5 ANÁLISIS DE TRÁNSITO

5.1 Afluencia vehicular

A modo de determinar el patrón de viajes actuales del sector se rea conteo manual en la intersección de la carretera PR-3 con la carretera PR- la intersección de la carretera PR-3 y la carretera PR-194, y en la intersecci carretera PR-3 y el acceso a Los Paisajes.

Las tablas en el apéndice 1 ilustran el flujo vehicular obtenido mediante conteos manuales.

Para determinar la hora pico se buscaron los cuatro períodos consecut 15 minutos con más flujo. Una vez se encontraba esta hora en los períodc PM, se buscaba el período de 15 minutos con mayor flujo, y este valor mult por cuatro era el que se utilizaba para la modelación. Dado que ya se está el valor del período de 15 minutos mas alto, el factor de hora pico a utiliz 1.0.

Los flujos mostrados están identificados por dos letras separadas por ur La primera representa el acceso de procedencia del movimiento en inglés South, East & West. La segunda letra representa el tipo de movimiento: Le & Right.

Las siguientes tablas muestran los flujos vehiculares por acceso intersecciones estudiadas.

Tabla 2 Flujos PR-3 y PR-193 (Condición Presente)

2004	S-L	S-T	S-R	E-L	E-T	E-R	N-L	N-T	N-R	W-L	W-T	W-F
Pico AM	212	96	24	128	1112	92	116	56	76	128	2224	15
Pico PM	136	92	24	180	1980	100	64	100	60	116	1792	19

Tabla 3 Flujos PR-3 y PR-194/PR-940 (Condición Presente)

2004	S-L	S-T	S-R	E-L	E-T	E-R	N-L	N-T	N-R	W-L	W-T	W-R	Total
Pico AM	36	32	24	160	896	44	180	292	260	648	1692	4	4268
Pico PM	564	420	272	928	1840	128	172	184	200	680	864	60	6312

Tabla 4 Flujos PR-3 y Los Paisajes (Condición Presente)

2004	S-L	S-R	E-L	E-T	W-T	W-R	W-LU	Total
Pico AM	28	16	24	1304	2224	4	0	3600
Pico PM	20	8	48	2196	1560	28	20	3880

5.2 Crecimiento Anual

Los flujos obtenidos en el año 2004 fueron expandidos al año 2007, cuando entendemos que el proyecto estará operando. Los flujos de la zona fueron expandidos utilizando un factor de 1.5% de crecimiento anual.

Además del crecimiento anual, incluimos en el año 2007 el flujo que se espera que se genere por otros proyectos que ya han sido sometidos en la Junta de Planificación. Los flujos que generarían estos otros proyectos se presentan adelante.

5.3 Generación de Viajes de otros proyectos

En la zona del proyecto bajo estudio hay varios proyectos que han sido presentados en la Junta de Planes, que entendemos que impactarán las vías aledañas al proyecto en estudio. En las siguiente tablas se muestran los resultados obtenidos en los cómputos de generación de viajes de estos proyectos así como su tamaño y el tipo de desarrollo. La primera de estas tablas muestra la Generación de viajes de dos proyecto propuestos al Oeste del proyecto bajo estudio.

Tabla 5 Generación Otros Proyectos al Oeste de Los Paisajes

Categoría				ADT			Pico AM			Pico PM		
Uso	ITE	Total	Unidades	Total	In	Out	Total	In	Out	Total	In	Out
Los Palacios-Multifam.	230	74	Apartamentos	497	248	248	41	7	34	47	31	15
Fortuna SC- Centro Comercial	820	270	X 1,000 PC	12,952	6,476	6,476	284	173	111	1,206	579	627
Total				13,449	6,724	6,724	325	180	144	1,253	610	643

Para efecto de las modelaciones, el flujo del centro comercial fue reducido en un 50% debido al efecto de los "pass by". Al Este del proyecto propuesto, en el Km 38.3 de la PR-3 encontramos al proyecto Turístico Residencial San Miguel Resort. En la siguiente tabla se presenta la generación de este proyecto.

Tabla 6 Generación Otros Proyectos al Este de Los Paisajes

Categoría				Pico AM			Pico PM		
Uso	ITE	Total	Unidades	Total	In	Out	Total	In	Out
San Miguel- Hotel Resort	330	650	Habitaciones	235	169	66	330	142	188
San Miguel- Residencia Recreacional	260	1150	Viviendas	184	123	61	299	123	176
Total				419	292	126	629	264	364

5.4 Generación de Viajes de Los Paisajes

La siguiente tabla muestra los resultados del análisis de generación de viajes del proyecto bajo estudio. La tabla muestra los diferentes usos que se establecerán en Los Paisajes. Los cómputos fueron realizados siguiendo la metodología del Manual de Generación de Viajes del ITE.

Tabla 7 Generación Proyecto Los Paisajes

Uso	Categoría ITE	Total	Unidades	ADT Total	ADT In	ADT Out	Pico AM Total	Pico AM In	Pico AM Out	Pico PM Total	Pico PM In	Pico PM Out
Multifamiliar	230	128	Apartamentos	792	396	396	63	11	52	74	49	24
Res Unifamiliar	210	66	Viviendas	709	355	355	56	14	42	74	46	27
Resort Hotel	330	101	Habitaciones ocupadas	N/A			122	88	34	153	66	87
Centro Comercial	820	39	X 1,000 PC	3,682	1,841	1,841	89	54	35	336	161	175
Total				5,184	2,592	2,592	330	167	163	636	323	314

Para el área comercial utilizamos un valor de "Pass By" de 50%. Este valor representa el porciento de los viajes que genera el área comercial, que ya se encuentra transitando por las vías, y se desvían de su ruta original para entrar al área comercial.

5.5 Distribución de Viajes

Para la distribución de los viajes desde y hacia el nuevo desarrollo presumimos que el 60% de los viajes se dirigirían desde y hacia el oeste y el 40% desde y hacia el este.

El tránsito de los otros proyectos fue presumido con un patrón similar.

5.6 Tránsito Futuro

Para la modelación de la situación futura se tomaron los flujos de la situación base, se multiplicaron por el factor de crecimiento anual y se le añadieron los flujos que se obtuvieron en la etapa de generación de viajes, repartidos de acuerdo a la distribución que se explicó anteriormente. También se sumaron los flujos que se obtuvieron de los otros proyectos del área. Las siguientes tablas muestran los flujos modelados.

Tabla 8 Flujos PR-3 y PR-193 (Condición Futuro)

2007 + P	S-L	S-T	S-R	E-L	E-T	E-R	N-L	N-T	N-R	W-L	W-T	W-R	Total
Pico AM	222	100	25	134	1381	96	121	59	79	134	2611	163	5125
Pico PM	142	96	25	188	2550	105	67	105	63	121	2322	201	5985

Tabla 9 Flujos PR-3 y PR-194 (Condición Futuro)

2007 + P	S-L	S-T	S-R	E-L	E-T	E-R	N-L	N-T	N-R	W-L	W-T	W-R	Total
Pico AM	38	33	25	167	1148	46	188	305	272	678	1913	4	4817
Pico PM	590	439	284	970	2256	134	180	192	209	711	1270	63	7298

Tabla 10 Flujos PR-3 y Los Paisajes (Condición Futuro)

2007 + P	S-L	S-R	E-L	E-T	W-T	W-R	W-LU	Total
Pico AM	127		92	1467	2520	104	0	4310
Pico PM	209		179	2612	1872	223	21	5116

5.7 Modelación de Tránsito

Para la evaluación de las intersecciones afectadas se utilizó el programa aaSIDRA (v. 2.0). Este modelo permite la evaluación de intersecciones semaforizadas y de prioridad, además de la optimización de los tiempos de las fases de intersecciones semaforizadas, y es el preferido debido a su capacidad de

predicción, aún en situaciones de sobresaturación. Se realizaron modelaciones para los períodos pico de la mañana y de la tarde para la situación actual y la situación futura.

5.7.1 Intersección PR-3 y PR-193

Esta intersección semaforizada tiene una configuración en forma de cruz. La siguiente tabla muestra los resultados de la modelación en aaSIDRA de esta intersección.

Tabla 11 Resultados modelación aaSIDRA PR-3 y PR-193

	Demora Promedio por Vehículo [seg.] y Nivel de Servicio (LOS)				
	Acceso Sur PR-193	Acceso Este PR-3	Acceso Norte PR-193	Acceso Oeste PR-3	Total Int.
Base 2004					
AM	46.3 D	20.3 C	37.9 D	23.3 C	24.9 C
PM	40.1 D	20.8 C	30.2 C	20.1 C	21.9 C
Futuro 2007					
AM	60.9 E	23.1 C	48.8 D	28.5 C	30.0 C
PM	56.5 E	25.6 C	41.8 D	20.5 C	25.4 C

Esta intersección mantendrá un nivel aceptable en el nivel de servicio luego de la construcción del proyecto bajo estudio, y de los otros proyectos presentados en el área.

5.7.2 Intersección PR-3 y PR-194 / PR-940

Esta intersección es una semaforizada con forma de cruz. La misma esta localizada al Este del proyecto bajo estudio. La siguiente tabla muestra los resultados de la modelación en aaSIDRA de esta intersección.

Tabla 12 Resultados modelación aaSIDRA PR-3 y PR-194 / PR-940

	Demora Promedio por Vehículo [seg.] y Nivel de Servicio (LOS)				
	Acceso Sur PR-940	Acceso Este PR-3	Acceso Norte PR-194	Acceso Oeste PR-3	Total Int.
Base 2004					
AM	25.4 C	23.4 C	20.6 C	20.5 C	21.4 C
PM	61.8 E	48.9 D	33.5 C	63.6 E	53.8 D
Futuro 2007					
AM	26.6 C	22.4 C	22.1 C	21.1 C	21.7 C
PM	100.7 F	62.0 E	33.2 C	61.9 E	66.6 E

Como podemos observar, esta intersección tendrá capacidad para manejar el flujo vehicular esperado en el futuro.

5.7.3 Intersección PR-3 y Acceso Los Paisajes

Esta intersección es controlada por semáforo, con una configuración de "T". En la actualidad esta intersección ya existe, ya que la misma maneja el tránsito de una fase previa del proyecto que fue construida hace varios años. Cuando se construya la fase que está bajo estudio, se construiría una marginal que tendría una salida en la carretera PR-3 en dirección hacia el Este. Por tal razón entendemos que en lugar de tener vehículos virando hacia la derecha desde el acceso Sur, los mismos saldrían a través de la marginal.

La siguiente tabla muestra los resultados de la modelación en aaSIDRA de esta intersección.

Tabla 13 Resultados modelación aaSIDRA PR-3 y Acceso Los Paisajes

	Demora Promedio por Vehículo [seg.] y Nivel de Servicio (LOS)				
	Acceso Sur Los Paisajes	Acceso Este PR-3	Acceso Norte N/A	Acceso Oeste PR-3	Total Int.
Base 2004					
AM	45.7 D	2.4 A	N/A	5.4 A	4.8 A
PM	50.0 D	3.2 A	N/A	5.0 A	4.3 A
Futuro 2007					
AM	62.9 E	5.3 A	N/A	8.0 A	8.6 A
PM	58.9 E	6.4 A	N/A	11.6 B	10.7 B

Como se puede observar, esta intersección cuenta con capacidad suficiente en las horas pico para manejar el tránsito que generará este proyecto y los otros proyectos propuestos en el área.

En el Apéndice 2 presentamos las corridas del programa aaSIDRA para las intersecciones discutidas anteriormente.

6 CONCLUSIONES Y RECOMENDACIONES

Luego de llevar a cabo los análisis pertinentes en las intersecciones de interés podemos concluir que el proyecto propuesto es uno viable en el área donde se pretende su desarrollo. Los niveles de servicio de las intersecciones bajo estudio obtenidos en las modelaciones reflejan que las mismas tienen la capacidad para manejar el incremento en tránsito vehicular que surgirá como efecto no sólo del proyecto que nos ocupa, sino también de otros desarrollos proyectados para el área y que fueron tomados en consideración en nuestros análisis.

De dichos análisis se desprende también que no son necesarias mejoras geométricas en las intersecciones que fueron analizadas.

Por todo lo antes aquí expuesto, y basándonos en los resultados de las modelaciones y análisis realizados en este estudio nos reiteramos en que el desarrollo propuesto es uno de carácter viable desde el punto de vista de la Ingeniería de Tránsito en el área donde se pretende su desarrollo.

7 CERTIFICACIÓN

Certifico que la información presentada en este estudio es cierta, correcta y completa, y que fue obtenida utilizando los criterios de la practica usual y aceptada de la ingeniería de tránsito

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Lic. 13395

8 REFERENCIAS

1. Trip Generation Manual, Institute of Transportation Engineers, 7th edition, 2003
2. Trip Generation Handbook: An ITE Recommended Practice, Institute of Transportation Engineers, March 2001
3. aaSIDRA 2.0 User Manual

9 APÉNDICES

APÉNDICE 1:

Flujos Obtenidos Mediante Conteos

Conteos PR-3 y PR-193

Beginning	Movement												
of Period	S-L	S-T	S-R	E-L	E-T	E-R	N-L	N-T	N-R	W-L	W-T	W-R	Total
6:00	22	20	5	14	200	5	10	10	5	16	289	28	624
6:15	29	35	6	16	218	8	15	15	8	17	378	30	775
6:30	38	30	7	15	250	8	12	10	9	20	389	35	823
6:45	46	29	7	25	298	8	11	12	11	22	380	32	881
7:00	69	17	9	26	262	18	8	15	11	32	421	29	917
7:15	32	6	0	33	333	6	6	15	12	21	434	30	928
7:30	64	20	6	20	320	10	10	10	11	30	472	44	1017
7:45	81	28	7	36	340	21	7	17	18	32	421	52	1060
8:00	72	35	18	42	272	15	21	19	14	41	475	47	1071
8:15	53	24	6	32	278	23	29	14	19	32	556	39	1105
8:30	53	17	14	29	251	40	3	10	20	5	554	38	1034
8:45	41	30	7	33	250	28	21	18	17	25	496	30	996
9:00	51	21	7	32	253	50	3	2	14	7	325	23	788
9:15	43	25	7	30	250	24	10	3	20	15	340	23	790
9:30	37	25	6	40	300	31	14	9	12	10	387	28	899
9:45	32	22	10	24	300	24	24	16	16	17	330	25	840
10:00	20	15	8	37	310	29	17	16	15	24	398	26	915
10:15	33	33	9	63	302	22	12	15	13	33	391	24	950
10:30	41	25	15	30	280	28	18	13	24	42	370	32	918
10:45	24	26	4	17	268	16	26	19	16	31	306	24	777
11:00	19	21	5	36	285	14	23	33	17	35	392	37	917
11:15	36	26	16	55	246	19	19	17	11	52	422	36	955
11:30	50	25	8	34	263	37	23	26	14	41	376	33	930
11:45	42	72	6	35	266	37	13	40	17	80	454	23	1085
12:00	39	31	5	68	310	32	47	32	10	53	338	28	993
12:15	57	45	20	85	287	28	22	29	15	57	318	23	986
12:30	49	20	13	62	297	37	25	34	12	48	401	33	1031
12:45	57	47	16	52	283	34	24	24	9	44	310	44	944
13:00	66	31	9	41	243	38	32	28	14	34	326	35	897
13:15	43	35	9	58	275	27	22	23	14	44	260	42	852
13:30	52	30	5	48	253	27	31	39	12	49	261	27	834
13:45	56	40	6	48	255	21	29	19	20	30	313	42	879
14:00	42	33	9	51	339	31	42	29	10	47	244	34	911
14:15	56	45	17	63	399	30	22	29	15	33	277	44	1030
14:30	60	34	4	51	366	44	26	30	9	52	289	46	1011
14:45	67	36	17	50	414	40	23	21	20	39	316	38	1081
15:00	77	43	14	57	428	20	31	41	21	36	301	62	1131
15:15	50	40	0	12	458	49	37	34	10	48	298	48	1084
15:30	63	25	7	54	463	27	25	14	4	36	285	37	1040
15:45	56	30	10	75	500	19	40	22	8	60	290	65	1175
16:00	57	24	5	65	440	27	37	27	12	34	328	58	1114
16:15	47	24	11	46	453	28	32	32	14	26	354	60	1127
16:30	54	17	6	39	487	30	22	24	9	44	402	58	1192
16:45	34	23	6	45	495	25	16	25	15	29	448	48	1209
17:00	54	15	1	42	448	33	15	26	3	28	351	55	1071
17:15	54	18	13	46	442	19	10	27	14	29	295	37	1004
17:30	40	21	5	25	378	16	7	6	8	26	325	67	924
17:45	29	13	6	37	389	13	19	14	3	19	298	33	873

Conteo PR-3 y PR-194

Beginning	Movement												
of Period	S-L	S-T	S-R	E-L	E-T	E-R	N-L	N-T	N-R	W-L	W-T	W-R	Total
6:00	2	2	2	2	157	2	33	10	44	100	200	2	556
6:15	3	3	1	4	150	1	41	11	54	110	250	4	632
6:30	3	2	2	2	193	1	50	33	66	119	250	9	730
6:45	4	4	2	2	210	11	63	29	72	131	278	2	808
7:00	5	13	3	3	209	11	43	38	85	161	254	1	826
7:15	4	9	2	2	202	5	39	49	96	131	220	1	760
7:30	6	12	3	27	263	8	43	50	97	150	312	8	979
7:45	10	4	1	67	204	12	45	75	125	108	286	2	939
8:00	14	16	5	43	229	10	39	63	109	137	360	3	1028
8:15	8	11	7	57	219	12	40	60	89	160	368	10	1041
8:30	9	8	6	40	224	11	45	73	65	162	423	1	1067
8:45	3	4	6	50	200	11	33	80	45	116	366	4	918
9:00	3	4	0	59	203	12	40	95	48	111	240	16	831
9:15	5	7	4	53	241	20	25	99	38	113	210	5	820
9:30	16	20	7	52	243	21	46	159	57	153	204	3	981
9:45	19	20	13	66	225	30	30	150	79	118	240	10	1000
10:00	14	9	2	55	268	22	39	72	23	128	300	10	942
10:15	7	9	0	61	285	27	47	82	69	121	208	5	921
10:30	10	10	4	49	289	24	41	100	47	109	276	6	965
10:45	24	13	15	47	204	26	108	109	87	127	252	1	1013
11:00	14	14	10	56	261	30	74	121	69	122	363	1	1135
11:15	27	18	7	95	229	39	70	100	46	119	351	9	1110
11:30	5	6	3	87	275	53	84	91	31	92	277	10	1014
11:45	12	6	5	62	271	40	68	55	35	97	334	6	991
12:00	23	16	32	67	301	30	58	80	32	97	244	8	988
12:15	76	53	47	156	268	23	64	69	60	84	250	4	1154
12:30	46	46	95	133	280	17	41	49	53	125	206	4	1095
12:45	49	42	84	137	310	29	50	31	45	98	227	2	1104
13:00	60	50	80	116	240	19	36	43	45	72	272	4	1037
13:15	33	30	76	126	261	13	33	23	49	101	183	6	934
13:30	81	42	65	126	314	15	33	52	50	97	141	7	1023
13:45	54	41	62	126	405	10	43	65	57	106	162	6	1137
14:00	55	32	52	155	325	26	45	62	72	140	107	8	1079
14:15	85	42	46	90	337	12	39	39	46	148	86	4	974
14:30	80	41	108	177	398	22	30	49	57	88	151	7	1208
14:45	68	47	112	188	390	20	46	70	72	94	138	3	1248
15:00	84	79	65	223	385	14	38	59	82	97	138	2	1266
15:15	97	72	90	187	368	20	60	78	88	111	182	18	1371
15:30	96	76	64	148	411	27	23	55	47	114	121	11	1193
15:45	49	16	40	100	392	30	35	29	61	95	191	13	1051
16:00	31	24	70	159	375	24	85	69	68	101	198	14	1218
16:15	120	94	130	159	434	74	42	70	33	88	228	3	1475
16:30	141	105	68	232	460	32	43	46	50	170	216	15	1578
16:45	144	98	103	256	394	30	46	49	88	161	172	10	1551
17:00	76	48	83	198	361	41	92	85	70	125	176	15	1370
17:15	136	80	72	249	349	46	70	49	74	98	200	14	1437
17:30	98	67	77	139	338	46	66	69	72	123	202	15	1312
17:45	113	82	53	162	319	29	40	70	70	106	220	10	1274

