465	0.051	15.5	0.69	0.2	5.8	1600.0
2 T	46	899	0.051	0.0	0.00	0.2	5.8	1600.0
North: Acceso Norte								
1 T	565	873	0.647	0.5	0.06	6.7	167.2	1600.0
2 TR	576	892	0.647	0.9	0.08	7.1	176.3	1600.0

Table S.8 - Lane Flow and Capacity Information

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
West: Acceso Oeste								
1 LR	1	0	167	168	60	2072	0.081	100
South: Acceso Sur								
1 LT	23	1	0	24	24	465	0.051	100
2 T	0	46	0	46	46	899	0.051	100
North: Acceso Norte								
1 T	0	565	0	565	565	873	0.647	100
2 TR	0	550	26	576	576	892	0.647	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.

Table S.10 - Movement Capacity and Performance Summary

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	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: Acceso Oeste									
5L	L	1	12	100	0.083	6.9	1.00	0.4	0.02
2R	R	167	2060	100	0.081	6.9	0.92	0.4	2.85
South: Acceso Sur									
3L	L	23	448	100	0.051	15.8	0.71	0.2	0.48
8T	T	47	915	100	0.051	0.1	0.00	0.2	0.52
North: Acceso Norte									
4T	T	1115	1725	100	0.646	0.5	0.06	7.1	15.51
4R	R	26	40	100	0.650*	9.4	0.52	7.1	0.49

* Maximum degree of saturation

Table S.12A - Fuel Consumption, Emissions and Cost (TOTAL)

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID		Fuel Total gal/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
West: Acceso Oeste							
5L	L	0.0	0.22	0.000	0.02	0.000	0.2
2R	R	3.3	36.16	0.056	2.80	0.080	31.4
		3.3	36.38	0.056	2.81	0.080	31.6
South: Acceso Sur							
3L	L	0.4	5.16	0.008	0.36	0.011	4.3
8T	T	0.6	6.88	0.007	0.15	0.010	5.2
		1.0	12.04	0.015	0.51	0.021	9.5
North: Acceso Norte							
4T	T	15.1	178.78	0.214	6.95	0.308	143.2
4R	R	0.5	5.38	0.008	0.41	0.012	4.7
		15.6	184.15	0.222	7.36	0.320	147.9
INTERSECTION:		20.0	232.58	0.293	10.69	0.421	188.9

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/US gal)	=	2.400
Fuel resource cost factor	=	0.70
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	19.00
Time value factor	=	0.40
Light vehicle mass (1000 lb)	=	3.1
Heavy vehicle mass (1000 lb)	=	24.0
Light vehicle idle fuel rate (US gal/h)	=	0.360
Heavy vehicle idle fuel rate (US gal/h)	=	0.530

Table S.12B - Fuel Consumption, Emissions and Cost (RATE)

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Fuel Eff. mpg	Cost Rate $/mi	HC Rate g/km	CO Rate g/km	NOX Rate g/km	CO2 Rate g/km
West: Acceso Oeste						
5L L	19.0	0.36	0.548	27.49	0.787	309.6
2R R	19.C	0.36	0.550	27.64	0.789	310.2
	19.0	0.36	0.550	27.64	0.789	310.2
South: Acceso Sur						
3L L	19.2	0.37	0.545	26.17	0.759	306.0
8T T	32.2	0.24	0.248	5.13	0.354	182.5
	26.4	0.28	0.345	12.00	0.487	222.8
North: Acceso Norte						
4T T	28.0	0.26	0.314	10.21	0.453	210.3
4R R	19.8	0.34	0.524	26.17	0.758	297.5
	27.7	0.26	0.319	10.57	0.460	212.3
INTERSECTION:	26.2	0.28	0.348	12.71	0.501	224.7

Table S.14 - Summary of Input and Output Data

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

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 (ft)	Shrt Lane (ft)
West: Acceso Oeste												
1 LR	1		167	168	0				0.081	6.9	9	1600
	1	0	167	168	0				0.081	6.9	9	
South: Acceso Sur												
1 LT	23	1		24	0				0.051	15.5	6	1600
2 T		46		46	0				0.051	0.0	6	1600
	23	47	0	70	0				0.051	5.3	6	
North: Acceso Norte												
1 T		565		565	0				0.647	0.5	167	1600
2 TR		550	26	576	0				0.647	0.9	176	1600

0	1115	26	1141	0		0.647	0.7	176

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	1379	0	0.650	1.7	176

Peak flow period = 15 minutes.