Conteo PR-3 y Acceso Los Paisajes

Beginning	Movement							
of Period	S-L	S-R	E-L	E-T	W-T	W-R	W-LU	Total
6:00	3	2	2	200	324	2	2	535
6:15	2	3	3	201	384	2	0	595
6:30	6	5	1	249	402	4	0	667
6:45	2	7	3	300	390	6	1	709
7:00	10	4	8	300	383	2	1	708
7:15	0	4	1	308	354	0	0	667
7:30	9	4	2	341	480	0	0	836
7:45	9	6	2	339	404	1	0	761
8:00	7	4	6	326	556	1	0	900
8:15	1	2	2	277	569	0	0	851
8:30	14	4	9	256	592	0	0	875
8:45	2	7	6	250	499	0	1	765
9:00	5	9	2	249	317	0	0	582
9:15	14	15	24	261	300	2	0	616
9:30	4	12	14	290	374	0	0	694
9:45	4	4	4	278	291	1	0	582
10:00	5	6	4	278	463	0	0	756
10:15	6	2	4	305	361	1	0	679
10:30	3	2	14	275	437	0	0	731
10:45	1	5	2	261	338	0	0	607
11:00	6	0	1	320	443	2	0	772
11:15	3	2	4	284	477	1	1	772
11:30	3	2	1	300	388	2	0	696
11:45	4	2	9	302	476	2	0	795
12:00	2	2	10	320	330	3	6	673
12:15	7	3	22	324	393	3	2	754
12:30	7	5	44	288	398	2	2	746
12:45	7	2	29	304	358	6	2	708
13:00	5	2	14	287	325	7	3	643
13:15	2	3	4	308	272	8	0	597
13:30	1	2	5	345	299	5	5	662
13:45	4	1	8	400	251	3	2	669
14:00	1	2	8	402	216	5	2	636
14:15	1	1	1	427	211	4	6	651
14:30	3	3	14	453	285	2	0	760
14:45	2	7	3	420	223	2	0	657
15:00	5	1	5	434	224	3	0	672
15:15	2	0	5	462	299	2	0	770
15:30	4	2	26	448	230	2	1	713
15:45	1	1	19	483	262	5	0	771
16:00	1	3	12	434	275	4	1	730
16:15	1	2	11	449	300	5	1	769
16:30	5	2	12	549	390	7	5	970
16:45	6	3	4	473	357	4	1	848
17:00	5	6	27	467	335	6	1	847
17:15	8	9	60	429	290	6	0	802
17:30	5	2	41	411	330	4	0	793
17:45	2	2	26	387	335	7	3	762

APÉNDICE 2:

Resultados corridas de aaSIDRA

Akcelik & Associates Pty Ltd - aaSIDRA 2.0.3.217

Traffic Consulting Group
TCG Registered User No. M0276
Licence Type: Professional, Multi Computer

Time and Date of Analysis 10:56 AM, 22 Jun 2004

ame: C:\My Documents\aaSIDRA Projects\Paisajes\01_PR-3 y PR-193_BA.OUT

?R-3 y PR-193
AM Base
section ID: 1

NFORMATION

ble cycle time run: "Optimum" cycle time = 90 s

ic Parameters:
ersection Type: Signalised - Fixed Time
ving on the right-hand side of the road
ut data specified in Metric units
ault Values File No. 30
k flow period (for performance): 15 minutes
t time (for volumes): 60 minutes (Hourly Rate)
cified performance measure for "best" cycle time in variable run - Delay
ay definition: Control delay
Geometric delay included
IDRA Standard Delay and Queue models used
el of Service based on: Delay (HCM method)
ue definition: Back of queue, 95th Percentile

of Main (Timing-Capacity) Iterations = 1
parison of last two iterations:
ifference in intersection degree of satn = 0.0 %
ifference in total vehicle capacity = 0.0 %
argest difference in eff. green times = 0 secs
max. value for stopping = 0 secs)

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

PR-3 y PR-193
AM Base
section ID: 1

LT PARAMETERS

lt values for some of the important general parameters:
ult Values File: DEF30.SDF)

Basic saturation flow: 1950 tcu/h

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

	Crit. Gap	Fol.up Hdway	Deps at End	% Exit Flow Opposing
Left turns :	4.5	2.6	2.2	0
Right turns:	4.0	2.4	2.5	0

4. Cruise speed= 60 km/h, Approach Distance= 500 m

5. Queue space per vehicle in metres
Light vehicles: 7.0 Heavy vehicles: 13.0

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

Int. PR-3 y PR-193
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 90

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES	Demand flows in veh/hour as used by the program							
South: PR-193 S								
1	212	0	0	0	0	0	1.00	1.00
2	0	0	96	0	0	0	1.00	1.00
3	0	0	0	0	24	0	1.00	1.00
East: PR-3 E								
4	128	0	0	0	0	0	1.00	1.00
5	0	0	1112	0	0	0	1.00	1.00
6	0	0	0	0	92	0	1.00	1.00
North: PR-193 N								
7	116	0	0	0	0	0	1.00	1.00
8	0	0	56	0	0	0	1.00	1.00
9	0	0	0	0	76	0	1.00	1.00
West: PR-3 W								
10	128	0	0	0	0	0	1.00	1.00
11	0	0	2224	0	0	0	1.00	1.00
12	0	0	0	0	156	0	1.00	1.00

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

Int. PR-3 y PR-193
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 90

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	PHASE MATRIX First Green Fr	To	Op	Pr	PHASE MATRIX Second Green Fr	To	Op	Pr	Lost Tim 1st Grn	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
South: PR-193 S															
1	L	C	D							4		15.4		13	

6	R	(Und)	B	C		C	B	R	4	11	34.0	30.0Min	46 29
North: PR-193 N													
7	L		D	A					4		10.2		7
8	T		D	A					4		10.0Min		7
9	R	(Un1)	A	D	R	*D	A		32	4	44.4	10.2	47 7
West: PR-3 W													
10	L		*A	B					4		10.9		8
11	T		B	C					4		44.7		46
12	R	(Un2)	*B	C		C	B	R	4	8	44.7	36.9	46 32

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

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

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

Int. PR-3 y PR-193
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 90

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.		Dem Flow (veh /h)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: PR-193 S											
1	L	212	1857		0.114		268	0.90	14	100	0.790
2	T	96	1335		0.072		193	0.90	81	63	0.498
3	R	24	0	128	0.114	0.187	49	0.90	82	63	0.495
East: PR-3 E											
4	L	128	2445		0.052		217	0.90	53	100	0.589
5	T	1112	3695		0.301		1889	0.90	53	100	0.589
6	R	92	257	78	0.358	0.000	156	0.90	53	100	0.588
North: PR-193 N											
7	L	116	1857		0.062		144	0.90	12	100	0.803*
8	T	56	1639		0.034		127	0.90	105	55	0.439
9	R	76	213	793	0.124	0.062	173	0.90	105	55	0.440
West: PR-3 W											
10	L	128	1857		0.069		165	0.90	16	97	0.775
11	T	2224	5467		0.407		2794	0.90	13	100	0.796
12	R	156	365	26	0.407	0.289	196	0.90	13	100	0.797

Int. PR-3 y PR-193
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 90

Table S.3 - INTERSECTION PARAMETERS

Crit Mov No.	App. & Turn	Green Period	Phases Fr	Phases To	Adjusted Lost Time	Adjusted Flow Ratio	Required Grn Time Ratio	Required Movement Time
10	W_L		A	B	4	0.069	0.077	10.9
12	W_R	1st	B	C	4	0.407	0.452	44.7
3	S_R	1st	C	D	4	0.114	0.127	15.4
9	N_R	2nd	D	A	4	0.062	0.069	10.2
				Total:	16	0.652	0.725	81.2

Cycle Time:

Minimum	Maximum	Practical	Chosen
40	150	58	90

(Variable cycle times: Program-determined)

Intersection Level of Service	=	C
Worst movement Level of Service	=	E
Average intersection delay (s)	=	24.9
Largest average movement delay (s)	=	59.2
Largest back of queue, 95% (m)	=	207
Performance Index	=	192.00
Degree of saturation (highest)	=	0.803
Practical Spare Capacity (lowest)	=	12 %
Total vehicle capacity, all lanes (veh/h)	=	6371
Total vehicle flow (veh/h)	=	4420
Total person flow (pers/h)	=	6630
Total vehicle delay (veh-h/h)	=	30.63
Total person delay (pers-h/h)	=	45.94
Total effective vehicle stops (veh/h)	=	3549
Total effective person stops (pers/h)	=	5323
Total vehicle travel (veh-km/h)	=	2677.9
Total cost ($/h)	=	1778.37
Total fuel (L/h)	=	324.4
Total CO2 (kg/h)	=	811.12

Int. PR-3 y PR-193
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 90

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Grn+Intgrn Prop.
A	0	4	8	12	0.133
B	12	16	46	50	0.556
C	62	66	13	17	0.189
D	79	83	7	11	0.122

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

Int. PR-3 y PR-193
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 90

Table S.5 - MOVEMENT PERFORMANCE

Mov No.		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 (m)	Perf. Index	Aver. Speed (km/h)
South: PR-193 S										
1	L	3.17	4.75	53.8	1.00	0.92	11.5	81	12.47	24.2
2	T	0.84	1.25	31.3	0.95	0.81	5.0	35	4.04	32.2
3	R	0.27	0.40	40.3	0.95	0.84	5.0	35	1.07	28.4

East: PR-3 E										
4	L	1.97	2.96	55.4	1.00	0.79	5.9	41	7.42	23.7
5	T	4.96	7.44	16.1	0.75	0.68	18.8	132	40.56	41.6
6	R	0.59	0.89	23.1	0.73	0.85	17.7	124	3.52	36.7
North: PR-193 N										
7	L	1.91	2.86	59.2	1.00	0.90	7.3	51	7.12	22.8
8	T	0.22	0.33	14.0	0.83	0.68	4.1	29	1.75	43.3
9	R	0.49	0.73	23.0	0.83	0.80	4.1	29	2.61	36.7
West: PR-3 W										
10	L	2.05	3.07	57.5	1.00	0.89	7.8	54	7.71	23.2
11	T	12.90	19.34	20.9	0.89	0.84	29.6	207	96.55	38.1
12	R	1.28	1.92	29.6	0.88	0.92	29.2	204	7.17	33.0

Int. PR-3 y PR-193
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 90

Table S.6 - INTERSECTION PERFORMANCE

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 (m)	Perf. Index	Aver. Speed (km/h)
South: PR-193 S									
332	0.790	4.27	6.41	46.3	0.984	0.88	81	17.58	26.3
East: PR-3 E									
1332	0.589	7.52	11.28	20.3	0.773	0.70	132	51.51	38.5
North: PR-193 N									
248	0.803	2.61	3.92	37.9	0.911	0.82	51	11.47	29.3
West: PR-3 W									
2508	0.797	16.22	24.34	23.3	0.895	0.85	207	111.44	36.6
INTERSECTION (persons):									
6630	0.803		45.94	24.9	0.866	0.80		192.00	35.6

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

Int. PR-3 y PR-193
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 90

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Effective Green Times and Red (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)	(m)	Shrt Lane (m)
South: PR-193 S													
1 L	1, 2	77	13	0	0	212	268	0.790	53.8	0.92	11.5	81	
2 TR	2, 3	39	4	34	13	120	241	0.498	33.1	0.82	5.0	35	
East: PR-3 E													
1 L	4	82	8	0	0	97	165	0.589	54.3	0.79	5.9	41	50
2 LT	4, 5	85	5	0	0	48	82	0.589	55.8	0.78	3.4	23	
3 T	5	44	46	0	0	587	997	0.589	16.5	0.67	18.8	132	
4 TR	5, 6	31	46	11	2	600	1018	0.589	15.7	0.70	17.7	124	
North: PR-193 N													
1 L	7, 8	83	7	0	0	116	144	0.803	59.2	0.90	7.3	51	
2 TR	8, 9	32	23	28	7	132	300	0.439	19.2	0.75	4.1	29	
West: PR-3 W													
1 L	10	82	8	0	0	128	165	0.775	57.5	0.89	7.8*	54	50
2 T	10, 11	44	46	0	0	793	997	0.796	21.0	0.84	29.6	207	
3 T	11	44	46	0	0	793	997	0.796	21.0	0.84	29.6	207	
4 TR	11, 12	35	46	8	1	793	997	0.796	22.4	0.86	29.2	204	

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

Int. PR-3 y PR-193
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 90

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	End Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: PR-193 S													
1 L	1, 2	212	0	0	212	3.30	1950	1857	0	0	268	0.790	100
2 TR	2, 3	0	96	24	120	3.30	1950	675	1461	40	241	0.498	63P
East: PR-3 E													
1 L	4	97	0	0	97	3.30	1950	1857	0	0	165	0.589	100
2 LT	4, 5	31	18	0	48	3.30	1950	1479	0	0	82	0.589	100
3 T	5	0	587	0	587	3.30	1950	1950	0	0	997	0.589	100
4 TR	5, 6	0	508	92	600	3.30	1950	1935	1305	40	1018	0.589	100
North: PR-193 N													
1 L	7, 8	116	0	0	116	3.30	1950	1857	0	0	144	0.803	100
2 TR	8, 9	0	56	76	132	3.30	1950	599	1895	40	300	0.439	55P
West: PR-3 W													
1 L	10	128	0	0	128	3.30	1950	1857	0	0	165	0.775	97P
2 T	10, 11	0	793	0	793	3.30	1950	1950	0	0	997	0.796	100
3 T	11	0	793	0	793	3.30	1950	1950	0	0	997	0.796	100
4 TR	11, 12	0	637	156	793	3.30	1950	1931	881	40	997	0.796	100

P Lane under-utilisation found by the "Program"

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

Int. PR-3 y PR-193
Pico AM Base
Intersection ID: 1

Fixed-Time Signals, Cycle Time = 90

Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh /h)	Total Cap. (veh /h)	Lane Util (%)	Deg. Satn x	Eff. Grn 1st Grn	Eff. Grn 2nd Grn	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
South: PR-193 S											
1 L		212	268	100	0.790	13		53.8	0.92	11.5	12.47
2 T		96	193	63	0.498	13		31.3	0.81	5.0	4.04
3 R	(Un2)	24	49	63	0.495	13*	34	40.3	0.84	5.0	1.07
East: PR-3 E											
4 L		128	217	100	0.589	8		55.4	0.79	5.9	7.42
5 T		1112	1889	100	0.589	46		16.1	0.68	18.8	40.56
6 R	(Und)	92	156	100	0.588	46	29	23.1	0.85	17.7	3.52
North: PR-193 N											
7 L		116	144	100	0.803*	7		59.2	0.90	7.3	7.12
8 T		56	127	55	0.439	7		14.0	0.68	4.1	1.75
9 R	(Un1)	76	173	55	0.440	47	7*	23.0	0.80	4.1	2.61
West: PR-3 W											
10 L		128	165	97	0.775	8*		57.5	0.89	7.8	7.71
11 T		2224	2794	100	0.796	46		20.9	0.84	29.6	96.55
12 R	(Un2)	156	196	100	0.797	46*	32	29.6	0.92	29.2	7.17

* Maximum degree of saturation, or critical green periods

Int. PR-3 y PR-193
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 90

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: PR-193 S												
1 L	212			212	0	1950	13		0.790	53.8	81	
2 TR		96	24	120	0	1950	4	13	0.498	33.1	35	
	212	96	24	332	0				0.790	46.3	81	
East: PR-3 E												
1 L	97			97	0	1950	8		0.589	54.3	41	50
2 LT	31	18		48	0	1950	5		0.589	55.8	23	
3 T		587		587	0	1950	46		0.589	16.5	132	
4 TR		508	92	600	0	1950	46	2	0.589	15.7	124	
	128	1112	92	1332	0				0.589	20.3	132	
North: PR-193 N												
1 L	116			116	0	1950	7		0.803	59.2	51	
2 TR		56	76	132	0	1950	23	7	0.439	19.2	29	
	116	56	76	248	0				0.803	37.9	51	
West: PR-3 W												
1 L	128			128	0	1950	8		0.775	57.5	54*	50
2 T		793		793	0	1950	46		0.796	21.0	207	
3 T		793		793	0	1950	46		0.796	21.0	207	
4 TR		637	156	793	0	1950	46	1	0.796	22.4	204	
	128	2224	156	2508	0				0.796	23.3	207	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	4420	0	90	0.803	24.9	207

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

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

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

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

Int. PR-3 y PR-193
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 90

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	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
South: PR-193 S								
1 L		0.144		212	268	0.790	53.8	D
2 T		0.144		96	193	0.498	31.3	C
3 R	(Un2)	0.144*	0.378	24	49	0.495	40.3	D
				332	510	0.790	46.3	D
East: PR-3 E								
4 L		0.089		128	217	0.589	55.4	E
5 T		0.511		1112	1889	0.589	16.1	B
6 R	(Und)	0.511	0.322	92	156	0.588	23.1	C
				1332	2262	0.589	20.3	C
North: PR-193 N								
7 L		0.078		116	144	0.803*	59.2	E
8 T		0.078		56	127	0.439	14.0	B
9 R	(Un1)	0.522	0.078*	76	173	0.440	23.0	C
				248	445	0.803	37.9	D
West: PR-3 W								
10 L		0.089*		128	165	0.775	57.5	E
11 T		0.511		2224	2794	0.796	20.9	C
12 R	(Un2)	0.511*	0.356	156	196	0.797	29.6	C
				2508	3155	0.797	23.3	C
ALL VEHICLES:				4420	6371	0.803	24.9	C
INTERSECTION (persons):				6630	6371	0.803	24.9	

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 aaSIDRA Output Guide or the Output section of the on-line help.

* Maximum v/c ratio, or critical green periods

Pico AM Base
Intersection ID: 1

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.742	140
Average Delay	24.9	90
Stop Rate	0.75	150
Max. Queue for Any Movement	28.8	70
Perf. Index	186.3	70
Cost	1778.4	90

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	6716	140
Prac. Spare Cap.	21	140

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

Int. PR-3 y PR-193
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 90

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
South: PR-193 S						
	East	10.0	18.5	15.7	500	102
	North	S	60.0	28.4	500	106
	West	15.0	22.7	23.6	500	104
East: PR-3 E						
	South	13.1	21.1	20.5	500	104
	North	15.0	22.6	23.6	500	104
	West	S	60.0	17.1	500	106
North: PR-193 N						
	South	S	60.0	28.4	500	106
	East	15.0	22.7	23.6	500	104
	West	10.0	18.5	15.7	500	102
West: PR-3 W						
	South	10.0	18.5	15.7	500	102
	East	S	60.0	17.1	500	106
	North	13.1	21.1	20.5	500	104

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

Int. PR-3 y PR-193
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 90

Table D.1 - LANE DELAYS

Lane No.	Mov No.	Deg. Satn x	Delay (seconds/veh) Stop-line 1st d1	Stop-line 2nd d2	Delay Total dSL	Acc. Dec. dn	Queuing Total dq	Queuing MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: PR-193 S											
1 L	1, 2	0.790	41.8	3.3	45.1	4.5	40.7	1.5	39.2	8.7 0.0	53.8
2 TR	2, 3	0.498	31.3	0.0	31.3	7.3	24.1	0.9	23.2	0.0 9.0	33.1
East: PR-3 E											
1 L	4	0.589	45.2	0.3	45.5	4.2	41.2	0.3	40.9	8.8	54.3
2 LT	4, 5	0.589	49.7	0.4	50.1	5.8	44.3	0.6	43.7	8.8 0.0	55.8
3 T	5	0.589	16.5	0.0	16.5	6.4	10.0	0.0	10.0	0.0	16.5
4 TR	5, 6	0.589	14.4	0.0	14.4	5.9	8.5	0.4	8.2	0.0 8.7	15.7
North: PR-193 N											
1 L	7, 8	0.803	47.3	3.1	50.5	4.5	46.0	2.0	44.1	8.7 0.0	59.2
2 TR	8, 9	0.439	14.0	0.0	14.0	4.9	9.2	0.0	9.2	0.0 9.0	19.2
West: PR-3 W											
1 L	10	0.775	46.2	2.5	48.7	4.2	44.5	1.6	42.9	8.8	57.5
2 T	10, 11	0.796	19.5	1.5	21.0	7.6	13.4	0.2	13.1	0.0 0.0	21.0
3 T	11	0.796	19.5	1.5	21.0	7.6	13.4	0.2	13.1	0.0	21.0
4 TR	11, 12	0.796	19.1	1.6	20.6	6.8	13.8	0.4	13.4	0.0 9.0	22.4

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

---

Int. PR-3 y PR-193
Pico AM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 90

Table D.3 - LANE QUEUES

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: PR-193 S											
1 L	0.790	0.2	5.8	0.3	6.1	7.5	9.1	10.0	11.5	13.0	0.16
2 TR	0.498	0.0	2.2	0.0	2.2	2.8	3.6	4.1	5.0	6.0	0.07
East: PR-3 E											
1 L	0.589	0.0	2.7	0.0	2.7	3.4	4.2	4.8	5.9	6.9	0.82
2 LT	0.589	0.0	1.4	0.0	1.4	1.8	2.3	2.7	3.4	4.0	0.05
3 T	0.589	0.0	11.0	0.0	11.0	13.3	15.8	17.1	18.8	20.5	0.26
4 TR	0.589	0.0	10.3	0.0	10.3	12.4	14.7	16.0	17.7	19.4	0.25
North: PR-193 N											
1 L	0.803	0.1	3.3	0.2	3.5	4.3	5.4	6.1	7.3	8.5	0.10
2 TR	0.439	0.0	1.8	0.0	1.8	2.2	2.9	3.3	4.1	4.9	0.06
West: PR-3 W											
1 L	0.775	0.1	3.6	0.1	3.7	4.7	5.8	6.5	7.8*	9.0*	1.09
2 T	0.796	0.4	17.5	0.7	18.2	21.9	25.6	27.6	29.6	31.7	0.41

3	T	0.796	0.4	17.5	0.7	18.2	21.9	25.6	27.6	29.6	31.7	0.41
4	TR	0.796	0.4	17.2	0.7	17.9	21.5	25.2	27.1	29.2	31.2	0.41

Values printed in this table are back of queue (vehicles).
* Queue length exceeds short lane length due to specification of a percentile queue in the aaSIDRA Configuration File. For calculation of this statistic, you may specify the lane with full length.

Int. PR-3 y PR-193
Pico AM Base
Intersection ID: 1

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Total Veh. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h
60	6021	0.979	-8	35.4	1.06	34.7	209.4	2078.4
70	6052	0.888	1	25.6	0.90	28.8	186.3	1804.7
80	6207	0.842	7	25.6	0.86	31.5	190.9	1800.5
90	6371	0.803	12	24.9	0.80	29.6	192.0	1778.4
100	6465	0.783	15	25.9	0.78	31.0	199.4	1801.5
110	6632	0.785	15	27.1	0.76	32.7	207.3	1832.8
120	6629	0.761	18	28.7	0.76	35.0	217.8	1874.7
130	6678	0.747	21	30.4	0.75	37.4	228.2	1919.3
140	6716	0.742	21	32.1	0.75	39.8	238.7	1962.6
150	6692	0.745	21	33.8	0.75	42.6	249.7	2008.8

--- End of aaSIDRA Output ---

Akcelik & Associates Pty Ltd - aaSIDRA 2.0.3.217

Traffic Consulting Group
TCG Registered User No. M0276
Licence Type: Professional, Multi Computer

Time and Date of Analysis 1:59 PM, 22 Jun 2004

Filename: C:\My Documents\aaSIDRA Projects\Paisajes\01_PR-3 y PR-193_BP.OUT

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1

RUN INFORMATION

Variable cycle time run: "Optimum" cycle time = 80 s

* Basic Parameters:
  Intersection Type: Signalised - Fixed Time
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Specified performance measure for "best" cycle time in variable run - Delay
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile

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

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

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1

DEFAULT PARAMETERS

Default values for some of the important general parameters:
(Default Values File: DEF30.SDF)

1. Basic saturation flow: 1950 tcu/h

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

2. Through car equivalents for signalised intersections

	LEFT		THROUGH		RIGHT	
	LV	HV	LV	HV	LV	HV
Normal	1.050	1.800	1.000	1.650	1.050	1.800
Restricted	1.250	2.250			1.250	2.250

3. Opposed turn parameters (Signalised intersection)

	Crit. Gap	Fol.up Hdway	Deps at End	% Exit Flow Opposing
Left turns :	4.5	2.6	2.2	0
Right turns:	4.0	2.4	2.5	0

4. Cruise speed= 60 km/h, Approach Distance= 500 m

5. Queue space per vehicle in metres
   Light vehicles: 7.0 Heavy vehicles: 13.0

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

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 80

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
South: PR-193 S								
1	136	0	0	0	0	0	1.00	1.00
2	0	0	92	0	0	0	1.00	1.00
3	0	0	0	0	24	0	1.00	1.00
East: PR-3 E								
4	180	0	0	0	0	0	1.00	1.00
5	0	0	1980	0	0	0	1.00	1.00
6	0	0	0	0	100	0	1.00	1.00
North: PR-193 N								
7	64	0	0	0	0	0	1.00	1.00
8	0	0	100	0	0	0	1.00	1.00
9	0	0	0	0	60	0	1.00	1.00
West: PR-3 W								
10	116	0	0	0	0	0	1.00	1.00
11	0	0	1792	0	0	0	1.00	1.00
12	0	0	0	0	192	0	1.00	1.00

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

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 80

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	PHASE MATRIX First Green Fr	To	Op	Pr	PHASE MATRIX Second Green Fr	To	Op	Pr	Lost Tim 1st Grn	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
South: PR-193 S															
1 L		C	D							4		10.5		8	
2 T		C	D							4		10.0Min		8	
3 R	(Un2)*C	D				D	C	R		4	27	10.5	55.4	8	41
East: PR-3 E															
4 L	*A	B								4		12.6		11	
5 T	*B	C								4		35.3		38	

6	R	(Und)	B	C		C	B	R	4	10	36.3	30.0Min	38	28
North: PR-193 N														
7	L		D	A					4		10.0Min		7	
8	T		D	A					4		10.0Min		7	
9	R	(Un1)	A	D	R	*D	A		31	4	45.2	10.0Min	38	7
West: PR-3 W														
10	L		A	B					4		10.0Min		11	
11	T		B	C					4		34.1		38	
12	R	(Un2)	B	C		C	B	R	4	12	34.4	30.0Min	38	26

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

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

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

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 80

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.		Dem Flow (veh /h)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: PR-193 S											
1	L	136	1857		0.073		186	0.90	23	100	0.732
2	T	92	1465		0.063		147	0.90	43	86	0.628
3	R	24	0	75	0.073	0.319	39	0.90	45	86	0.623
East: PR-3 E											
4	L	180	1857		0.097		255	0.90	28	95	0.705
5	T	1980	5615		0.353		2667	0.90	21	100	0.742
6	R	100	231	71	0.433	0.000	135	0.90	21	100	0.743*
North: PR-193 N											
7	L	64	1419		0.045		124	0.90	75	100	0.515
8	T	100	2217		0.045		194	0.90	75	100	0.515
9	R	60	144	547	0.160	0.068	116	0.90	74	100	0.516
West: PR-3 W											
10	L	116	1857		0.062		255	0.90	98	64	0.454
11	T	1792	5294		0.338		2515	0.90	26	100	0.713
12	R	192	530	54	0.362	0.000	269	0.90	26	100	0.713

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 80

Table S.3 - INTERSECTION PARAMETERS

Crit Mov No.	App. & Turn	Green Period	Phases Fr	Phases To	Adjusted Lost Time	Adjusted Flow Ratio	Required Grn Time Ratio	Required Movement Time
4	E_L		A	B	4	0.097	0.108	12.6
5	E_T		B	C	4	0.353	0.392	35.3
3	S_R	1st	C	D	4	0.073	0.081	10.5
9	N_R	2nd	D	A	10	-	-	10.0Min
				Total:	22	0.523	0.581	68.5

- 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
40	150	52	80

(Variable cycle times: Program-determined)

Intersection Level of Service	=	C
Worst movement Level of Service	=	D
Average intersection delay (s)	=	21.9
Largest average movement delay (s)	=	50.6
Largest back of queue, 95% (m)	=	157
Performance Index	=	193.27
Degree of saturation (highest)	=	0.743
Practical Spare Capacity (lowest)	=	21 %
Total vehicle capacity, all lanes (veh/h)	=	6902
Total vehicle flow (veh/h)	=	4836
Total person flow (pers/h)	=	7254
Total vehicle delay (veh-h/h)	=	29.42
Total person delay (pers-h/h)	=	44.14
Total effective vehicle stops (veh/h)	=	3845
Total effective person stops (pers/h)	=	5768
Total vehicle travel (veh-km/h)	=	2930.2
Total cost ($/h)	=	1856.48
Total fuel (L/h)	=	349.6
Total CO2 (kg/h)	=	873.97

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 80

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Grn+Intgrn Prop.
A	0	4	11	15	0.188
B	15	19	38	42	0.525
C	57	61	8	12	0.150
D	69	73	7	11	0.138

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

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 80

Table S.5 - MOVEMENT PERFORMANCE

Mov No.		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 (m)	Perf. Index	Aver. Speed (km/h)
South: PR-193 S										
1	L	1.91	2.87	50.6	1.00	0.87	7.3	51	7.43	25.0

2	T	0.66	0.99	25.9	0.99	0.84	4.5	32	3.60	35.0
3	R	0.23	0.35	34.9	0.99	0.84	4.5	32	1.00	30.5
East: PR-3 E										
4	L	2.37	3.56	47.4	1.00	0.87	8.9	63	9.50	26.0
5	T	9.95	14.92	18.1	0.87	0.79	22.5	157	76.74	40.1
6	R	0.71	1.06	25.5	0.86	0.89	21.6	152	4.04	35.2
North: PR-193 N										
7	L	0.87	1.31	48.9	0.99	0.77	4.7	33	3.36	25.5
8	T	0.59	0.89	21.2	0.94	0.76	4.7	33	3.58	37.9
9	R	0.42	0.63	25.3	0.93	0.81	4.2	30	2.09	35.3
West: PR-3 W										
10	L	1.44	2.16	44.6	0.96	0.78	5.8	41	5.78	26.9
11	T	8.87	13.30	17.8	0.85	0.77	21.1	148	68.37	40.3
12	R	1.40	2.11	26.3	0.84	0.89	20.4	143	7.78	34.7

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 80

Table S.6 - INTERSECTION PERFORMANCE

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 (m)	Perf. Index	Aver. Speed (km/h)
South: PR-193 S									
252	0.732	2.81	4.21	40.1	0.998	0.86	51	12.03	28.5
East: PR-3 E									
2260	0.743	13.03	19.54	20.8	0.880	0.80	157	90.28	38.2
North: PR-193 N									
224	0.516	1.88	2.82	30.2	0.959	0.77	33	9.02	32.7
West: PR-3 W									
2100	0.713	11.71	17.56	20.1	0.858	0.78	148	81.93	38.7
INTERSECTION (persons):									
7254	0.743		44.14	21.9	0.880	0.80		193.27	37.4

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

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 80

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Effective Green R1	Red and Times (sec) G1	R2	G2	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue Back (m)	Shrt Lane (m)
South: PR-193 S													
1 L	1, 2	72	8	0	0	136	186	0.732	50.6	0.87	7.3	51	
2 TR	2, 3	27	4	41	8	116	185	0.628	27.8	0.84	4.5	32	
East: PR-3 E													
1 L	4	69	11	0	0	180	255	0.705	47.4	0.87	8.9*	63	50
2 T	4, 5	42	38	0	0	688	926	0.742	18.7	0.79	22.5	157	
3 T	5	42	38	0	0	688	926	0.742	18.7	0.79	22.5	157	
4 TR	5, 6	30	38	10	2	705	949	0.742	18.0	0.81	21.6	152	
North: PR-193 N													
1 LT	7, 8	73	7	0	0	85	164	0.516	46.8	0.77	4.7	33	
2 TR	8, 9	31	12	30	7	139	270	0.516	20.1	0.78	4.2	30	
West: PR-3 W													
1 L	10	69	11	0	0	116	255	0.454	44.6	0.78	5.8	41	50
2 T	10, 11	42	38	0	0	660	926	0.713	18.0	0.77	21.1	148	
3 T	11	42	38	0	0	660	926	0.713	18.0	0.77	21.1	148	
4 TR	11, 12	28	38	12	2	664	931	0.713	19.9	0.81	20.4	143	

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

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 80

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	End Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: PR-193 S													
1 L	1, 2	136	0	0	136	3.30	1950	1857	0	0	186	0.732	100
2 TR	2, 3	0	92	24	116	3.30	1950	704	1495	45	185	0.628	86P
East: PR-3 E													
1 L	4	180	0	0	180	3.30	1950	1857	0	0	255	0.705	95P
2 T	4, 5	0	688	0	688	3.30	1950	1950	0	0	926	0.742	100
3 T	5	0	688	0	688	3.30	1950	1950	0	0	926	0.742	100
4 TR	5, 6	0	605	100	705	3.30	1950	1936	1190	45	949	0.742	100
North: PR-193 N													
1 LT	7, 8	64	21	0	85	3.30	1950	1879	0	0	164	0.516	100
2 TR	8, 9	0	79	60	139	3.30	1950	687	1909	45	270	0.516	100
West: PR-3 W													
1 L	10	116	0	0	116	3.30	1950	1857	0	0	255	0.454	64P
2 T	10, 11	0	660	0	660	3.30	1950	1950	0	0	926	0.713	100
3 T	11	0	660	0	660	3.30	1950	1950	0	0	926	0.713	100
4 TR	11, 12	0	472	192	664	3.30	1950	1922	733	45	931	0.713	100

P Lane under-utilisation found by the "Program"

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

Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 80

Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh /h)	Total Cap. (veh /h)	Lane Util (%)	Deg. Satn x	Eff. Grn 1st Grn	Eff. Grn 2nd Grn	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
South: PR-193 S											
1 L		136	186	100	0.732	8		50.6	0.87	7.3	7.43
2 T		92	147	86	0.628	8		25.9	0.84	4.5	3.60
3 R	(Un2)	24	39	86	0.623	8*	41	34.9	0.84	4.5	1.00
East: PR-3 E											
4 L		180	255	95	0.705	11*		47.4	0.87	8.9	9.50
5 T		1980	2667	100	0.742	38*		18.1	0.79	22.5	76.74
6 R	(Und)	100	135	100	0.743*	38	28	25.5	0.89	21.6	4.04
North: PR-193 N											
7 L		64	124	100	0.515	7		48.9	0.77	4.7	3.36
8 T		100	194	100	0.515	7		21.2	0.76	4.7	3.58
9 R	(Un1)	60	116	100	0.516	38	7*	25.3	0.81	4.2	2.09
West: PR-3 W											
10 L		116	255	64	0.454	11		44.6	0.78	5.8	5.78
11 T		1792	2515	100	0.713	38		17.8	0.77	21.1	68.37
12 R	(Un2)	192	269	100	0.713	38	26	26.3	0.89	20.4	7.78

* Maximum degree of saturation, or critical green periods

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 80

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: PR-193 S												
1 L	136			136	0	1950	8		0.732	50.6	51	
2 TR		92	24	116	0	1950	4	8	0.628	27.8	32	
	136	92	24	252	0				0.732	40.1	51	
East: PR-3 E												
1 L	180			180	0	1950	11		0.705	47.4	63*	50
2 T		688		688	0	1950	38		0.742	18.7	157	
3 T		688		688	0	1950	38		0.742	18.7	157	
4 TR		605	100	705	0	1950	38	2	0.742	18.0	152	
	180	1980	100	2260	0				0.742	20.8	157	
North: PR-193 N												
1 LT	64	21		85	0	1950	7		0.516	46.8	33	
2 TR		79	60	139	0	1950	12	7	0.516	20.1	30	
	64	100	60	224	0				0.516	30.2	33	
West: PR-3 W												
1 L	116			116	0	1950	11		0.454	44.6	41	50
2 T		660		660	0	1950	38		0.713	18.0	148	
3 T		660		660	0	1950	38		0.713	18.0	148	
4 TR		472	192	664	0	1950	38	2	0.713	19.9	143	
116	1792	192	2100	0					0.713	20.1	148	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	4836	0	80	0.743	21.9	157

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

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

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

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

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 80

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	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
South: PR-193 S								
1 L		0.100		136	186	0.732	50.6	D
2 T		0.100		92	147	0.628	25.9	C
3 R	(Un2)	0.100*	0.512	24	39	0.623	34.9	C
				252	371	0.732	40.1	D
East: PR-3 E								
4 L		0.138*		180	255	0.705	47.4	D
5 T		0.475*		1980	2667	0.742	18.1	B
6 R	(Und)	0.475	0.350	100	135	0.743*	25.5	C
				2260	3057	0.743	20.8	C
North: PR-193 N								
7 L		0.087		64	124	0.515	48.9	D
8 T		0.087		100	194	0.515	21.2	C
9 R	(Un1)	0.475	0.087*	60	116	0.516	25.3	C
				224	434	0.516	30.2	C
West: PR-3 W								
10 L		0.138		116	255	0.454	44.6	D
11 T		0.475		1792	2515	0.713	17.8	B
12 R	(Un2)	0.475	0.325	192	269	0.713	26.3	C
				2100	3039	0.713	20.1	C
ALL VEHICLES:				4836	6902	0.743	21.9	C
INTERSECTION (persons):				7254	6902	0.743	21.9	

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 aaSIDRA Output Guide or the Output section of the on-line help.