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

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Table S.15 - Capacity and Level of Service

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue 95% Back (vehs)	(ft)
West: Acceso Oeste								
5L	L	1	12	0.083	6.9	A	0.4	9
2R	R	167	2060	0.081	6.9	A	0.4	9
South: Acceso Sur								
3L	L	23	448	0.051	15.8	C	0.2	6
8T	T	47	915	0.051	0.1	A	0.2	6
North: Acceso Norte								
4T	T	1115	1725	0.646	0.5	A	7.1	176
4R	R	26	40	0.650*	9.4	A	7.1	176
ALL VEHICLES:		1379		0.650	1.7	NA	7.1	176

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

NA Not Applicable - Intersection Level of Service is not calculated at two-way stop control or give-way/yield controlled intersections.

* Maximum v/c ratio, or critical green periods
" Movement Level of service has been determined using adjacent lane v/c ratio rather than short lane v/c ratio (v/c=1.0)

Table D.0 - Geometric Delay Data

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3

Stop Sign Controlled Intersection

From Approach	To Approach	Turn	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream Distance (ft)	Distance User Spec?
West: Acceso Oeste								
	South	Right	32.8	12.5	51.5	1600	387	No
	North	Left	36.0	13.0	56.5	1600	390	No
South: Acceso Sur								
	West	Left	30.6	12.2	48.1	1600	384	No
	North	Thru	S	40.0	48.0	1600	403	No
North: Accesc Norte								
	West	Right	32.8	12.5	51.5	1600	387	No
	South	Thru	S	40.0	48.0	1600	403	No

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.

Table D.1 - Lane Delays

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Stop-line Delay 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
		---------- Delay (seconds/veh) ----------								
West: Acceso Oeste										
1 LR	0.081	1.7	0.2	1.9	1.0	0.9	0.0	0.9	5.0	6.9
South: Acceso Sur										
1 LT	0.051	6.9	0.0	6.9	0.3	6.6	0.0	6.6	8.6	15.5
2 T	0.051	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
North: Acceso Norte										
1 T	0.647	0.5	0.0	0.5	2.1	0.0	0.0	0.0	0.0	0.5
2 TR	0.647	0.5	0.0	0.5	2.1	0.0	0.0	0.0	0.4	0.9

dn is average stop-start delay for all vehicles queued and unqueued

Table D.2 - Lane Stops

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	-- Effective Stop Rate -- he1	he2	Geom. hig	Overall h	Prop. Queued pq	Queue Move-up Rate hqm
West: Acceso Oeste							
1 LR	0.081	0.39	0.00	0.53	0.92	0.470	0.00
South: Acceso Sur							
1 LT	0.051	0.06	0.00	0.62	0.69	0.064	0.00
2 T	0.051	0.00	0.00	0.00	0.00	0.015	0.00
North: Acceso Norte							
1 T	0.647	0.06	0.00	0.00	0.06	0.237	0.00
2 TR	0.647	0.05	0.00	0.02	0.08	0.246	0.00

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

Table D.3A - Lane Queues (veh)

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
West: Acceso Oeste											
1 LR	0.081	0.0	0.1	0.0	0.1	0.2	0.3	0.3	0.4	0.4	0.01
South: Acceso Sur											
1 LT	0.051	0.0	0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.00
2 T	0.051	0.0	0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.00
North: Acceso Norte											
1 T	0.647	0.0	2.2	0.0	2.2	3.8	4.7	5.4	6.7	7.8	0.10
2 TR	0.647	0.0	2.3	0.0	2.3	4.0	5.0	5.7	7.1	8.2	0.11

Values printed in this table are back of queue (vehicles).