* Maximum v/c ratio, or critical green periods

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.732	90
Average Delay	21.9	80
Stop Rate	0.77	90
Max. Queue for Any Movement	22.0	60
Perf. Index	193.0	70
Cost	1856.5	80

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	7157	90
Prac. Spare Cap.	23	90

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

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 80

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
South: PR-193 S						
	East	10.0	18.5	15.7	500	102
	North	S	60.0	28.4	500	106
	West	15.0	22.7	23.6	500	104
East: PR-3 E						
	South	13.1	21.1	20.5	500	104
	North	15.0	22.6	23.6	500	104
	West	S	60.0	17.1	500	106
North: PR-193 N						
	South	S	60.0	28.4	500	106
	East	15.0	22.7	23.6	500	104
	West	10.0	18.5	15.7	500	102
West: PR-3 W						
	South	10.0	18.5	15.7	500	102
	East	S	60.0	17.1	500	106
	North	13.1	21.1	20.5	500	104

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

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 80

Table D.1 - LANE DELAYS

Lane No.	Mov No.	Deg. Satn x	Delay (seconds/veh) 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: PR-193 S											
1 L	1, 2	0.732	40.3	1.7	41.9	4.5	37.5	1.3	36.2	8.7 0.0	50.6
2 TR	2, 3	0.628	25.2	0.8	25.9	7.5	18.4	0.8	17.6	0.0 9.0	27.8
East: PR-3 E											
1 L	4	0.705	37.3	1.3	38.6	4.2	34.4	0.9	33.5	8.8	47.4
2 T	4, 5	0.742	18.4	0.3	18.7	7.5	11.2	0.1	11.1	0.0 0.0	18.7
3 T	5	0.742	18.4	0.3	18.7	7.5	11.2	0.1	11.1	0.0	18.7
4 TR	5, 6	0.742	16.6	0.2	16.8	6.9	9.9	0.4	9.5	0.0 8.7	18.0
North: PR-193 N											
1 LT	7, 8	0.516	40.2	0.0	40.2	5.5	34.8	0.0	34.8	8.7 0.0	46.8
2 TR	8, 9	0.516	16.3	0.0	16.3	6.1	10.2	0.0	10.2	0.0 9.0	20.1
West: PR-3 W											
1 L	10	0.454	35.8	0.0	35.8	4.1	31.7	0.0	31.7	8.8	44.6
2 T	10, 11	0.713	18.0	0.0	18.0	7.3	10.7	0.0	10.7	0.0 0.0	18.0
3 T	11	0.713	18.0	0.0	18.0	7.3	10.7	0.0	10.7	0.0	18.0
4 TR	11, 12	0.713	17.3	0.0	17.3	6.1	11.2	0.4	10.8	0.0 9.0	19.9

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

---

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 80

Table D.3 - LANE QUEUES

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: PR-193 S											
1 L	0.732	0.1	3.4	0.1	3.5	4.4	5.4	6.1	7.3	8.5	0.10
2 TR	0.628	0.0	1.9	0.0	2.0	2.5	3.2	3.7	4.5	5.4	0.06
East: PR-3 E											
1 L	0.705	0.1	4.3	0.1	4.4	5.5	6.8	7.6*	8.9*	10.3*	1.25
2 T	0.742	0.1	13.4	0.1	13.5	16.3	19.2	20.7	22.5	24.3	0.31
3 T	0.742	0.1	13.4	0.1	13.5	16.3	19.2	20.7	22.5	24.3	0.31
4 TR	0.742	0.0	12.8	0.1	12.9	15.6	18.4	19.9	21.6	23.4	0.30
North: PR-193 N											
1 LT	0.516	0.0	2.1	0.0	2.1	2.6	3.3	3.8	4.7	5.6	0.07
2 TR	0.516	0.0	1.8	0.0	1.8	2.3	3.0	3.4	4.2	5.0	0.06
West: PR-3 W											

1	L	0.454	0.0	2.7	0.0	2.7	3.4	4.2	4.8	5.8	6.9	0.82
2	T	0.713	0.0	12.6	0.0	12.6	15.2	17.9	19.4	21.1	22.9	0.30
3	T	0.713	0.0	12.6	0.0	12.6	15.2	17.9	19.4	21.1	22.9	0.30
4	TR	0.713	0.0	12.1	0.0	12.1	14.6	17.3	18.7	20.4	22.2	0.29

Values printed in this table are back of queue (vehicles).
* Queue length exceeds short lane length due to specification of a percentile queue in the aaSIDRA Configuration File. For calculation of this statistic, you may specify the lane with full length.

Int. PR-3 y PR-193
Pico PM Base
Intersection ID: 1

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Total Veh. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h
60	6262	0.842	7	23.9	0.95	22.0	193.8	1928.4
70	6580	0.806	12	22.5	0.86	23.7	193.0	1882.0
80	6902	0.743	21	21.9	0.80	22.5	193.3	1856.5
90	7157	0.732	23	22.7	0.77	23.7	200.4	1876.8
100	7076	0.732	23	24.8	0.77	27.8	213.8	1937.5
110	7024	0.754	19	26.9	0.77	32.2	227.2	1998.5
120	6928	0.799	13	29.3	0.77	37.5	241.8	2069.9
130	6694	0.843	7	30.3	0.77	48.0	252.9	2095.9
140	6448	0.904	0	35.2	0.83	61.0	282.7	2243.2
150	6460	0.873	3	35.2	0.81	60.3	287.7	2241.6

--- End of aaSIDRA Output ---

Akcelik & Associates Pty Ltd - aaSIDRA 2.0.3.217

Traffic Consulting Group
TCG Registered User No. M0276
Licence Type: Professional, Multi Computer

Time and Date of Analysis 1:51 PM, 25 Jun 2004

Filename: C:\My Documents\aaSIDRA Projects\Paisajes\01_PR-3 y PR-193_FA.OUT

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1

RUN INFORMATION

Variable cycle time run: "Optimum" cycle time = 110 s

* Basic Parameters:
  Intersection Type: Signalised - Fixed Time
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Specified performance measure for "best" cycle time in variable run -
    Delay
  Delay definition: Control delay
    Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile

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

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

* Degree of saturation of non-critical movement 1 is
  greater than the critical movement degrees of saturation
  because of one or more of the following reasons:
  - critical movement green times are at minimum
  - adjustment has been applied to the required time of
    a critical movement with two green periods
  - there is insufficient green time available in the cycle.

* Degree of saturation of non-critical movement 7 is
  greater than the critical movement degrees of saturation
  because of one or more of the following reasons:
  - critical movement green times are at minimum
  - adjustment has been applied to the required time of
    a critical movement with two green periods
  - there is insufficient green time available in the cycle.

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1

DEFAULT PARAMETERS

Default values for some of the important general parameters:
(Default Values File: DEF30.SDF)

1. Basic saturation flow: 1950 tcu/h

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

2. Through car equivalents for signalised intersections

	LEFT		THROUGH		RIGHT	
	LV	HV	LV	HV	LV	HV
Normal	1.050	1.800	1.000	1.650	1.050	1.800
Restricted	1.250	2.250			1.250	2.250

3. Opposed turn parameters (Signalised intersection)

	Crit. Gap	Fol.up Hdway	Deps at End	% Exit Flow Opposing
Left turns :	4.5	2.6	2.2	0
Right turns:	4.0	2.4	2.5	0

4. Cruise speed= 60 km/h, Approach Distance= 500 m

5. Queue space per vehicle in metres
   Light vehicles: 7.0 Heavy vehicles: 13.0

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

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 110

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
	LV	HV	LV	HV	LV	HV		
VEHICLES Demand flows in veh/hour as used by the program								
South: PR-193 S								
1	222	0	0	0	0	0	1.00	1.00
2	0	0	100	0	0	0	1.00	1.00
3	0	0	0	0	25	0	1.00	1.00
East: PR-3 E								
4	134	0	0	0	0	0	1.00	1.00
5	0	0	1381	0	0	0	1.00	1.00
6	0	0	0	0	96	0	1.00	1.00
North: PR-193 N								
7	121	0	0	0	0	0	1.00	1.00
8	0	0	59	0	0	0	1.00	1.00
9	0	0	0	0	79	0	1.00	1.00
West: PR-3 W								
10	134	0	0	0	0	0	1.00	1.00
11	0	0	2611	0	0	0	1.00	1.00
12	0	0	0	0	163	0	1.00	1.00

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

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 110

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	PHASE MATRIX First Green Fr	To	Op	Pr	Second Green Fr	To	Op	Pr	Lost Tim 1st Grn	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
South: PR-193 S															
1 L		C	D							4		18.6		15	
2 T		C	D							4		13.3		15	
3 R	(Un2)	*C	D			D	C	R		4	55	18.6	77.2	15	36
East: PR-3 E															
4 L		A	B							4		11.4		10	
5 T		B	C							4		49.3		61	
6 R	(Und)	B	C			C	B	R		4	15	51.4	30.0Min	61	30
North: PR-193 N															
7 L		D	A							4		12.0		8	
8 T		D	A							4		10.0Min		8	
9 R	(Un1)	A	D	R		*D	A			46	4	62.9	12.0	52	8
West: PR-3 W															
10 L		*A	B							4		12.8		10	
11 T		B	C							4		62.0		61	
12 R	(Un2)	*B	C			C	B	R		4	11	62.0	43.9	61	34

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

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

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

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 110

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Dem Flow (veh /h)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: PR-193 S										
1 L	222	1857		0.120		253	0.90	3	100	0.877
2 T	100	1314		0.076		179	0.90	61	64	0.558
3 R	25	0	137	0.120	0.182	45	0.90	62	64	0.556
East: PR-3 E										
4 L	134	2204		0.061		200	0.90	35	100	0.669
5 T	1381	3724		0.371		2065	0.90	35	100	0.669
6 R	96	227	65	0.423	0.000	144	0.90	35	100	0.668
North: PR-193 N										
7 L	121	1857		0.065		135	0.90	0	100	0.896*
8 T	59	1536		0.038		112	0.90	70	59	0.528
9 R	79	193	802	0.139	0.065	150	0.90	70	59	0.528
West: PR-3 W										
10 L	134	1857		0.072		169	0.90	13	93	0.794
11 T	2611	5502		0.475		3051	0.90	5	100	0.856
12 R	163	331	22	0.475	0.269	190	0.90	5	100	0.856

Degree of saturation of non-critical movement 1 is greater than the critical movement degrees of saturation because of one or more of the following reasons:
- critical movement green times are at minimum
- adjustment has been applied to the required time of a critical movement with two green periods
- there is insufficient green time available in the cycle.

Degree of saturation of non-critical movement 7 is greater than the critical movement degrees of saturation because of one or more of the following reasons:
- critical movement green times are at minimum
- adjustment has been applied to the required time of a critical movement with two green periods
- there is insufficient green time available in the cycle.

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 110

Table S.3 - INTERSECTION PARAMETERS

Crit Mov No.	App. & Turn	Green Period	Phases Fr	Phases To	Adjusted Lost Time	Adjusted Flow Ratio	Required Grn Time Ratio	Required Movement Time
10	W_L		A	B	4	0.072	0.080	12.8
12	W_R	1st	B	C	4	0.475	0.527	62.0
3	S_R	1st	C	D	4	0.120	0.133	18.6
9	N_R	2nd	D	A	4	0.065	0.072	12.0
				Total:	16	0.731	0.813	105.4

Cycle Time:

Minimum	Maximum	Practical	Chosen
40	150	85	110

(Variable cycle times: Program-determined)

Intersection Level of Service	=	C
Worst movement Level of Service	=	E
Average intersection delay (s)	=	30.0
Largest average movement delay (s)	=	75.1
Largest back of queue, 95% (m)	=	308
Performance Index	=	262.19
Degree of saturation (highest)	=	0.896
Practical Spare Capacity (lowest)	=	0 %
Total vehicle capacity, all lanes (veh/h)	=	6693
Total vehicle flow (veh/h)	=	5125
Total person flow (pers/h)	=	7688
Total vehicle delay (veh-h/h)	=	42.73
Total person delay (pers-h/h)	=	64.10
Total effective vehicle stops (veh/h)	=	4345
Total effective person stops (pers/h)	=	6518
Total vehicle travel (veh-km/h)	=	3105.3
Total cost ($/h)	=	2222.04
Total fuel (L/h)	=	389.9
Total CO2 (kg/h)	=	974.75

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 110

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Prop.
A	0	4	10	14	0.127
B	14	18	61	65	0.591
C	79	83	15	19	0.173
D	98	102	8	12	0.109

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

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 110

Table S.5 - MOVEMENT PERFORMANCE

Mov No.		Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% Back (vehs)	(m)	Perf. Index	Aver. Speed (km/h)
South: PR-193 S										
1	L	4.26	6.39	69.1	1.00	0.98	14.7	103	15.91	20.7
2	T	1.23	1.85	44.4	0.97	0.85	6.7	47	5.23	27.0
3	R	0.37	0.56	53.4	0.97	0.87	6.7	47	1.37	24.2
East: PR-3 E										
4	L	2.45	3.67	65.7	1.00	0.82	7.9	55	9.01	21.3
5	T	7.17	10.76	18.7	0.76	0.70	27.2	190	57.86	39.6
6	R	0.70	1.05	26.1	0.75	0.87	26.2	184	4.23	34.9
North: PR-193 N										
7	L	2.52	3.79	75.1	1.00	0.96	9.2	64	8.98	19.5
8	T	0.34	0.51	20.6	0.91	0.76	6.1	42	2.38	38.3
9	R	0.65	0.98	29.6	0.91	0.82	6.1	42	3.40	33.0
West: PR-3 W										
10	L	2.52	3.78	67.7	1.00	0.90	9.4	66	9.28	20.9
11	T	18.93	28.39	26.1	0.92	0.90	44.0	308	135.66	34.9
12	R	1.59	2.39	35.2	0.91	0.96	43.6	305	8.90	30.4

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 110

Table S.6 - INTERSECTION PERFORMANCE

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 (m)	Perf. Index	Aver. Speed (km/h)
South: PR-193 S									
347	0.877	5.87	8.80	60.9	0.990	0.94	103	22.51	22.4
East: PR-3 E									
1611	0.669	10.32	15.47	23.1	0.784	0.72	190	71.09	36.7
North: PR-193 N									
259	0.896	3.51	5.27	48.8	0.954	0.87	64	14.75	25.6
West: PR-3 W									
2908	0.856	23.04	34.56	28.5	0.923	0.90	308	153.84	33.6
INTERSECTION (persons):									
7688	0.896			64.10	30.0	0.886	0.85	262.19	32.9

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

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 110

Table S.7 - LANE PERFORMANCE

Lane No.	Mov 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)	(m)	Shrt Lane (m)
South: PR-193 S													
1 L	1, 2	95	15	0	0	222	253	0.877	69.1	0.98	14.7	103	
2 TR	2, 3	55	4	36	15	125	224	0.558	46.2	0.86	6.7	47	
East: PR-3 E													
1 L	4	100	10	0	0	113	169	0.669	64.5	0.83	7.9*	55	50
2 LT	4, 5	106	4	0	0	43	65	0.669	67.7	0.79	3.7	26	
3 T	5	49	61	0	0	723	1081	0.669	18.4	0.70	27.2	190	
4 TR	5, 6	32	61	15	2	732	1094	0.669	18.6	0.73	26.2	184	
North: PR-193 N													
1 L	7, 8	102	8	0	0	121	135	0.896	75.1	0.96	9.2	64	
2 TR	8, 9	46	25	31	8	138	261	0.528	25.8	0.79	6.1	42	
West: PR-3 W													
1 L	10	100	10	0	0	134	169	0.794	67.7	0.90	9.4*	66	50
2 T	10, 11	49	61	0	0	925	1081	0.856	26.1	0.90	44.0	308	
3 T	11	49	61	0	0	925	1081	0.856	26.1	0.90	44.0	308	
4 TR	11, 12	37	61	11	1	923	1079	0.856	27.8	0.92	43.6	305	

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

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 110

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	End Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: PR-193 S													
1 L	1, 2	222	0	0	222	3.30	1950	1857	0	0	253	0.877	100
2 TR	2, 3	0	100	25	125	3.30	1950	676	1463	33	224	0.558	64P
East: PR-3 E													

1 L	4	113	0	0	113	3.30	1950	1857	0	0	169	0.669	100
2 LT	4, 5	21	22	0	43	3.30	1950	1782	0	0	65	0.669	100
3 T	5	0	723	0	723	3.30	1950	1950	0	0	1081	0.669	100
4 TR	5, 6	0	636	96	732	3.30	1950	1937	1087	33	1094	0.669	100
North: PR-193 N													
1 L	7, 8	121	0	0	121	3.30	1950	1857	0	0	135	0.896	100
2 TR	8, 9	0	59	79	138	3.30	1950	543	1896	33	261	0.528	59P
West: PR-3 W													
1 L	10	134	0	0	134	3.30	1950	1857	0	0	169	0.794	93P
2 T	10, 11	0	925	0	925	3.30	1950	1950	0	0	1081	0.856	100
3 T	11	0	925	0	925	3.30	1950	1950	0	0	1081	0.856	100
4 TR	11, 12	0	760	163	923	3.30	1950	1933	772	33	1079	0.856	100

P Lane under-utilisation found by the "Program"

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

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 110

Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh /h)	Total Cap. (veh /h)	Lane Util (%)	Deg. Satn x	Eff. Grn 1st Grn	Eff. Grn 2nd Grn	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
South: PR-193 S											
1 L		222	253	100	0.877	15		69.1	0.98	14.7	15.91
2 T		100	179	64	0.558	15		44.4	0.85	6.7	5.23
3 R	(Un2)	25	45	64	0.556	15*	36	53.4	0.87	6.7	1.37
East: PR-3 E											
4 L		134	200	100	0.669	10		65.7	0.82	7.9	9.01
5 T		1381	2065	100	0.669	61		18.7	0.70	27.2	57.86
6 R	(Und)	96	144	100	0.668	61	30	26.1	0.87	26.2	4.23
North: PR-193 N											
7 L		121	135	100	0.896*	8		75.1	0.96	9.2	8.98
8 T		59	112	59	0.528	8		20.6	0.76	6.1	2.38
9 R	(Un1)	79	150	59	0.528	52	8*	29.6	0.82	6.1	3.40
West: PR-3 W											
10 L		134	169	93	0.794	10*		67.7	0.90	9.4	9.28
11 T		2611	3051	100	0.856	61		26.1	0.90	44.0	135.66
12 R	(Un2)	163	190	100	0.856	61*	34	35.2	0.96	43.6	8.90

* Maximum degree of saturation, or critical green periods

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 110

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: PR-193 S												
1 L	222			222	0	1950	15		0.877	69.1	103	
2 TR		100	25	125	0	1950	4	15	0.558	46.2	47	
	222	100	25	347	0				0.877	60.9	103	
East: PR-3 E												
1 L	113			113	0	1950	10		0.669	64.5	55*	50
2 LT	21	22		43	0	1950	4		0.669	67.7	26	
3 T		723		723	0	1950	61		0.669	18.4	190	
4 TR		636	96	732	0	1950	61	2	0.669	18.6	184	
	134	1381	96	1611	0				0.669	23.1	190	
North: PR-193 N												
1 L	121			121	0	1950	8		0.896	75.1	64	
2 TR		59	79	138	0	1950	25	8	0.528	25.8	42	
	121	59	79	259	0				0.896	48.8	64	
West: PR-3 W												
1 L	134			134	0	1950	10		0.794	67.7	66*	50
2 T		925		925	0	1950	61		0.856	26.1	308	
3 T		925		925	0	1950	61		0.856	26.1	308	
4 TR		760	163	923	0	1950	61	1	0.856	27.8	305	
	134	2611	163	2908	0				0.856	28.5	308	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	5125	0	110	0.896	30.0	308

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

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

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

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

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 110

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	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
South: PR-193 S								
1 L		0.136		222	253	0.877	69.1	E
2 T		0.136		100	179	0.558	44.4	D
3 R	(Un2)	0.136*	0.327	25	45	0.556	53.4	D
				347	477	0.877	60.9	E
East: PR-3 E								
4 L		0.091		134	200	0.669	65.7	E
5 T		0.555		1381	2065	0.669	18.7	B

6 R (Und)	0.555	0.273	96	144	0.668	26.1	C
			1611	2409	0.669	23.1	C
North: PR-193 N							
7 L	0.073		121	135	0.896*	75.1	E
8 T	0.073		59	112	0.528	20.6	C
9 R (Un1)	0.473	0.073*	79	150	0.528	29.6	C
			259	396	0.896	48.8	D
West: PR-3 W							
10 L	0.091*		134	169	0.794	67.7	E
11 T	0.555		2611	3051	0.856	26.1	C
12 R (Un2)	0.555*	0.309	163	190	0.856	35.2	D
			2908	3410	0.856	28.5	C
ALL VEHICLES:			5125	6693	0.896	30.0	C
INTERSECTION (persons):			7688	6693	0.896	30.0	

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
aaSIDRA Output Guide or the Output section of the on-line help.
* Maximum v/c ratio, or critical green periods

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.837	140
Average Delay	30.0	110
Stop Rate	0.80	140
Max. Queue for Any Movement	42.9	80
Perf. Index	253.7	80
Cost	2222.0	110

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	6904	140
Prac. Spare Cap.	8	140

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

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 110

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Radius (m)	Speed (km/h)	Dist. (m)	Dist. (m)	Distance (m)
South: PR-193 S						
	East	10.0	18.5	15.7	500	102
	North	S	60.0	28.4	500	106
	West	15.0	22.7	23.6	500	104
East: PR-3 E						
	South	13.1	21.1	20.5	500	104
	North	15.0	22.6	23.6	500	104
	West	S	60.0	17.1	500	106
North: PR-193 N						
	South	S	60.0	28.4	500	106
	East	15.0	22.7	23.6	500	104
	West	10.0	18.5	15.7	500	102
West: PR-3 W						
	South	10.0	18.5	15.7	500	102
	East	S	60.0	17.1	500	106
	North	13.1	21.1	20.5	500	104

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

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 110

Table D.1 - LANE DELAYS

Lane No.	Mov No.	Deg. Satn x	Delay (seconds/veh) Stop-line 1st dl	Stop-line 2nd d2	Delay Total dSL	Acc. Dec. dn	Queuing Total dq	Queuing MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: PR-193 S											
1 L	1, 2	0.877	52.0	8.4	60.4	4.5	55.9	2.3	53.6	8.7 0.0	69.1
2 TR	2, 3	0.558	44.4	0.0	44.4	7.4	37.0	1.3	35.8	0.0 9.0	46.2
East: PR-3 E											
1 L	4	0.669	54.8	0.8	55.7	4.2	51.4	0.6	50.8	8.8	64.5
2 LT	4, 5	0.669	62.6	0.8	63.4	6.5	56.9	1.0	55.9	8.8 0.0	67.7
3 T	5	0.669	18.4	0.0	18.4	6.6	11.9	0.0	11.9	0.0	18.4
4 TR	5, 6	0.669	17.4	0.0	17.4	6.1	11.4	0.4	10.9	0.0 8.7	18.6
North: PR-193 N											
1 L	7, 8	0.896	58.2	8.2	66.4	4.5	61.9	2.8	59.1	8.7 0.0	75.1
2 TR	8, 9	0.528	20.6	0.0	20.6	5.3	15.3	0.0	15.3	0.0 9.0	25.8
West: PR-3 W											
1 L	10	0.794	55.6	3.2	58.9	4.2	54.6	1.6	53.0	8.8	67.7
2 T	10, 11	0.856	22.1	4.0	26.1	7.9	18.2	0.3	17.9	0.0 0.0	26.1
3 T	11	0.856	22.1	4.0	26.1	7.9	18.2	0.3	17.9	0.0	26.1
4 TR	11, 12	0.856	22.1	4.0	26.2	7.1	19.1	0.5	18.5	0.0 9.0	27.8

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

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 110

Table D.3 - LANE QUEUES

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: PR-193 S											
1 L	0.877	0.5	7.4	0.8	8.2	10.0	12.0	13.1	14.7	16.3	0.21
2 TR	0.558	0.0	3.1	0.0	3.1	3.9	4.9	5.5	6.7	7.8	0.09
East: PR-3 E											
1 L	0.669	0.0	3.8	0.0	3.8	4.8	5.9	6.6	7.9*	9.2*	1.11
2 LT	0.669	0.0	1.6	0.0	1.6	2.0	2.6	2.9	3.7	4.4	0.05
3 T	0.669	0.0	16.6	0.0	16.6	20.0	23.5	25.2	27.2	29.2	0.38
4 TR	0.669	0.0	16.0	0.0	16.0	19.2	22.6	24.3	26.2	28.2	0.37
North: PR-193 N											
1 L	0.896	0.3	4.2	0.4	4.6	5.7	7.0	7.8	9.2	10.5	0.13
2 TR	0.528	0.0	2.8	0.0	2.8	3.5	4.4	5.0	6.1	7.1	0.08
West: PR-3 W											
1 L	0.794	0.1	4.6	0.2	4.7	5.9	7.2*	8.0*	9.4*	10.8*	1.32
2 T	0.856	1.1	25.5	1.9	27.5	33.0	38.5	41.2	44.0	46.8	0.62
3 T	0.856	1.1	25.5	1.9	27.5	33.0	38.5	41.2	44.0	46.8	0.62
4 TR	0.856	1.1	25.2	2.0	27.2	32.6	38.1	40.8	43.6	46.4	0.61

Values printed in this table are back of queue (vehicles).
* Queue length exceeds short lane length due to specification of a percentile queue in the aaSIDRA Configuration File. For calculation of this statistic, you may specify the lane with full length.

Int. PR-3 y PR-193
Pico AM Futuro
Intersection ID: 1

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Total Veh. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h
60	6280	1.195	-25	58.8	1.26	54.2	311.1	3153.3
70	6388	1.046	-14	38.4	1.07	45.2	265.1	2506.1
80	6497	0.956	-6	32.6	0.98	42.9	253.7	2318.9
90	6461	0.905	-1	31.7	0.94	44.7	258.2	2283.6
100	6591	0.931	-3	30.6	0.89	44.8	259.5	2244.5
110	6693	0.896	0	30.0	0.85	44.0	262.2	2222.0
120	6765	0.869	4	30.8	0.83	46.6	271.0	2242.2
130	6678	0.875	3	34.2	0.85	55.0	292.2	2348.1
140	6904	0.837	8	32.6	0.80	50.1	288.3	2294.6
150	6901	0.853	6	35.4	0.81	56.6	306.8	2383.3

--- End of aaSIDRA Output ---

Akcelik & Associates Pty Ltd - aaSIDRA 2.0.3.217

Traffic Consulting Group
TCG Registered User No. M0276
Licence Type: Professional, Multi Computer

Time and Date of Analysis 1:55 PM, 25 Jun 2004

Filename: C:\My Documents\aaSIDRA Projects\Paisajes\01_PR-3 y PR-193_FP.OUT

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1

RUN INFORMATION

Variable cycle time run: "Optimum" cycle time = 100 s

* Basic Parameters:
  Intersection Type: Signalised - Fixed Time
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Specified performance measure for "best" cycle time in variable run - Delay
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile

* No. of Main (Timing-Capacity) Iterations = 3
  Comparison of last two iterations:
  Difference in intersection degree of satn = 0.0 %
  Difference in total vehicle capacity = 1.7 %
  Largest difference in eff. green times = 1 secs
  (max. value for stopping = 1 secs)
  Information on Previous Iteration:
  Cycle Time = 100
  Phase Times: 0, 17, 77, 90
  Critical Movements: 4, 5, 3(1st), 9(2nd)

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

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1

DEFAULT PARAMETERS

Default values for some of the important general parameters:
(Default Values File: DEF30.SDF)

1. Basic saturation flow: 1950 tcu/h

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

2. Through car equivalents for signalised intersections

	LEFT		THROUGH		RIGHT	
	LV	HV	LV	HV	LV	HV
Normal	1.050	1.800	1.000	1.650	1.050	1.800
Restricted	1.250	2.250			1.250	2.250

3. Opposed turn parameters (Signalised intersection)

	Crit. Gap	Fol.up Hdway	Deps at End	% Exit Flow Opposing
Left turns :	4.5	2.6	2.2	0
Right turns:	4.0	2.4	2.5	0

4. Cruise speed= 60 km/h, Approach Distance= 500 m

5. Queue space per vehicle in metres
   Light vehicles: 7.0 Heavy vehicles: 13.0

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

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 100

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
	LV	HV	LV	HV	LV	HV		
VEHICLES Demand flows in veh/hour as used by the program								
South: PR-193 S								
1	142	0	0	0	0	0	1.00	1.00
2	0	0	96	0	0	0	1.00	1.00
3	0	0	0	0	25	0	1.00	1.00
East: PR-3 E								
4	188	0	0	0	0	0	1.00	1.00
5	0	0	2550	0	0	0	1.00	1.00
6	0	0	0	0	105	0	1.00	1.00
North: PR-193 N								
7	67	0	0	0	0	0	1.00	1.00
8	0	0	105	0	0	0	1.00	1.00
9	0	0	0	0	63	0	1.00	1.00
West: PR-3 W								
10	121	0	0	0	0	0	1.00	1.00
11	0	0	2322	0	0	0	1.00	1.00
12	0	0	0	0	201	0	1.00	1.00

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

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 100

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	PHASE MATRIX First Green Fr	To	Op	Pr	Second Green Fr	To	Op	Pr	Lost Tim 1st Grn	2nd Grn	Req.Mov.Time 1st Grn	2nd Grn	Eff. Grn 1st Grn	2nd Grn
South: PR-193 S															
1	L	C	D							4		12.5		9	
2	T	C	D							4		11.8		9	

3	R	(Un2)*C	D		D	C	R	4	40	12.5	80.7	9	47
East: PR-3 E													
4	L	*A	B					4		15.2		12	
5	T	*B	C					4		56.4		56	
6	R	(Und)	B	C	C	B	R	4	13	58.9	30.0Min	56	27
North: PR-193 N													
7	L		D	A				4		10.0Min		7	
8	T		D	A				4		10.0Min		7	
9	R	(Un1)	A	D R	*D	A		46	4	75.2	10.0Min	43	7
West: PR-3 W													
10	L		A	B				4		11.2		12	
11	T		B	C				4		51.9		56	
12	R	(Un2)	B	C	C	B	R	4	14	52.6	30.0Min	56	26

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

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

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

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 100

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.		Dem Flow (veh /h)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: PR-193 S											
1	L	142	1857		0.076		167	0.90	6	100	0.850*
2	T	96	1366		0.070		123	0.90	15	92	0.781
3	R	25	0	68	0.076	0.367	32	0.90	15	92	0.780
East: PR-3 E											
4	L	188	1857		0.101		223	0.90	7	100	0.844
5	T	2550	5410		0.471		3030	0.90	7	100	0.842
6	R	105	194	60	0.541	0.000	125	0.90	7	100	0.841
North: PR-193 N											
7	L	67	1414		0.047		99	0.90	33	100	0.677
8	T	105	2216		0.047		155	0.90	33	100	0.677
9	R	63	127	549	0.263	0.054	93	0.90	33	100	0.677
West: PR-3 W											
10	L	121	1857		0.065		223	0.90	66	70	0.543
11	T	2322	5381		0.432		3013	0.90	17	100	0.771
12	R	201	446	42	0.451	0.000	261	0.90	17	100	0.771

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 100

Table S.3 - INTERSECTION PARAMETERS

Crit Mov No.	App. & Turn	Green Period	Phases Fr	Phases To	Adjusted Lost Time	Adjusted Flow Ratio	Required Grn Time Ratio	Required Movement Time
4	E_L		A	B	4	0.101	0.112	15.2
5	E_T		B	C	4	0.471	0.524	56.4
3	S_R	1st	C	D	4	0.076	0.085	12.5
9	N_R	2nd	D	A	10	-	-	10.0Min
				Total:	22	0.649	0.721	94.1

- 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
40	150	79	100

(Variable cycle times: Program-determined)

Intersection Level of Service	=	C
Worst movement Level of Service	=	E
Average intersection delay (s)	=	25.4
Largest average movement delay (s)	=	65.4
Largest back of queue, 95% (m)	=	274
Performance Index	=	280.02
Degree of saturation (highest)	=	0.850
Practical Spare Capacity (lowest)	=	6 %
Total vehicle capacity, all lanes (veh/h)	=	7544
Total vehicle flow (veh/h)	=	5985
Total person flow (pers/h)	=	8978
Total vehicle delay (veh-h/h)	=	42.18
Total person delay (pers-h/h)	=	63.27
Total effective vehicle stops (veh/h)	=	4998
Total effective person stops (pers/h)	=	7496
Total vehicle travel (veh-km/h)	=	3626.9
Total cost ($/h)	=	2425.79
Total fuel (L/h)	=	442.6
Total CO2 (kg/h)	=	1106.50

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 100

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Grn+Intgrn Prop.
A	0	4	12	16	0.160
B	16	20	56	60	0.600
C	76	80	9	13	0.130
D	89	93	7	11	0.110

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

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 100

Table S.5 - MOVEMENT PERFORMANCE

Mov	Total	Total	Aver.	Prop.	Eff.	Longest Queue	Perf.	Aver.

No.	Delay (veh-h/h)	Delay (pers-h/h)	Delay (sec)	Queued	Stop Rate	95% Back (vehs)	(m)	Index	Speed (km/h)
South: PR-193 S									
1 L	2.58	3.87	65.4	1.00	0.94	9.4	66	9.51	21.4
2 T	1.18	1.77	44.3	1.00	0.93	6.7	47	5.14	27.1
3 R	0.37	0.55	53.3	1.00	0.93	6.7	47	1.40	24.3
East: PR-3 E									
4 L	3.29	4.94	63.0	1.00	0.95	11.7	82	12.39	21.9
5 T	16.05	24.07	22.7	0.87	0.86	39.1	274	120.02	37.0
6 R	0.90	1.35	30.9	0.89	0.96	38.4	269	5.22	32.4
North: PR-193 N									
7 L	1.15	1.73	62.0	1.00	0.82	6.1	43	4.26	22.1
8 T	0.95	1.42	32.4	1.00	0.85	6.6	46	4.94	31.7
9 R	0.63	0.94	35.9	1.00	0.86	6.6	46	2.88	30.1
West: PR-3 W									
10 L	1.86	2.79	55.3	0.98	0.79	7.4	52	7.16	23.7
11 T	11.71	17.56	18.1	0.83	0.77	31.3	219	98.06	40.0
12 R	1.51	2.27	27.1	0.83	0.90	30.6	214	9.04	34.3

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 100

Table S.6 - INTERSECTION PERFORMANCE

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 (m)	Perf. Index	Aver. Speed (km/h)
South: PR-193 S									
263	0.850	4.13	6.19	56.5	1.000	0.94	66	16.05	23.5
East: PR-3 E									
2843	0.844	20.24	30.36	25.6	0.888	0.87	274	137.62	35.2
North: PR-193 N									
235	0.677	2.73	4.09	41.8	1.000	0.85	46	12.09	27.9
West: PR-3 W									
2644	0.771	15.08	22.62	20.5	0.844	0.78	219	114.26	38.3
INTERSECTION (persons):									
8978	0.850		63.27	25.4	0.878	0.84		280.02	35.3

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

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 100

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Effective Green (sec) R1	Red and Times (sec) G1	R2	G2	Dem Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	(m)	Shrt Lane (m)
South: PR-193 S													
1 L	1, 2	91	9	0	0	142	167	0.850	65.4	0.94	9.4	66	
2 TR	2, 3	40	5	46	9	121	155	0.781	46.1	0.93	6.7	47	
East: PR-3 E													
1 L	4	88	12	0	0	188	223	0.844	63.0	0.95	11.7*	82	50
2 T	4, 5	44	56	0	0	806	958	0.842	22.9	0.82	33.0	231	
3 T	5	44	56	0	0	919	1092	0.842	22.9	0.88	39.1	274	
4 TR	5, 6	29	56	13	2	930	1105	0.842	23.2	0.90	38.4	269	
North: PR-193 N													
1 LT	7, 8	93	7	0	0	89	132	0.677	59.9	0.82	6.1	43	
2 TR	8, 9	46	13	34	7	146	216	0.677	30.8	0.86	6.6	46	
West: PR-3 W													
1 L	10	88	12	0	0	121	223	0.543	55.3	0.79	7.4*	52	50
2 T	10, 11	44	56	0	0	841	1092	0.771	18.2	0.77	31.3	219	
3 T	11	44	56	0	0	841	1092	0.771	18.2	0.77	31.3	219	
4 TR	11, 12	29	56	14	1	840	1090	0.771	20.3	0.81	30.6	214	

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

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 100

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	End Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: PR-193 S													
1 L	1, 2	142	0	0	142	3.30	1950	1857	0	0	167	0.850	100
2 TR	2, 3	0	96	25	121	3.30	1950	563	1409	36	155	0.781	92P
East: PR-3 E													
1 L	4	188	0	0	188	3.30	1950	1857	0	0	223	0.844	100
2 T	4, 5	0	806	0	806	3.30	1950	1710	0	0	958	0.842	100
3 T	5	0	919	0	919	3.30	1950	1950	0	0	1092	0.842	100
4 TR	5, 6	0	825	105	930	3.30	1950	1939	958	36	1105	0.842	100
North: PR-193 N													
1 LT	7, 8	67	22	0	89	3.30	1950	1879	0	0	132	0.677	100
2 TR	8, 9	0	83	63	146	3.30	1950	631	1909	36	216	0.677	100
West: PR-3 W													
1 L	10	121	0	0	121	3.30	1950	1857	0	0	223	0.543	70P
2 T	10, 11	0	841	0	841	3.30	1950	1950	0	0	1092	0.771	100
3 T	11	0	841	0	841	3.30	1950	1950	0	0	1092	0.771	100
4 TR	11, 12	0	639	201	840	3.30	1950	1927	1132	36	1090	0.771	100

P Lane under-utilisation found by the "Program"

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

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 100

Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh /h)	Total Cap. (veh /h)	Lane Util (%)	Deg. Satn x	Eff. Grn 1st Grn	Eff. Grn 2nd Grn	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
South: PR-193 S											
1 L		142	167	100	0.850*	9		65.4	0.94	9.4	9.51
2 T		96	123	92	0.781	9		44.3	0.93	6.7	5.14
3 R	(Un2)	25	32	92	0.780	9*	47	53.3	0.93	6.7	1.40
East: PR-3 E											
4 L		188	223	100	0.844	12*		63.0	0.95	11.7	12.39
5 T		2550	3030	100	0.842	56*		22.7	0.86	39.1	120.02
6 R	(Und)	105	125	100	0.841	56	27	30.9	0.96	38.4	5.22
North: PR-193 N											
7 L		67	99	100	0.677	7		62.0	0.82	6.1	4.26
8 T		105	155	100	0.677	7		32.4	0.85	6.6	4.94
9 R	(Un1)	63	93	100	0.677	43	7*	35.9	0.86	6.6	2.88
West: PR-3 W											
10 L		121	223	70	0.543	12		55.3	0.79	7.4	7.16
11 T		2322	3013	100	0.771	56		18.1	0.77	31.3	98.06
12 R	(Un2)	201	261	100	0.771	56	26	27.1	0.90	30.6	9.04

* Maximum degree of saturation, or critical green periods

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 100

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: PR-193 S												
1 L	142			142	0	1950	9		0.850	65.4	66	
2 TR		96	25	121	0	1950	5	9	0.781	46.1	47	
	142	96	25	263	0				0.850	56.5	66	
East: PR-3 E												
1 L	188			188	0	1950	12		0.844	63.0	82*	50
2 T		806		806	0	1950	56		0.842	22.9	231	
3 T		919		919	0	1950	56		0.842	22.9	274	
4 TR		825	105	930	0	1950	56	2	0.842	23.2	269	
	188	2550	105	2843	0				0.844	25.6	274	
North: PR-193 N												
1 LT	67	22		89	0	1950	7		0.677	59.9	43	
2 TR		83	63	146	0	1950	13	7	0.677	30.8	46	
	67	105	63	235	0				0.677	41.8	46	
West: PR-3 W												
1 L	121			121	0	1950	12		0.543	55.3	52*	50
2 T		841		841	0	1950	56		0.771	18.2	219	
3 T		841		841	0	1950	56		0.771	18.2	219	
4 TR		639	201	840	0	1950	56	1	0.771	20.3	214	
	121	2322	201	2644	0				0.771	20.5	219	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	5985	0	100	0.850	25.4	274