Table D.3B - Lane Queues (feet)

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (feet) Nb1	Nb2	Nb	Percentile (feet) 70%	85%	90%	95%	98%	Queue Stor. Ratio
West: Acceso Oeste											

1 LR	0.081	0.0	2.8	0.0	2.8	5.3	6.5	7.3	9.0	10.4	0.01
South: Acceso Sur											
1 LT	0.051	0.0	1.8	0.0	1.8	3.4	4.1	4.7	5.8	6.7	0.00
2 T	0.051	0.0	1.8	0.0	1.8	3.4	4.2	4.7	5.8	6.7	0.00
North: Acceso Norte											
1 T	0.647	0.0	55.1	0.0	55.1	95.5	117.5	134.1	167.2	194.7	0.10
2 TR	0.647	0.0	58.3	0.0	58.3	100.5	123.8	141.3	176.3	205.5	0.11

Values printed in this table are back of queue (feet).

Table D.4 - Movement Speeds (mph) and Geometric Delay

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	App. Speeds Cruise	App. Speeds Negn	Exit Speeds Negn	Exit Speeds Cruise	Queue Move-up 1st Grn	Queue Move-up 2nd Grn	Av. Section Spd Running	Av. Section Spd Overall	Geom Delay (sec)
West: Acceso Oeste									
5L L	40.0	0.0	13.0	40.0			30.0	29.4	5.0
2R R	40.0	0.0	12.5	40.0			30.0	29.5	5.0
South: Acceso Sur									
3L L	40.0	12.2	12.2	40.0			31.4	27.2	9.0
8T T	40.0	40.0	40.0	40.0			39.8	39.7	0.0
North: Acceso Norte									
4T T	40.0	40.0	40.0	40.0			37.6	37.6	0.0
4R R	40.0	12.5	12.5	40.0			30.9	30.9	8.9

"Running Speed" is the average speed excluding stopped periods.

Table D.6 - Gap Acceptance Parameters

Intersecci n Avenida Laguna y Entrada Comercio y Oficinas
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Mov Type	Opng Flow (pcu/h)	Critical Gap Hdwy (s)	Critical Gap Dist (ft)	Foll-up Headway (s)	Entry HV Equiv
West: Acceso Oeste						
5L L	Normal	1198+	7.50	427.7	3.50	2.00
2R R	Normal	1115	2.00	117.3	1.00	2.00
South: Acceso Sur						

3L	L	Normal	1141	4.10	236.8	2.20	2.00
8T	T	Normal	1	6.50	123.8	4.00	2.00
North: Acceso Norte							
4T	T	Normal	24	6.50	116.6	4.00	2.00

Values in this table are adjusted for heavy vehicles in the entry stream.
+ Percentage of exiting flow included in total opposing flow

SIDRA SOLUTIONS

Site: New Site - 1
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A1460, PLC, Large Office
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SIDRA INTERSECTION

Output Tables

Intersección Avenida Laguna y Entrada Edif. Residencial (178 unidades)

Futura (PM)

Run Information

```
* Basic Parameters:
  Intersection Type: Unsignalised - Two-Way Stop Control
  Driving on the right-hand side of the road
  Input data specified in US units
  Model Defaults: US HCM (US)
  Peak Flow Period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes.
  Delay definition: Control delay
                    Geometric delay included
  HCM Delay Model option selected
  HCM Queue Model option selected
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile
```

Table B.1 - Movement Definitions and Flow Rates (Origin-Destination)

```
Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection
```

From Approach	To Approach	Mov ID	Turn	Flow Rate LV	Flow Rate HV	Flow Scale	Peak Flow Factor
West: Acceso Oeste							
	South	2R	Right	39	0	1.00	1.00
	North	5L	Left	1	0	1.00	1.00
South: Acceso Sur							
	West	3L	Left	33	0	1.00	1.00
	North	8T	Thru	70	0	1.00	1.00
North: Acceso Norte							
	West	4R	Right	38	0	1.00	1.00
	South	4T	Thru	1282	0	1.00	1.00

Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor

FIGURA 57

Table B.2A - Flow Rates (Separate Light and Heavy Vehicles)

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV
Demand flows in veh/hour as used by the program						
West: Acceso Oeste						
5L L	1	0	0	0	0	0
2R R	0	0	0	0	39	0
South: Acceso Sur						
3L L	33	0	0	0	0	0
8T T	0	0	70	0	0	0
North: Acceso Norte						
4T T	0	0	1282	0	0	0
4R R	0	0	0	0	38	0

Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor

Table B.2B - Flow Rates (Total Vehicles and Percent Heavy)

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Left Total	Left %HV	Through Total	Through %HV	Right Total	Right %HV
Demand flows in veh/hour as used by the program						
West: Acceso Oeste						
5L L	1	0.0	0	0.0	0	0.0
2R R	0	0.0	0	0.0	39	0.0
South: Acceso Sur						
3L L	33	0.0	0	0.0	0	0.0
8T T	0	0.0	70	0.0	0	0.0
North: Acceso Norte						
4T T	0	0.0	1282	0.0	0	0.0
4R R	0	0.0	0	0.0	38	0.0

Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor

Table S.2 - Movement Capacity Parameters

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Demand Flow (veh/h)	HV (%)	Opposing Movement Flow (veh/h)	HV (%)	Adjust. Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
West: Acceso Oeste										
5L L	1	0.0	1404+	0.0	1404	35	0.80	2700	100	0.029
2R R	39	0.0	1282	0.0	1282	1370	0.80	2710	100	0.028
South: Acceso Sur										
3L L	33	0.0	1320	0.0	1320	345	0.80	736	100	0.096
8T T	70	0.0	1	0.0	1	899	0.80	927	100	0.078
North: Acceso Norte										
4T T	1282	0.0	34	0.0	34	1697	0.80	6	100	0.755
4R R	38	0.0	0			50	0.80	5	100	0.760*

\+ Percentage of exiting flow included in total opposing flow

Table S.3 - Intersection Parameters

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Intersection Level of Service	=	NA
Worst movement Level of Service	=	C
Average intersection delay (s/pers)	=	1.8
Largest average movement delay (s)	=	19.1
Largest back of queue, 95% (ft)	=	278
Performance Index	=	23.33
Degree of saturation (highest)	=	0.760
Practical Spare Capacity (lowest)	=	5 %
Effective intersection capacity, (veh/h)	=	1925
Total vehicle flow (veh/h)	=	1463
Total person flow (pers/h)	=	1756
Total vehicle delay (veh-h/h)	=	0.72
Total person delay (pers-h/h)	=	0.86
Total effective vehicle stops (veh/h)	=	224
Total effective person stops (pers/h)	=	269
Total vehicle travel (veh-mi/h)	=	554.7
Total cost ($/h)	=	253.18
Total fuel (gal/h)	=	22.1
Total CO2 (kg/h)	=	208.76

NA Not Applicable - Intersection Level of Service is not calculated at two-way stop control or give-way/yield controlled intersections. See Table S.15 or Movement Displays for individual movement LOS values.

Table S.5 - Movement Performance

Mov ID		Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest 95% Back (vehs)	Queue (ft)	Perf. Index	Aver. Speed (mph)
West: Acceso Oeste										
5L	L	0.00	0.00	7.6	0.55	1.00	0.1	3	0.02	29.1
2R	R	0.08	0.10	7.6	0.55	0.88	0.1	3	0.68	29.1
South: Acceso Sur										
3L	L	0.18	0.21	19.1	0.81	0.94	0.4	10	0.79	25.6
8T	T	0.00	0.00	0.0	0.02	0.00	0.4	9	0.78	39.8
North: Acceso Norte										
4T	T	0.35	0.42	1.0	0.40	0.11	11.1	278	20.31	36.2
4R	R	0.10	0.13	9.9	0.42	0.40	11.1	278	0.76	30.5