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

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

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

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

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 100

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	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
South: PR-193 S								
1 L		0.090		142	167	0.850*	65.4	E
2 T		0.090		96	123	0.781	44.3	D
3 R	(Un2)	0.090*	0.470	25	32	0.780	53.3	D
				263	322	0.850	56.5	E
East: PR-3 E								
4 L		0.120*		188	223	0.844	63.0	E
5 T		0.560*		2550	3030	0.842	22.7	C
6 R	(Und)	0.560	0.270	105	125	0.841	30.9	C
				2843	3377	0.844	25.6	C
North: PR-193 N								
7 L		0.070		67	99	0.677	62.0	E
8 T		0.070		105	155	0.677	32.4	C
9 R	(Un1)	0.430	0.070*	63	93	0.677	35.9	D
				235	347	0.677	41.8	D
West: PR-3 W								
10 L		0.120		121	223	0.543	55.3	E
11 T		0.560		2322	3013	0.771	18.1	B
12 R	(Un2)	0.560	0.260	201	261	0.771	27.1	C
				2644	3497	0.771	20.5	C
ALL VEHICLES:				5985	7544	0.850	25.4	C
INTERSECTION (persons):				8978	7544	0.850	25.4	

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 aaSIDRA Output Guide or the Output section of the on-line help.
* Maximum v/c ratio, or critical green periods

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.842	110
Average Delay	25.4	100
Stop Rate	0.81	120
Max. Queue for Any Movement	35.9	90
Perf. Index	277.3	80
Cost	2425.8	100

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	7676	120
Prac. Spare Cap.	7	110

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

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 100

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
South: PR-193 S						
	East	10.0	18.5	15.7	500	102
	North	S	60.0	28.4	500	106
	West	*15.0*	*22.7*	*23.6*	*500*	*104*
East: PR-3 E						
	South	13.1	21.1	20.5	500	104
	North	15.0	22.6	23.6	500	104
	West	S	60.0	17.1	500	106
North: PR-193 N						
	South	S	60.0	28.4	500	106
	East	15.0	22.7	23.6	500	104
	West	10.0	18.5	15.7	500	102
West: PR-3 W						
	South	10.0	18.5	15.7	500	102
	East	S	60.0	17.1	500	106
	North	13.1	21.1	20.5	500	104

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

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 100

Table D.1 - LANE DELAYS

Lane No.	Mov No.	Deg. Satn x	Delay (seconds/veh): Stop-line 1st d1	Stop-line 2nd d2	Delay Total dSL	Acc. Dec. dn	Queuing Total dq	Queuing MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: PR-193 S											
1 L	1, 2	0.850	51.3	5.4	56.7	4.5	52.2	2.3	49.9	8.7 0.0	65.4
2 TR	2, 3	0.781	39.8	4.5	44.3	7.6	36.7	2.3	34.4	0.0 9.0	46.1
East: PR-3 E											
1 L	4	0.844	48.6	5.6	54.2	4.2	50.0	2.1	47.9	8.8	63.0
2 T	4, 5	0.842	18.1	4.8	22.9	7.1	15.7	0.5	15.2	0.0 0.0	22.9
3 T	5	0.842	19.5	3.3	22.9	7.7	15.2	0.3	14.8	0.0	22.9
4 TR	5, 6	0.842	18.9	3.3	22.2	7.3	14.9	0.7	14.2	0.0 8.7	23.2
North: PR-193 N											
1 LT	7, 8	0.677	52.4	0.9	53.3	5.5	47.8	0.9	47.0	8.7 0.0	59.9
2 TR	8, 9	0.677	25.4	1.5	26.9	6.5	20.4	0.7	19.7	0.0 9.0	30.8
West: PR-3 W											
1 L	10	0.543	46.5	0.0	46.5	4.2	42.3	0.0	42.3	8.8	55.3
2 T	10, 11	0.771	18.2	0.0	18.2	7.2	11.0	0.0	11.0	0.0 0.0	18.2
3 T	11	0.771	18.2	0.0	18.2	7.2	11.0	0.0	11.0	0.0	18.2
4 TR	11, 12	0.771	18.1	0.0	18.1	6.2	11.9	0.4	11.6	0.0 9.0	20.3

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

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Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1
Fixed-Time Signals, Cycle Time = 100

Table D.3 - LANE QUEUES

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh): Nb1	Nb2	Nb	Percentile (veh): 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: PR-193 S											
1 L	0.850	0.2	4.4	0.3	4.8	5.9	7.2	8.1	9.4	10.8	0.13
2 TR	0.781	0.2	2.9	0.2	3.1	3.9	4.9	5.6	6.7	7.9	0.09
East: PR-3 E											
1 L	0.844	0.3	5.8	0.4	6.2	7.6*	9.2*	10.2*	11.7*	13.3*	1.64
2 T	0.842	1.2	18.4	2.0	20.4	24.6	28.7	30.8	33.0	35.3	0.46
3 T	0.842	0.9	22.7	1.6	24.3	29.2	34.1	36.6	39.1	41.6	0.55
4 TR	0.842	0.9	22.2	1.7	23.9	28.7	33.5	35.9	38.4	40.9	0.54

North: PR-193 N											
1 LT	0.677	0.0	2.8	0.0	2.8	3.6	4.4	5.0	6.1	7.2	0.09
2 TR	0.677	0.1	2.9	0.1	3.1	3.8	4.8	5.4	6.6	7.7	0.09
West: PR-3 W											
1 L	0.543	0.0	3.6	0.0	3.6	4.4	5.5	6.2	7.4*	8.7*	1.04
2 T	0.771	0.0	19.3	0.0	19.3	23.2	27.1	29.1	31.3	33.4	0.44
3 T	0.771	0.0	19.3	0.0	19.3	23.2	27.1	29.1	31.3	33.4	0.44
4 TR	0.771	0.0	18.8	0.0	18.8	22.6	26.5	28.5	30.6	32.7	0.43

Values printed in this table are back of queue (vehicles).
* Queue length exceeds short lane length due to specification of a percentile queue in the aaSIDRA Configuration File. For calculation of this statistic, you may specify the lane with full length.

Int. PR-3 y PR-193
Pico PM Futuro
Intersection ID: 1

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Total Veh. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h
60	6393	1.037	-13	53.6	1.33	45.2	364.1	3502.1
70	6913	0.928	-3	32.8	1.08	37.5	296.7	2726.0
80	7235	0.878	2	27.0	0.94	36.5	277.3	2500.0
90	7420	0.860	5	26.0	0.89	35.9	278.5	2456.9
100	7544	0.850	6	25.4	0.84	39.1	280.0	2425.8
110	7564	0.842	7	27.1	0.83	41.3	294.7	2485.8
120	7676	0.856	5	28.5	0.81	48.6	307.4	2535.6
130	7419	0.921	-2	35.1	0.87	64.7	348.4	2777.9
140	7286	0.951	-5	41.6	0.90	83.1	387.2	3014.3
150	6798	1.066	-16	57.7	0.97	130.3	459.6	3598.2

--- End of aaSIDRA Output ---

Akcelik & Associates Pty Ltd - aaSIDRA 2.0.3.217

Traffic Consulting Group
TCG Registered User No. M0276
Licence Type: Professional, Multi Computer

Time and Date of Analysis 4:08 PM, 25 Jun 2004

Filename: C:\My Documents\aaSIDRA Projects\Paisajes\02_PR-3 y PR-194_BA.OUT

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2

RUN INFORMATION

Variable cycle time run: "Optimum" cycle time = 60 s

* Basic Parameters:
  Intersection Type: Signalised - Fixed Time
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Specified performance measure for "best" cycle time in variable run - Delay
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile

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

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

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2

DEFAULT PARAMETERS

Default values for some of the important general parameters:
(Default Values File: DEF30.SDF)

1. Basic saturation flow: 1950 tcu/h

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

2. Through car equivalents for signalised intersections

	LEFT		THROUGH		RIGHT	
	LV	HV	LV	HV	LV	HV
Normal	1.050	1.800	1.000	1.650	1.050	1.800
Restricted	1.250	2.250			1.250	2.250

3. Opposed turn parameters (Signalised intersection)

	Crit. Gap	Fol.up Hdway	Deps at End	% Exit Flow Opposing
Left turns :	4.5	2.6	2.2	0
Right turns:	4.0	2.4	2.5	0

4. Cruise speed= 60 km/h, Approach Distance= 500 m

5. Queue space per vehicle in metres
Light vehicles: 7.0 Heavy vehicles: 13.0

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

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
South: PR-940 S								
1	36	0	0	0	0	0	1.00	1.00
2	0	0	32	0	0	0	1.00	1.00
3	0	0	0	0	24	0	1.00	1.00
East: PR-3 E								
4	160	0	0	0	0	0	1.00	1.00
5	0	0	896	0	0	0	1.00	1.00
6	0	0	0	0	44	0	1.00	1.00
North: PR-194 N								
7	180	0	0	0	0	0	1.00	1.00
8	0	0	292	0	0	0	1.00	1.00
9	0	0	0	0	260	0	1.00	1.00
West: PR-3 W								
10	648	0	0	0	0	0	1.00	1.00
11	0	0	1692	0	0	0	1.00	1.00
12	0	0	0	0	4	0	1.00	1.00

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

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	First Green Fr	To	Op	Pr	Second Green Fr	To	Op	Pr	Lost Tim 1st Grn	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
South: PR-940 S															
1	L	F	G	L						12		12.9		6	
2	T	F	G							4		12.0Min		14	
3	R (Und)	B	F	R		F	B			17	6	10.0Min	22.0Min	15	22
East: PR-3 E															
4	L	*G	B							4		10.0Min		6	
5	T		G	H						4		14.7		17	

6	R	(Un2)	G	H		H	G	R	4	13	15.3	22.0Min	17	26
North: PR-194 N														
7	L			F	G	L			4		12.0Min		14	
8	T			*F	G				4		14.0		14	
9	R	(Und)	G	F	R		F	G	12	6	20.0Min	12.0Min	30	12
West: PR-3 W														
10	L			H	F				4		15.6		17	
11	T			*B	F				4		23.3		28	
12	R	(Un2)	B	F			F	B	R	4	14	23.3	22.0Min	28	14

Current Phase Sequence No.: 3
Input phase sequence: G B H F
Output phase sequence: G B H F

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

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

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.		Dem Flow (veh /h)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: PR-940 S											
1	L	36	2569		0.014		257	0.90	542	100	0.140
2	T	32	979		0.033		228	0.90	542	100	0.140
3	R	24	318	1857	0.000	0.013	760	0.90	2752	100	0.032
East: PR-3 E											
4	L	160	3714		0.043		371	0.90	109	100	0.431
5	T	896	5596		0.160		1586	0.90	59	100	0.565
6	R	44	244	20	0.180	0.000	78	0.90	59	100	0.566
North: PR-194 N											
7	L	180	1688		0.107		394	0.90	97	71	0.457
8	T	292	1950		0.150		455	0.90	40	100	0.642*
9	R	260	1362	1857	0.000	0.140	1052	0.90	264	100	0.247
West: PR-3 W											
10	L	648	3714		0.174		1052	0.90	46	100	0.616
11	T	1692	5836		0.290		2723	0.90	45	100	0.621
12	R	4	13	2	0.308	0.000	7	0.90	47	100	0.612

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.3 - INTERSECTION PARAMETERS

Crit Mov No.	App. & Turn	Green Period Fr	Green Period To	Phases	Adjusted Lost Time	Adjusted Flow Ratio	Required Grn Time Ratio	Required Movement Time
4	E_L	G	B		10	-	-	10.0Min
11	W_T	B	F		4	0.290	0.322	23.3
8	N_T	F	G		4	0.150	0.166	14.0
				Total:	18	0.440	0.489	47.3

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

Cycle Time:

Minimum	Maximum	Practical	Chosen
32	150	35	60

(Variable cycle times: Program-determined)

Intersection Level of Service	=	C
Worst movement Level of Service	=	D
Average intersection delay (s)	=	21.4
Largest average movement delay (s)	=	38.4
Largest back of queue, 95% (m)	=	200
Performance Index	=	157.72
Degree of saturation (highest)	=	0.642
Practical Spare Capacity (lowest)	=	40 %
Total vehicle capacity, all lanes (veh/h)	=	8965
Total vehicle flow (veh/h)	=	4268
Total person flow (pers/h)	=	6402
Total vehicle delay (veh-h/h)	=	25.35
Total person delay (pers-h/h)	=	38.03
Total effective vehicle stops (veh/h)	=	3225
Total effective person stops (pers/h)	=	4838
Total vehicle travel (veh-km/h)	=	2586.7
Total cost ($/h)	=	1624.97
Total fuel (L/h)	=	307.1
Total CO2 (kg/h)	=	767.79

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Grn+Intgrn Prop.
G	0	4	6	10	0.167
B	10	14	7	11	0.183
H	21	25	17	21	0.350
F	42	46	14	18	0.300

Current Phase Sequence No.: 3
Input phase sequence: G B H F
Output phase sequence: G B H F

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.5 - MOVEMENT PERFORMANCE

Mov No.		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 (m)	Perf. Index	Aver. Speed (km/h)
South: PR-940 S										
1	L	0.36	0.53	35.6	0.92	0.72	1.7	12	1.48	30.3
2	T	0.21	0.32	23.9	0.88	0.66	1.7	12	1.16	36.2

3	R	0.08	0.12	11.9	0.42	0.68	0.4	3	0.57	45.1
East: PR-3 E										
4	L	1.70	2.56	38.4	0.98	0.76	3.4	24	6.92	29.2
5	T	5.08	7.61	20.4	0.90	0.77	9.7	68	31.93	38.4
6	R	0.36	0.54	29.5	0.90	0.85	9.5	66	1.68	33.0
North: PR-194 N										
7	L	1.54	2.31	30.8	0.90	0.80	6.3	44	7.05	32.5
8	T	1.91	2.87	23.6	0.95	0.82	9.8	69	11.16	36.4
9	R	0.74	1.12	10.3	0.38	0.71	2.8	20	5.59	46.6
West: PR-3 W										
10	L	5.31	7.97	29.5	0.92	0.83	10.2	71	25.27	33.1
11	T	8.02	12.03	17.1	0.80	0.71	28.6	200	64.69	40.8
12	R	0.04	0.06	34.0	0.80	0.85	28.6	200	0.22	30.9

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.6 - INTERSECTION PERFORMANCE

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 (m)	Perf. Index	Aver. Speed (km/h)
South: PR-940 S									
92	0.140	0.65	0.97	25.4	0.782	0.69	12	3.21	35.3
East: PR-3 E									
1100	0.566	7.14	10.71	23.4	0.915	0.77	68	40.52	36.5
North: PR-194 N									
732	0.642	4.19	6.29	20.6	0.740	0.77	69	23.80	38.2
West: PR-3 W									
2344	0.621	13.37	20.05	20.5	0.837	0.75	200	90.19	38.3
INTERSECTION (persons):									
6402	0.642		38.03	21.4	0.839	0.76		157.72	37.8

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

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.7 - LANE PERFORMANCE

Lane No.	Mov 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)	Queue (m)	Shrt Lane (m)
South: PR-940 S													
1 L	1	54	6	0	0	26	182	0.140	36.9	0.71	1.1	8	
2 LT	1, 2	50	10	0	0	42	303	0.140	26.0	0.68	1.7	12	
3 R	3	17	15	6	22	24	761	0.032	11.9	0.68	0.4	3	
East: PR-3 E													
1 L	4	54	6	0	0	80	186	0.431	38.4	0.76	3.4	24	70
2 L	4	54	6	0	0	80	186	0.431	38.4	0.76	3.4	24	80
3 T	5	43	17	0	0	312	553	0.565	20.4	0.76	9.7	68	
4 T	5	43	17	0	0	312	553	0.565	20.4	0.76	9.7	68	
5 TR	5, 6	29	17	13	1	316	558	0.565	21.7	0.79	9.5	66	
North: PR-194 N													
1 L	7	46	14	0	0	180	394	0.457	30.8	0.80	6.3	44	
2 T	7, 8	46	14	0	0	292	455	0.642	23.6	0.82	9.8	69	
3 R	9	12	30	6	12	260	1053	0.247	10.3	0.71	2.8	20	
West: PR-3 W													
1 L	10	43	17	0	0	324	526	0.616	29.5	0.83	10.2*	71	70
2 L	10	43	17	0	0	324	526	0.616	29.5	0.83	10.2	71	80
3 T	11	32	28	0	0	565	910	0.621	13.1	0.71	14.0	98	
4 T	11	32	28	0	0	565	910	0.621	13.1	0.71	14.0	98	
5 TR	11, 12	17	28	14	1	565	910	0.621	25.1	0.72	28.6	200	

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

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	End Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: PR-940 S													
1 L	1	26	0	0	26	3.30	1950	1825	0	78	182	0.140	100
2 LT	1, 2	10	32	0	42	3.30	1950	1816	0	78	303	0.140	100
3 R	3	0	0	24	24	3.30	1950	318	1857	60	761	0.032	100
East: PR-3 E													
1 L	4	80	0	0	80	3.30	1950	1857	0	0	186	0.431	100
2 L	4	80	0	0	80	3.30	1950	1857	0	0	186	0.431	100
3 T	5	0	312	0	312	3.30	1950	1950	0	0	553	0.565	100
4 T	5	0	312	0	312	3.30	1950	1950	0	0	553	0.565	100
5 TR	5, 6	0	272	44	316	3.30	1950	1936	583	60	558	0.565	100
North: PR-194 N													
1 L	7	180	0	0	180	3.30	1950	1688	0	132	394	0.457	71P
2 T	7, 8	0	292	0	292	3.30	1950	1950	0	0	455	0.642	100
3 R	9	0	0	260	260	3.30	1950	1362	1857	60	1053	0.247	100
West: PR-3 W													
1 L	10	324	0	0	324	3.30	1950	1857	0	0	526	0.616	100
2 L	10	324	0	0	324	3.30	1950	1857	0	0	526	0.616	100
3 T	11	0	565	0	565	3.30	1950	1950	0	0	910	0.621	100
4 T	11	0	565	0	565	3.30	1950	1950	0	0	910	0.621	100
5 TR	11, 12	0	561	4	565	3.30	1950	1949	26	60	910	0.621	100

P Lane under-utilisation found by the "Program"

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

Pico AM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh /h)	Total Cap. (veh /h)	Lane Util (%)	Deg. Satn x	Eff. Grn 1st Grn	Eff. Grn 2nd Grn	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
South: PR-940 S											
1 L		36	257	100	0.140	6		35.6	0.72	1.7	1.48
2 T		32	228	100	0.140	14		23.9	0.66	1.7	1.16
3 R	(Und)	24	760	100	0.032	15	22	11.9	0.68	0.4	0.57
East: PR-3 E											
4 L		160	371	100	0.431	6*		38.4	0.76	3.4	6.92
5 T		896	1586	100	0.565	17		20.4	0.77	9.7	31.93
6 R	(Un2)	44	78	100	0.566	17	26	29.5	0.85	9.5	1.68
North: PR-194 N											
7 L		180	394	71	0.457	14		30.8	0.80	6.3	7.05
8 T		292	455	100	0.642*	14*		23.6	0.82	9.8	11.16
9 R	(Und)	260	1052	100	0.247	30	12	10.3	0.71	2.8	5.59
West: PR-3 W											
10 L		648	1052	100	0.616	17		29.5	0.83	10.2	25.27
11 T		1692	2723	100	0.621	28*		17.1	0.71	28.6	64.69
12 R	(Un2)	4	7	100	0.612	28	14	34.0	0.85	28.6	0.22

* Maximum degree of saturation, or critical green periods

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: PR-940 S												
1 L	26			26	0	1950	6		0.140	36.9	8	
2 LT	10	32		42	0	1950	10		0.140	26.0	12	
3 R			24	24	0	1950	15	22	0.032	11.9	3	
	36	32	24	92	0				0.140	25.4	12	
East: PR-3 E												
1 L	80			80	0	1950	6		0.431	38.4	24	70
2 L	80			80	0	1950	6		0.431	38.4	24	80
3 T		312		312	0	1950	17		0.565	20.4	68	
4 T		312		312	0	1950	17		0.565	20.4	68	
5 TR		272	44	316	0	1950	17	1	0.565	21.7	66	
	160	896	44	1100	0				0.565	23.4	68	
North: PR-194 N												
1 L	180			180	0	1950	14		0.457	30.8	44	
2 T		292		292	0	1950	14		0.642	23.6	69	
3 R			260	260	0	1950	30	12	0.247	10.3	20	
	180	292	260	732	0				0.642	20.6	69	
West: PR-3 W												
1 L	324			324	0	1950	17		0.616	29.5	71*	70
2 L	324			324	0	1950	17		0.616	29.5	71	80
3 T		565		565	0	1950	28		0.621	13.1	98	
4 T		565		565	0	1950	28		0.621	13.1	98	
5 TR		561	4	565	0	1950	28	1	0.621	25.1	200	
	648	1692	4	2344	0				0.621	20.5	200	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	4268	0	60	0.642	21.4	200

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

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

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

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

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	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
South: PR-940 S								
1 L		0.100		36	257	0.140	35.6	D
2 T		0.233		32	228	0.140	23.9	C
3 R	(Und)	0.250	0.367	24	760	0.032	11.9	B
				92	1246	0.140	25.4	C
East: PR-3 E								
4 L		0.100*		160	371	0.431	38.4	D
5 T		0.283		896	1586	0.565	20.4	C
6 R	(Un2)	0.283	0.433	44	78	0.566	29.5	C
				1100	2035	0.566	23.4	C
North: PR-194 N								
7 L		0.233		180	394	0.457	30.8	C
8 T		0.233*		292	455	0.642*	23.6	C
9 R	(Und)	0.500	0.200	260	1052	0.247	10.3	B
				732	1901	0.642	20.6	C
West: PR-3 W								
10 L		0.283		648	1052	0.616	29.5	C
11 T		0.467*		1692	2723	0.621	17.1	B
12 R	(Un2)	0.467	0.233	4	7	0.612	34.0	C
				2344	3782	0.621	20.5	C
ALL VEHICLES:				4268	8965	0.642	21.4	C
INTERSECTION (persons):				6402	8965	0.642	21.4	

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 aaSIDRA Output Guide or the Output section of the on-line help.
* Maximum v/c ratio, or critical green periods

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.618	70
Average Delay	21.4	60
Stop Rate	0.70	120
Max. Queue for Any Movement	28.6	65
Perf. Index	157.7	60
Cost	1625.0	60

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	9172	75
Prac. Spare Cap.	46	70

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

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
South: PR-940 S						
	East	20.0	26.1	31.4	500	109
	North	S	60.0	31.7	500	106
	West	17.1	24.2	26.9	500	105
East: PR-3 E						
	South	14.5	22.3	22.8	500	104
	North	10.0	18.5	15.7	500	102
	West	S	60.0	20.4	500	106
North: PR-194 N						
	South	S	60.0	31.7	500	106
	East	17.1	24.2	26.9	500	105
	West	20.0	26.1	31.4	500	109
West: PR-3 W						
	South	10.0	18.5	15.7	500	102
	East	S	60.0	20.4	500	106
	North	14.5	22.3	22.8	500	104

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

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table D.1 - LANE DELAYS

Lane No.	Mov No.	Deg. Satn x	Delay (seconds/veh) Stop-line 1st d1	Stop-line 2nd d2	Delay Total dSL	Acc. Dec. dn	Queuing Total dq	Queuing MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: PR-940 S											
1 L	1	0.140	28.3	0.0	28.3	4.4	23.9	0.0	23.9	8.6	36.9
2 LT	1, 2	0.140	23.9	0.0	23.9	6.7	17.2	0.0	17.2	8.6 0.0	26.0
3 R	3	0.032	3.6	0.0	3.6	2.1	1.7	0.0	1.7	8.3	11.9
East: PR-3 E											
1 L	4	0.431	29.6	0.0	29.6	4.3	25.3	0.0	25.3	8.7	38.4
2 L	4	0.431	29.6	0.0	29.6	4.3	25.3	0.0	25.3	8.7	38.4
3 T	5	0.565	20.4	0.0	20.4	7.8	12.6	0.0	12.6	0.0	20.4
4 T	5	0.565	20.4	0.0	20.4	7.8	12.6	0.0	12.6	0.0	20.4
5 TR	5, 6	0.565	20.5	0.0	20.5	7.1	13.4	0.4	13.0	0.0 9.0	21.7
North: PR-194 N											
1 L	7	0.457	22.2	0.0	22.2	4.2	18.0	0.0	18.0	8.6	30.8
2 T	7, 8	0.642	23.2	0.3	23.6	8.2	15.4	0.3	15.1	0.0 0.0	23.6
3 R	9	0.247	2.0	0.0	2.0	1.9	0.3	0.0	0.3	8.3	10.3
West: PR-3 W											
1 L	10	0.616	20.8	0.0	20.8	4.1	16.7	0.0	16.7	8.7	29.5
2 L	10	0.616	20.8	0.0	20.8	4.1	16.7	0.0	16.7	8.7	29.5
3 T	11	0.621	13.1	0.0	13.1	6.9	6.2	0.0	6.2	0.0	13.1
4 T	11	0.621	13.1	0.0	13.1	6.9	6.2	0.0	6.2	0.0	13.1
5 TR	11, 12	0.621	25.0	0.0	25.0	6.9	18.2	0.1	18.0	0.0 9.0	25.1

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

---

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table D.3 - LANE QUEUES

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: PR-940 S											
1 L	0.140	0.0	0.4	0.0	0.4	0.6	0.7	0.9	1.1	1.4	0.02
2 LT	0.140	0.0	0.7	0.0	0.7	0.9	1.1	1.3	1.7	2.0	0.02
3 R	0.032	0.0	0.2	0.0	0.2	0.2	0.3	0.3	0.4	0.5	0.01
East: PR-3 E											
1 L	0.431	0.0	1.5	0.0	1.5	1.9	2.4	2.7	3.4	4.1	0.34
2 L	0.431	0.0	1.5	0.0	1.5	1.9	2.4	2.7	3.4	4.1	0.30
3 T	0.565	0.0	4.9	0.0	4.9	6.1	7.5	8.3	9.7	11.1	0.14
4 T	0.565	0.0	4.9	0.0	4.9	6.1	7.5	8.3	9.7	11.1	0.14
5 TR	0.565	0.0	4.8	0.0	4.8	5.9	7.2	8.1	9.5	10.9	0.13

North: PR-194 N											
1 L	0.457	0.0	2.9	0.0	2.9	3.6	4.5	5.2	6.3	7.4	0.09
2 T	0.642	0.0	4.9	0.1	5.0	6.2	7.5	8.4	9.8	11.2	0.14
3 R	0.247	0.0	1.2	0.0	1.2	1.5	1.9	2.2	2.8	3.4	0.04
West: PR-3 W											
1 L	0.616	0.0	5.2	0.0	5.2	6.4	7.9	8.7	10.2*	11.6*	1.02
2 L	0.616	0.0	5.2	0.0	5.2	6.4	7.9	8.7	10.2	11.6*	0.89
3 T	0.621	0.0	7.7	0.0	7.7	9.4	11.3	12.4	14.0	15.6	0.20
4 T	0.621	0.0	7.7	0.0	7.7	9.4	11.3	12.4	14.0	15.6	0.20
5 TR	0.621	0.0	17.6	0.0	17.6	21.1	24.7	26.6	28.6	30.6	0.40

Values printed in this table are back of queue (vehicles).
* Queue length exceeds short lane length due to specification of a percentile queue in the aaSIDRA Configuration File. For calculation of this statistic, you may specify the lane with full length.

Int. PR-3 y PR-194
Pico AM Base
Intersection ID: 2

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Total Veh. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h
60	8965	0.642	40	21.4	0.76	28.6	157.7	1625.0
65	9104	0.630	43	22.2	0.75	28.6	162.2	1645.5
70	9161	0.618	46	23.0	0.74	30.4	167.2	1665.2
75	9172	0.654	38	24.2	0.74	32.2	173.7	1696.2
80	9088	0.642	40	24.9	0.73	34.0	178.3	1713.0
85	9094	0.657	37	26.0	0.73	35.9	184.5	1741.3
90	9090	0.674	34	26.7	0.71	37.7	189.0	1758.1
95	9092	0.681	32	27.9	0.72	39.5	195.4	1787.8
100	9065	0.697	29	29.0	0.72	41.4	201.6	1817.3
105	9085	0.715	26	29.8	0.71	43.2	206.5	1837.1
110	9059	0.716	26	31.0	0.71	45.1	212.9	1868.4
115	9029	0.739	22	32.5	0.71	46.9	220.2	1906.4
120	9050	0.749	20	33.0	0.70	46.9	223.2	1918.3
125	9016	0.749	20	34.6	0.71	50.2	231.2	1959.4
130	8990	0.773	16	36.3	0.71	52.1	238.9	2003.3
135	9006	0.778	16	37.2	0.70	53.9	243.7	2025.4
140	8980	0.779	16	38.7	0.71	53.9	250.1	2065.1
145	8959	0.803	12	40.3	0.71	55.8	257.4	2107.2
150	8950	0.803	12	41.8	0.71	59.5	265.1	2145.2

--- End of aaSIDRA Output ---

Akcelik & Associates Pty Ltd - aaSIDRA 2.0.3.217

Traffic Consulting Group
TCG Registered User No. M0276
Licence Type: Professional, Multi Computer

Time and Date of Analysis 4:30 PM, 25 Jun 2004

Filename: C:\My Documents\aaSIDRA Projects\Paisajes\02_PR-3 y PR-194_BP.OUT

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2

RUN INFORMATION

Variable cycle time run: "Optimum" cycle time = 90 s

* Basic Parameters:
  Intersection Type: Signalised - Fixed Time
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Specified performance measure for "best" cycle time in variable run - Delay
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile

* No. of Main (Timing-Capacity) Iterations = 3
  Comparison of last two iterations:
  Difference in intersection degree of satn = 0.0 %
  Difference in total vehicle capacity = 0.0 %
  Largest difference in eff. green times = 0 secs
  (max. value for stopping = 1 secs)

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

One or more sets of variable run results have been omitted due to unsettled results.

* Phasing reduced by aaSIDRA (phase B deleted)
  See phase matrix (Table S.1)

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2

DEFAULT PARAMETERS

Default values for some of the important general parameters:
(Default Values File: DEF30.SDF)

1. Basic saturation flow: 1950 tcu/h

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

2. Through car equivalents for signalised intersections

	LEFT		THROUGH		RIGHT	
	LV	HV	LV	HV	LV	HV
Normal	1.050	1.800	1.000	1.650	1.050	1.800
Restricted	1.250	2.250			1.250	2.250

3. Opposed turn parameters (Signalised intersection)

	Crit. Gap	Fol.up Hdway	Deps at End	% Exit Flow Opposing
Left turns :	4.5	2.6	2.2	0
Right turns:	4.0	2.4	2.5	0

4. Cruise speed= 60 km/h, Approach Distance= 500 m

5. Queue space per vehicle in metres
   Light vehicles: 7.0 Heavy vehicles: 13.0

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

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 90

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
	LV	HV	LV	HV	LV	HV		
VEHICLES Demand flows in veh/hour as used by the program								
South: PR-940 S								
1	564	0	0	0	0	0	1.00	1.00
2	0	0	420	0	0	0	1.00	1.00
3	0	0	0	0	272	0	1.00	1.00
East: PR-3 E								
4	928	0	0	0	0	0	1.00	1.00
5	0	0	1840	0	0	0	1.00	1.00
6	0	0	0	0	128	0	1.00	1.00
North: PR-194 N								
7	172	0	0	0	0	0	1.00	1.00
8	0	0	184	0	0	0	1.00	1.00
9	0	0	0	0	200	0	1.00	1.00
West: PR-3 W								
10	680	0	0	0	0	0	1.00	1.00
11	0	0	864	0	0	0	1.00	1.00
12	0	0	0	0	60	0	1.00	1.00

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

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 90

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	PHASE MATRIX First Green				PHASE MATRIX Second Green				Lost Tim		Req.Mov.Time		Eff. Grn	
		Fr	To	Op	Pr	Fr	To	Op	Pr	1st Grn	2nd Grn	1st Grn	2nd Grn	1st Grn	2nd Grn
South: PR-940 S															
1 L		F	G	L						11		36.7		23	

2	T	*F	G					4		37.5		30		
3	R	(Und)	H	F	R	F	H	17	6	10.0Min	22.0Min	3	64	
East: PR-3 E														
4	L		G	H				4		39.6		32		
5	LT		G	H				4		37.7		32		
6	R	(Un2)*	G	H		H	G R	4	39	39.6	43.0	32	15	
North: PR-194 N														
7	L		F	G	L			23		30.8		11		
8	T		F	G				4		25.3		30		
9	R	(Und)	G	F	R	F	G	33	6	20.0Min	16.8	23	28	
West: PR-3 W														
10	L		H	F				4		21.8		16		
11	LT		H	F				4		21.1		16		
12	R	(Un2)*	H	F		F	H R	4	31	21.8	72.5	16	39	

Current Phase Sequence No.: 3
Input phase sequence: G B H F
Output phase sequence: G H F

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

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

Phasing reduced by aaSIDRA (phase B deleted)
See phase matrix above

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 90

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.		Dem Flow (veh /h)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: PR-940 S											
1	L	564	2196		0.257		561	0.90	-10	100	1.005*
2	T	420	1254		0.335		418	0.90	-10	100	1.005*
3	R	272	1200	1857	0.000	0.146	1361	0.90	350	100	0.200
East: PR-3 E											
4	L	920	2589<		0.356		921	0.90	-10	100	1.000
5	LT	1848E	5479		0.337		1948	0.90	-5	100	0.948
6	R	128	354	54	0.356	0.040	135	0.90	-5	100	0.949
North: PR-194 N											
7	L	172	2206		0.078		270	0.90	41	100	0.638
8	T	184	865		0.213		288	0.90	41	100	0.638
9	R	200	1623	1857	0.000	0.108	993	0.90	347	100	0.202
West: PR-3 W											
10	L	660	3714		0.178		660	0.90	-10	100	1.000
11	LT	884E	5165		0.171		918	0.90	-6	100	0.962
12	R	60	0	144	0.178	0.415	63	0.90	-6	100	0.959

E "Excess" flow from the short lane of an adjacent movement added to normal flow
< Reduced saturation flow due to a short lane effect

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 90

Table S.3 - INTERSECTION PARAMETERS

Crit Mov No.	App. & Turn	Green Period	Phases Fr	Phases To	Adjusted Lost Time	Adjusted Flow Ratio	Required Grn Time Ratio	Required Movement Time
6	E_R	1st	G	H	4	0.356	0.395	39.6
12	W_R	1st	H	F	4	0.178	0.198	21.8
2	S_T		F	G	4	0.335	0.372	37.5
				Total:	12	0.868	0.965	98.8

Cycle Time:

Minimum	Maximum	Practical	Chosen
32	150	150	90

(Variable cycle times: Program-determined)

Intersection Level of Service	=	D
Worst movement Level of Service	=	F
Average intersection delay (s)	=	53.8
Largest average movement delay (s)	=	80.1
Largest back of queue, 95% (m)	=	255
Performance Index	=	391.04
Degree of saturation (highest)	=	1.005
Practical Spare Capacity (lowest)	=	-10 %
Total vehicle capacity, all lanes (veh/h)	=	8535
Total vehicle flow (veh/h)	=	6312
Total person flow (pers/h)	=	9468
Total vehicle delay (veh-h/h)	=	94.39
Total person delay (pers-h/h)	=	141.59
Total effective vehicle stops (veh/h)	=	6689
Total effective person stops (pers/h)	=	10033
Total vehicle travel (veh-km/h)	=	3823.9
Total cost ($/h)	=	3668.30
Total fuel (L/h)	=	562.0
Total CO2 (kg/h)	=	1405.10

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 90

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Grn+Intgrn Prop.
G	0	4	32	36	0.400
H	36	40	16	20	0.222
F	56	60	30	34	0.378

Phasing reduced by aaSIDRA (phase B deleted)
See phase matrix (Table S.1)
Current Phase Sequence No.: 3
Input phase sequence: G B H F
Output phase sequence: G H F

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 90

Mov No.		Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest 95% Back (vehs)	Queue (m)	Perf. Index	Aver. Speed (km/h)
South: PR-940 S										
1	L	12.54	18.81	80.1	1.00	1.24	34.9	244	44.18	18.7
2	T	8.12	12.18	69.6	1.00	1.25	34.9	244	31.71	20.6
3	R	0.89	1.34	11.8	0.33	0.71	4.6	32	6.76	45.3
East: PR-3 E										
4	L	9.65	14.48	37.7	0.98	0.87	19.4	136	44.78	29.4
5	LT	27.26	40.89	53.1	1.00	1.16	36.4	255	121.26	24.4
6	R	2.40	3.60	67.4	1.00	1.20	36.4	255	8.92	20.9
North: PR-194 N										
7	L	2.40	3.60	50.2	0.99	0.83	11.2	78	9.56	25.2
8	T	1.88	2.82	36.8	0.97	0.81	11.2	78	9.26	29.8
9	R	0.90	1.34	16.1	0.52	0.73	5.1	36	6.04	41.5
West: PR-3 W										
10	L	11.73	17.60	64.0	1.00	1.00	19.4	136	43.48	21.7
11	LT	15.37	23.05	62.6	1.00	1.13	19.8	138	60.73	22.1
12	R	1.26	1.88	75.3	1.00	1.16	16.9	118	4.35	19.5

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 90

Table S.6 - INTERSECTION PERFORMANCE

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 (m)	Perf. Index	Aver. Speed (km/h)
South: PR-940 S									
1256	1.005	21.55	32.33	61.8	0.855	1.13	244	82.66	22.2
East: PR-3 E									
2896	1.000	39.31	58.96	48.9	0.995	1.07	255	174.96	25.6
North: PR-194 N									
556	0.638	5.17	7.76	33.5	0.815	0.79	78	24.87	31.2
West: PR-3 W									
1604	1.000	28.36	42.53	63.6	1.000	1.08	138	108.56	21.8
INTERSECTION (persons):									
9468	1.005		141.59	53.8	0.953	1.06		391.04	24.2

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

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 90

Table S.7 - LANE PERFORMANCE

Lane No.	Mov 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)	Queue (m)	Shrt Lane (m)
South: PR-940 S													
1	L	1	67	23	0	0	431	429	1.005	80.6	1.23	27.6	193
2	LT	1, 2	63	27	0	0	553	550	1.005	71.6	1.25	34.9	244
3	R	3	17	3	6	64	272	1361	0.200	11.8	0.71	4.6	32
East: PR-3 E													
1	L	4	58	32	0	0	437	437	1.000	37.7r	0.86	17.4*	121< 70
2	L	4	58	32	0	0	483	483	1.000	37.7r	0.87	19.4*	136< 80
3	LT	5	58	32	0	0	658	693	0.948	51.0	1.03	36.4	255
4	T	5	58	32	0	0	658	693	0.948	51.0	1.15	36.4	255
5	TR	5, 6	17	32	39	2	660	696	0.948	60.2	1.20	36.4	255
North: PR-194 N													
1	L	7	79	11	0	0	126	198	0.638	52.0	0.83	7.3	51
2	LT	7, 8	72	18	0	0	230	361	0.638	38.5	0.82	11.2	78
3	R	9	33	23	6	28	200	993	0.201	16.1	0.73	5.1	36
West: PR-3 W													
1	L	10	74	16	0	0	330	330	1.000	57.3r	0.93	17.4*	121< 70
2	L	10	74	16	0	0	330	330	1.000	70.6r	1.07	19.4*	136< 80
3	LT	11	74	16	0	0	334	347	0.962	61.4	1.10	19.8	138
4	T	11	74	16	0	0	334	347	0.962	61.4	1.12	19.8	138
5	TR	11, 12	31	2	41	16	276	287	0.962	68.3	1.16	16.9	118

< Short lane capacity is reached and there is excess flow into an adjacent lane
* Queue length exceeds short lane length due to specification of a percentile queue in the aaSIDRA Configuration File. For calculation of this statistic, you may specify the lane with full length.
r Delay, stops and queue length for this lane have been cut down to fit in the queuing space. The amount cut may not be accounted for fully in the adjacent lane performance statistics. You may wish to change the short lane to a full lane to investigate the extent of this effect.