Table S.6 - Intersection Performance

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Total Flow (veh/h)	Deg. Satn x	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue (ft)	Perf. Index	Aver. Speed (mph)
West: Acceso Oeste									
40	0.029	0.08	0.10	7.6	0.55	0.89	3	0.69	29.1
South: Acceso Sur									
103	0.096	0.18	0.21	6.1	0.27	0.30	10	1.57	33.8
North: Acceso Norte									
1320	0.760	0.46	0.55	1.2	0.40	0.12	278	21.07	36.0
ALL VEHICLES:									
1463	0.760	0.72	0.86	1.8	0.40	0.15	278	23.33	35.6
INTERSECTION (persons):									
1756	0.760		0.86	1.8	0.40	0.15		23.33	35.6

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

Table S.7 - Lane Performance

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue 95% Back (ft)	Lane Length (ft)
West: Acceso Oeste								
1 LR	40	1405	0.028	7.6	0.89	0.1	2.9	1600.0
South: Acceso Sur								
1 L	33	345	0.096	19.1	0.94	0.4	10.4	1600.0
2 T	70	899	0.078	0.0	0.00	0.4	9.0	1600.0
North: Acceso Norte								
1 T	651	862	0.755	0.9	0.11	10.1	253.4	1600.0
2 TR	669	886	0.755	1.5	0.13	11.1	278.3	1600.0

Table S.8 - Lane Flow and Capacity Information

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
West: Acceso Oeste								
1 LR	1	0	39	40	40	1405	0.028	100
South: Acceso Sur								
1 L	33	0	0	33	33	345	0.096	100
2 T	0	70	0	70	60	899	0.078	100
North: Acceso Norte								
1 T	0	651	0	651	651	862	0.755	100
2 TR	0	631	38	669	669	886	0.755	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.

Table S.10 - Movement Capacity and Performance Summary

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	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: Acceso Oeste									
5L	L	1	35	100	0.029	7.6	1.00	0.1	0.02
2R	R	39	1370	100	0.028	7.6	0.88	0.1	0.68
South: Acceso Sur									
3L	L	33	345	100	0.096	19.1	0.94	0.4	0.79
8T	T	70	899	100	0.078	0.0	0.00	0.4	0.78
North: Acceso Norte									
4T	T	1282	1697	100	0.755	1.0	0.11	11.1	20.31
4R	R	38	50	100	0.760*	9.9	0.40	11.1	0.76

* Maximum degree of saturation

Table S.12A - Fuel Consumption, Emissions and Cost (TOTAL)

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Fuel Total gal/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h
West: Acceso Oeste						
5L L	0.0	0.22	0.000	0.02	0.000	0.2
2R R	0.8	8.51	0.013	0.65	0.019	7.3
	0.8	8.73	0.013	0.67	0.019	7.5
South: Acceso Sur						
3L L	0.7	7.80	0.011	0.55	0.016	6.3
8T T	0.8	10.23	0.011	0.22	0.015	7.8
	1.5	18.03	0.022	0.77	0.031	14.1
North: Acceso Norte						
4T T	19.0	218.46	0.282	10.81	0.409	180.2
4R R	0.7	7.96	0.012	0.61	0.018	6.9
	19.8	226.42	0.295	11.42	0.427	187.1
INTERSECTION:	22.1	253.18	0.330	12.86	0.477	208.8

PARAMETERS USED IN COST CALCULATIONS

Pump price of fuel ($/US gal)	=	2.400
Fuel resource cost factor	=	0.70
Ratio of running cost to fuel cost	=	3.0
Average income ($/h)	=	19.00
Time value factor	=	0.40
Light vehicle mass (1000 lb)	=	3.1
Heavy vehicle mass (1000 lb)	=	24.0
Light vehicle idle fuel rate (US gal/h)	=	0.360
Heavy vehicle idle fuel rate (US gal/h)	=	0.530

Table S.12B - Fuel Consumption, Emissions and Cost (RATE)

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Fuel Eff. mpg	Cost Rate $/mi	HC Rate g/km	CO Rate g/km	NOX Rate g/km	CO2 Rate g/km
West: Acceso Oeste						
5L L	18.9	0.36	0.554	27.77	0.791	311.6
2R R	18.9	0.36	0.552	27.66	0.790	311.1
	18.9	0.36	0.552	27.66	0.790	311.1
South: Acceso Sur						
3L L	18.5	0.39	0.573	27.57	0.790	318.1
8T T	32.3	0.24	0.248	5.12	0.354	182.2
	26.1	0.29	0.351	12.26	0.493	225.5
North: Acceso Norte						
4T T	25.5	0.28	0.361	13.81	0.523	230.2
4R R	19.6	0.35	0.531	26.51	0.765	300.3
	25.3	0.28	0.366	14.18	0.530	232.2
INTERSECTION:	25.1	0.28	0.370	14.41	0.534	233.8

Table S.14 - Summary of Input and Output Data

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

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 (ft)	Shrt Lane (ft)
West: Acceso Oeste												
1 LR	1		39	40	0				0.028	7.6	3	1600
	1	0	39	40	0				0.028	7.6	3	
South: Acceso Sur												
1 L	33			33	0				0.096	19.1	10	1600
2 T		70		70	0				0.078	0.0	9	1600
	33	70	0	103	0				0.096	6.1	10	
North: Acceso Norte												
1 T		651		651	0				0.755	0.9	253	1600
2 TR		631	38	669	0				0.755	1.5	278	1600

0	1282	38	1320	0	0.755	1.2	278

ALL VEHICLES	Total Flow	% HV	Max X	Aver. Delay	Max Queue
	1463	0	0.760	1.8	278

Peak flow period = 15 minutes.

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

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Table S.15 - Capacity and Level of Service

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS	Longest Queue 95% Back (vehs)	(ft)
West: Acceso Oeste								
5L	L	1	35	0.029	7.6	A	0.1	3
2R	R	39	1370	0.028	7.6	A	0.1	3
South: Acceso Sur								
3L	L	33	345	0.096	19.1	C	0.4	10
8T	T	70	899	0.078	0.0	A	0.4	9
North: Acceso Norte								
4T	T	1282	1697	0.755	1.0	A	11.1	278
4R	R	38	50	0.760*	9.9	A	11.1	278
ALL VEHICLES:		1463		0.760	1.8	NA	11.1	278

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

NA Not Applicable - Intersection Level of Service is not calculated at two-way stop control or give-way/yield controlled intersections.

* Maximum v/c ratio, or critical green periods
" Movement Level of service has been determined using adjacent lane v/c ratio rather than short lane v/c ratio (v/c=1.0)

Table D.0 - Geometric Delay Data

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3

Stop Sign Controlled Intersection

From Approach	To Approach	Turn	Negn Radius (ft)	Negn Speed (mph)	Negn Dist. (ft)	Appr. Dist. (ft)	Downstream Distance (ft)	User Spec?
West: Acceso Oeste								
	South	Right	32.8	12.5	51.5	1600	387	No
	North	Left	30.6	12.2	48.1	1600	384	No
South: Acceso Sur								
	West	Left	30.6	12.2	48.1	1600	384	No
	North	Thru	S	40.0	36.0	1600	403	No
North: Acceso Norte								
	West	Right	32.8	12.5	51.5	1600	387	No
	South	Thru	S	40.0	36.0	1600	403	No

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.

Table D.1 - Lane Delays

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Stop-line Delay 1st d1	2nd d2	Total dSL	Delay (seconds/veh) Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
West: Acceso Oeste										
1 LR	0.028	2.6	0.1	2.6	1.2	1.5	0.0	1.5	5.0	7.6
South: Acceso Sur										
1 L	0.096	10.1	0.0	10.1	3.2	6.9	0.0	6.9	9.0	19.1
2 T	0.078	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
North: Acceso Norte										
1 T	0.755	0.9	0.0	0.9	3.4	0.0	0.0	0.0	0.0	0.9
2 TR	0.755	1.0	0.0	1.0	3.6	0.0	0.0	0.0	0.5	1.5

dn is average stop-start delay for all vehicles queued and unqueued

Table D.2 - Lane Stops

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	-- Effective Stop Rate -- hel	he2	Geom. hig	Overall h	Prop. Queued pq	Queue Move-up Rate hqm
West: Acceso Oeste							
1 LR	0.028	0.44	0.00	0.45	0.89	0.553	0.00
South: Acceso Sur							
1 L	0.096	0.81	0.00	0.13	0.94	0.806	0.00
2 T	0.078	0.00	0.00	0.00	0.00	0.015	0.00
North: Acceso Norte							
1 T	0.755	0.11	0.00	0.00	0.11	0.387	0.00
2 TR	0.755	0.11	0.00	0.02	0.13	0.417	0.00

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

Table D.3A - Lane Queues (veh)

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
West: Acceso Oeste											
1 LR	0.028	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.00
South: Acceso Sur											
1 L	0.096	0.0	0.1	0.0	0.1	0.2	0.3	0.3	0.4	0.5	0.01
2 T	0.078	0.0	0.1	0.0	0.1	0.2	0.3	0.3	0.4	0.4	0.01
North: Acceso Norte											
1 T	0.755	0.0	3.4	0.0	3.4	5.7	7.0	8.1	10.1	11.9	0.16
2 TR	0.755	0.0	3.8	0.0	3.8	6.2	7.7	8.9	11.1	13.0	0.17

Values printed in this table are back of queue (vehicles).

Table D.3B - Lane Queues (feet)

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (feet) Nb1	Nb2	Nb	Percentile (feet) 70%	85%	90%	95%	98%	Queue Stor. Ratio
West: Acceso Oeste											

1 LR	0.028	0.0	0.9	0.0	0.9	1.7	2.1	2.4	2.9	3.4	0.00
South: Acceso Sur											
1 L	0.096	0.0	3.3	0.0	3.3	6.2	7.5	8.4	10.4	12.0	0.01
2 T	0.078	0.0	2.8	0.0	2.8	5.4	6.5	7.3	9.0	10.5	0.01
North: Acceso Norte											
1 T	0.755	0.0	85.7	0.0	85.7	142.0	176.2	202.0	253.4	296.3	0.16
2 TR	0.755	0.0	94.8	0.0	94.8	155.0	193.0	221.4	278.3	325.7	0.17

Values printed in this table are back of queue (feet).

Table D.4 - Movement Speeds (mph) and Geometric Delay

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	App. Speeds Cruise	App. Speeds Negn	Exit Speeds Negn	Exit Speeds Cruise	Queue Move-up 1st Grn	Queue Move-up 2nd Grn	Av. Section Spd Running	Av. Section Spd Overall	Geom Delay (sec)
West: Acceso Oeste									
5L L	40.0	0.0	12.2	40.0			30.1	29.1	5.0
2R R	40.0	0.0	12.5	40.0			30.0	29.1	5.0
South: Acceso Sur									
3L L	40.0	12.2	12.2	40.0			29.4	25.6	9.0
8T T	40.0	40.0	40.0	40.0			39.8	39.8	0.0
North: Acceso Norte									
4T T	40.0	40.0	40.0	40.0			36.2	36.2	0.0
4R R	40.0	12.5	12.5	40.0			30.5	30.5	8.9

"Running Speed" is the average speed excluding stopped periods.

Table D.6 - Gap Acceptance Parameters

Intersecci n Avenida Laguna y Entrada Edif. Residencial (178 unidades)
Futura (PM)
Intersection ID: 3
Stop Sign Controlled Intersection

Mov ID	Mov Type	Opng Flow (pcu/h)	Critical Gap Hdwy (s)	Critical Gap Dist (ft)	Foll-up Headway (s)	Entry HV Equiv
West: Acceso Oeste						
5L L	Normal	1404+	7.50	424.8	3.50	2.00
2R R	Normal	1282	2.00	117.3	1.00	2.00
South: Acceso Sur						

3L L	Normal	1320	4.10	235.8	2.20	2.00
8T T	Normal	1	6.50	116.3	4.00	2.00
North: Acceso Norte						
4T T	Normal	34	6.50	116.3	4.00	2.00

Values in this table are adjusted for heavy vehicles in the entry stream.
+ Percentage of exiting flow included in total opposing flow

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