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 90

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	End Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: PR-940 S													
1	L	1	431	0	0	431	3.30	1950	1679	0	52	429	1.005 100
2	LT	1, 2	133	420	0	553	3.30	1950	1833	0	52	550	1.005 100
3	R	3	0	0	272	272	3.30	1950	1200	1857	40	1361	0.200 100
East: PR-3 E													
1	L	4	437	0	0	437	3.30	1950	1230<	0	0	437	1.000 100
2	L	4	483	0	0	483	3.30	1950	1359<	0	0	483	1.000 100
3	LT	5	8E	650	0	658	3.30	1950	1950	0	0	693	0.948 100
4	T	5	0	658	0	658	3.30	1950	1950	0	0	693	0.948 100
5	TR	5, 6	0	532	128	660	3.30	1950	1931	431	40	696	0.948 100
North: PR-194 N													
1	L	7	126	0	0	126	3.30	1950	1616	0	50	198	0.638 100
2	LT	7, 8	46	184	0	230	3.30	1950	1803	0	50	361	0.638 100
3	R	9	0	0	200	200	3.30	1950	1623	1857	40	993	0.201 100
West: PR-3 W													

1 L	10	330	0	0	330	3.30	1950	1857	0	0	330	1.000	100
2 L	10	330	0	0	330	3.30	1950	1857	0	0	330	1.000	100
3 LT	11	20E	314	0	334	3.30	1950	1950	0	0	347	0.962	100
4 T	11	0	334	0	334	3.30	1950	1950	0	0	347	0.962	100
5 TR	11, 12	0	216	60	276	3.30	1950	511	1552	40	287	0.962	100

E "Excess" flow from back of an adjacent short lane
< Reduced saturation flow due to a short lane effect

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.

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 90

Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh /h)	Total Cap. (veh /h)	Lane Util (%)	Deg. Satn x	Eff. Grn 1st Grn	Eff. Grn 2nd Grn	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
South: PR-940 S											
1 L		564	561	100	1.005*	23		80.1	1.24	34.9	44.18
2 T		420	418	100	1.005*	30*		69.6	1.25	34.9	31.71
3 R	(Und)	272	1361	100	0.200	3	64	11.8	0.71	4.6	6.76
East: PR-3 E											
4 L		920	921<	100	1.000	32		37.7	0.87	19.4	44.78
5 LT		1848E	1948	100	0.948	32		53.1	1.16	36.4	121.26
6 R	(Un2)	128E	135	100	0.949	32*	15	67.4	1.20	36.4	8.92
North: PR-194 N											
7 L		172	270	100	0.638	11		50.2	0.83	11.2	9.56
8 T		184	288	100	0.638	30		36.8	0.81	11.2	9.26
9 R	(Und)	200	993	100	0.202	23	28	16.1	0.73	5.1	6.04
West: PR-3 W											
10 L		660	660	100	1.000	16		64.0	1.00	19.4	43.48
11 LT		884E	918	100	0.962	16		62.6	1.13	19.8	60.73
12 R	(Un2)	60E	63	100	0.959	16*	39	75.3	1.16	16.9	4.35

E "Excess" flow from the short lane of an adjacent movement added to normal flow
< Reduced capacity due to a short lane effect
* Maximum degree of saturation, or critical green periods

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 90

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: PR-940 S												
1 L	431			431	0	1950	23		1.005	80.6	193	
2 LT	133	420		553	0	1950	27		1.005	71.6	244	
3 R			272	272	0	1950	3	64	0.200	11.8	32	
	564	420	272	1256	0				1.005	61.8	244	
East: PR-3 E												
1 L	437			437	0	1950	32		1.000	37.7r	121*	70
2 L	483			483	0	1950	32		1.000	37.7r	136*	80
3 LT	483	650		658	0	1950	32		0.948	51.0	255	
4 T		658		658	0	1950	32		0.948	51.0	255	
5 TR		532	128	660	0	1950	32	2	0.948	60.2	255	
	928	1840	128	2896	0				1.000	48.9	255	
North: PR-194 N												
1 L	126			126	0	1950	11		0.638	52.0	51	
2 LT	46	184		230	0	1950	18		0.638	38.5	78	
3 R			200	200	0	1950	23	28	0.201	16.1	36	
	172	184	200	556	0				0.638	33.5	78	
West: PR-3 W												
1 L	330			330	0	1950	16		1.000	57.3r	121*	70
2 L	330			330	0	1950	16		1.000	70.6r	136*	80
3 LT	330	314		334	0	1950	16		0.962	61.4	138	
4 T		334		334	0	1950	16		0.962	61.4	138	
5 TR		216	60	276	0	1950	2	16	0.962	68.3	118	
	680	864	60	1604	0				1.000	63.6	138	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	6312	0	90	1.005	53.8	255

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

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

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

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

r Delay, stops and queue length for this lane have been cut down to fit in the queuing space. The amount cut may not be accounted for fully in the adjacent lane performance statistics. You may wish to change the short lane to a full lane to investigate the extent of this effect.

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 90

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	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
South: PR-940 S								
1 L		0.256		564	561	1.005*	80.1	F
2 T		0.333*		420	418	1.005*	69.6	E
3 R	(Und)	0.033	0.711	272	1361	0.200	11.8	B
				1256	2340	1.005	61.8	E
East: PR-3 E								
4 L		0.356		920	921<	1.000	37.7	D
5 LT		0.356		1848E	1948	0.948	53.1	D
6 R	(Un2)	0.356*	0.167	128E	135	0.949	67.4	E

			2896	3003	1.000	48.9	D
North: PR-194 N							
7	L	0.122	172	270	0.638	50.2	D
8	T	0.333	184	288	0.638	36.8	D
9	R (Und)	0.256 0.311	200	993	0.202	16.1	B
			556	1550	0.638	33.5	C
West: PR-3 W							
10	L	0.178	660	660	1.000	64.0	E
11	LT	0.178	884E	918	0.962	62.6	E
12	R (Un2)	0.178* 0.433	60E	63	0.959	75.3	E
			1604	1641	1.000	63.6	E
ALL VEHICLES:			6312	8535	1.005	53.8	D
INTERSECTION (persons):			9468	8535	1.005	53.8	

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 aaSIDRA Output Guide or the Output section of the on-line help.

< Reduced capacity due to a short lane effect
* Maximum v/c ratio, or critical green periods
E "Excess" flow from the short lane of an adjacent movement added to normal flow

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Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	1.000	85
Average Delay	53.8	90
Stop Rate	1.03	105
Max. Queue for Any Movement	36.2	75
Perf. Index	378.6	75
Cost	3668.3	90

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	9031	70
Prac. Spare Cap.	-10	85

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

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 90

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
South: PR-940 S						
	East	20.0	26.1	31.4	500	109
	North	S	60.0	31.7	500	106
	West	17.1	24.2	26.9	500	105
East: PR-3 E						
	South	14.5	22.3	22.8	500	104
	North	10.0	18.5	15.7	500	102
	West	S	60.0	20.4	500	106
North: PR-194 N						
	South	S	60.0	31.7	500	106
	East	17.1	24.2	26.9	500	105
	West	20.0	26.1	31.4	500	109
West: PR-3 W						
	South	10.0	18.5	15.7	500	102
	East	S	60.0	20.4	500	106
	North	14.5	22.3	22.8	500	104

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

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 90

Table D.1 - LANE DELAYS

Lane No.	Mov No.	Deg. Satn x	Delay (seconds/veh) 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: PR-940 S											
1 L	1	1.005	37.1	35.0	72.1	4.7	67.4	4.7	62.7	8.6	80.6
2 LT	1, 2	1.005	34.5	35.1	69.6	7.6	61.9	4.4	57.5	8.6 0.0	71.6
3 R	3	0.200	3.5	0.0	3.5	1.7	1.9	0.3	1.6	8.3	11.8
East: PR-3 E											
1 L	4	1.000	29.0	0.0	29.0	4.3	24.7	0.0	24.7	8.7	37.7
2 L	4	1.000	29.0	0.0	29.0	4.3	24.7	0.0	24.7	8.7	37.7
3 LT	5	0.948	30.6	20.4	51.0	8.6	42.4	2.8	39.7	0.0	51.0
4 T	5	0.948	30.6	20.4	51.0	8.6	42.4	2.8	39.7	0.0	51.0
5 TR	5, 6	0.948	37.3	21.2	58.4	7.6	50.8	3.8	47.0	0.0 9.0	60.2
North: PR-194 N											
1 L	7	0.638	42.8	0.6	43.5	4.7	38.8	0.5	38.3	8.6	52.0
2 LT	7, 8	0.638	36.6	0.2	36.8	7.6	29.2	0.1	29.1	8.6 0.0	38.5
3 R	9	0.201	7.8	0.0	7.8	2.6	5.4	0.0	5.4	8.3	16.1
West: PR-3 W											
1 L	10	1.000	41.3	7.3	48.6	4.4	44.2	1.1	43.0	8.7	57.3
2 L	10	1.000	41.3	20.5	61.9	4.4	57.5	3.2	54.3	8.7	70.6
3 LT	11	0.962	40.9	20.5	61.4	8.6	52.8	3.9	49.0	0.0	61.4
4 T	11	0.962	40.9	20.5	61.4	8.6	52.8	3.9	49.0	0.0	61.4
5 TR	11, 12	0.962	42.6	23.7	66.3	7.5	58.8	4.8	54.0	0.0 9.0	68.3

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

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 90

Table D.3 - LANE QUEUES

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: PR-940 S											
1 L	1.005	4.0	11.9	5.0	16.9	20.3	23.8	25.6	27.6	29.6	0.39
2 LT	1.005	5.1	15.1	6.5	21.6	26.0	30.4	32.6	34.9	37.2	0.49
3 R	0.200	0.0	2.0	0.0	2.0	2.6	3.3	3.7	4.6	5.5	0.06
East: PR-3 E											
1 L	1.000	4.6	10.0	0.0	10.0	12.1*	14.4*	15.7*	17.4*	19.0*	1.74
2 L	1.000	4.9	11.4	0.0	11.4	13.8*	16.3*	17.7*	19.4*	21.2*	1.70
3 LT	0.948	3.7	17.4	5.2	22.6	27.1	31.7	34.0	36.4	38.7	0.51
4 T	0.948	3.7	17.4	5.2	22.6	27.1	31.7	34.0	36.4	38.7	0.51
5 TR	0.948	3.8	17.2	5.4	22.6	27.2	31.7	34.0	36.4	38.8	0.51
North: PR-194 N											
1 L	0.638	0.0	3.4	0.0	3.5	4.3	5.4	6.1	7.3	8.5	0.10
2 LT	0.638	0.0	5.8	0.0	5.9	7.2	8.8	9.7	11.2	12.7	0.16
3 R	0.201	0.0	2.3	0.0	2.3	2.9	3.7	4.2	5.1	6.1	0.07
West: PR-3 W											
1 L	1.000	2.6	9.2	0.8	10.0	12.1*	14.4*	15.7*	17.4*	19.0*	1.74
2 L	1.000	2.6	9.2	2.2	11.4	13.8*	16.3*	17.7*	19.4*	21.2*	1.70
3 LT	0.962	1.9	9.2	2.4	11.6	14.1	16.6	18.0	19.8	21.5	0.28
4 T	0.962	1.9	9.2	2.4	11.6	14.1	16.6	18.0	19.8	21.5	0.28
5 TR	0.962	1.8	7.4	2.3	9.7	11.8	14.0	15.2	16.9	18.6	0.24

Values printed in this table are back of queue (vehicles).
* Queue length exceeds short lane length due to specification of a percentile queue in the aaSIDRA Configuration File. For calculation of this statistic, you may specify the lane with full length.

Int. PR-3 y PR-194
Pico PM Base
Intersection ID: 2

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Total Veh. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h
90	8535	1.005	-10	53.8	1.06	36.4	391.0	3668.3
95	8604	1.001	-10	53.9	1.04	39.4	395.8	3669.8
100	8643	1.000	-10	58.0	1.05	45.9	416.2	3826.3
105	8621	1.009	-11	56.7	1.03	49.1	415.2	3773.8
110	8626	1.015	-11	59.6	1.03	51.7	430.2	3885.1
115	8566	1.025	-12	62.3	1.04	55.2	445.2	3989.9
120	8564	1.025	-12	64.4	1.04	57.5	456.3	4068.9
125	8549	1.032	-13	67.2	1.04	60.4	471.5	4176.0
130	8536	1.015	-11	67.2	1.03	60.7	477.9	4176.3
135	8514	1.018	-12	69.5	1.04	63.6	491.8	4263.4
140	8499	1.023	-12	72.1	1.04	66.5	506.6	4364.2
145	8480	1.029	-13	74.5	1.04	69.4	520.8	4455.8
150	8466	1.017	-12	74.9	1.04	69.9	530.0	4470.6

One or more sets of variable run results have been omitted due to unsettled results.

--- End of aaSIDRA Output ---

Akcelik & Associates Pty Ltd - aaSIDRA 2.0.3.217

Traffic Consulting Group
TCG Registered User No. M0276
Licence Type: Professional, Multi Computer

Time and Date of Analysis 4:42 PM, 25 Jun 2004

Filename: C:\My Documents\aaSIDRA Projects\Paisajes\02_PR-3 y PR-194_FA.OUT

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2

RUN INFORMATION

Variable cycle time run: "Optimum" cycle time = 60 s

* Basic Parameters:
  Intersection Type: Signalised - Fixed Time
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Specified performance measure for "best" cycle time in variable run - Delay
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile

* No. of Main (Timing-Capacity) Iterations = 3
  Comparison of last two iterations:
  Difference in intersection degree of satn = 1.1 %
  Difference in total vehicle capacity = 0.2 %
  Largest difference in eff. green times = 1 secs
  (max. value for stopping = 1 secs)
  Information on Previous Iteration:
  Cycle Time = 60
  Phase Times: 0, 10, 23, 42
  Critical Movements: 4, 12(1st), 8

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

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2

DEFAULT PARAMETERS

Default values for some of the important general parameters:
(Default Values File: DEF30.SDF)

1. Basic saturation flow: 1950 tcu/h

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

2. Through car equivalents for signalised intersections

	LEFT		THROUGH		RIGHT	
	LV	HV	LV	HV	LV	HV
Normal	1.050	1.800	1.000	1.650	1.050	1.800
Restricted	1.250	2.250			1.250	2.250

3. Opposed turn parameters (Signalised intersection)

	Crit. Gap	Fol.up Hdway	Deps at End	% Exit Flow Opposing
Left turns :	4.5	2.6	2.2	0
Right turns:	4.0	2.4	2.5	0

4. Cruise speed= 60 km/h, Approach Distance= 500 m

5. Queue space per vehicle in metres
   Light vehicles: 7.0 Heavy vehicles: 13.0

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

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
	LV	HV	LV	HV	LV	HV		
VEHICLES	Demand flows in veh/hour as used by the program							
South: PR-940 S								
1	38	0	0	0	0	0	1.00	1.00
2	0	0	33	0	0	0	1.00	1.00
3	0	0	0	0	25	0	1.00	1.00
East: PR-3 E								
4	167	0	0	0	0	0	1.00	1.00
5	0	0	1148	0	0	0	1.00	1.00
6	0	0	0	0	46	0	1.00	1.00
North: PR-194 N								
7	188	0	0	0	0	0	1.00	1.00
8	0	0	305	0	0	0	1.00	1.00
9	0	0	0	0	272	0	1.00	1.00
West: PR-3 W								
10	678	0	0	0	0	0	1.00	1.00
11	0	0	1913	0	0	0	1.00	1.00
12	0	0	0	0	4	0	1.00	1.00

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

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	PHASE MATRIX First Green Fr	To	Op	Pr	Second Green Fr	To	Op	Pr	Lost Tim 1st Grn	2nd Grn	Req.Mov.Time 1st Grn	2nd Grn	Eff. Grn 1st Grn	2nd Grn
South: PR-940 S															
1	L	F	G	L						12		12.9		5	
2	T	F	G							4		12.0Min		13	

3	R	(Und)	B	F	R		F	B		19	6	10.0Min	22.0Min	14	21
East: PR-3 E															
4	L		*G	B						4		10.0Min		6	
5	T			G	H					4		17.6		19	
6	R	(Un2)	G	H			H	G	R	4	13	18.3	22.0Min	19	24
North: PR-194 N															
7	L			F	G	L				4		12.0Min		13	
8	T			*F	G					4		14.4		13	
9	R	(Und)	G	F	R		F	G		14	6	20.0Min	12.0Min	29	11
West: PR-3 W															
10	L			H	F					4		16.2		16	
11	T			B	F					4		25.9		29	
12	R	(Un2)	*B	F			F	B	R	4	14	25.9	23.1	29	13

Current Phase Sequence No.: 3
Input phase sequence: G B H F
Output phase sequence: G B H F

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

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

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.		Dem Flow (veh /h)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: PR-940 S											
1	L	38	2680		0.014		223	0.90	429	100	0.170
2	T	33	895		0.037		194	0.90	429	100	0.170
3	R	25	308	1857	0.000	0.013	722	0.90	2499	100	0.035
East: PR-3 E											
4	L	167	3714		0.045		371	0.90	100	100	0.450
5	T	1148	5638		0.204		1785	0.90	40	100	0.643
6	R	46	203	18	0.227	0.000	71	0.90	40	100	0.644
North: PR-194 N											
7	L	188	1710		0.110		371	0.90	77	70	0.507
8	T	305	1950		0.156		423	0.90	25	100	0.722*
9	R	272	1308	1857	0.000	0.146	973	0.90	222	100	0.280
West: PR-3 W											
10	L	678	3714		0.183		990	0.90	31	100	0.685
11	T	1913	5826		0.328		2816	0.90	32	100	0.679
12	R	4	0	27	0.328	0.136	6	0.90	42	100	0.632

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.3 - INTERSECTION PARAMETERS

Crit Mov No.	App. & Turn	Green Period	Phases Fr	Phases To	Adjusted Lost Time	Adjusted Flow Ratio	Required Grn Time Ratio	Required Movement Time
4	E_L		G	B	10	-	-	10.0Min
12	W_R	1st	B	F	4	0.328	0.365	25.9
8	N_T		F	G	4	0.156	0.174	14.4
				Total:	18	0.485	0.539	50.3

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

Cycle Time:

Minimum	Maximum	Practical	Chosen
32	150	39	60

(Variable cycle times: Program-determined)

Intersection Level of Service	=	C
Worst movement Level of Service	=	D
Average intersection delay (s)	=	21.7
Largest average movement delay (s)	=	38.4
Largest back of queue, 95% (m)	=	240
Performance Index	=	182.79
Degree of saturation (highest)	=	0.722
Practical Spare Capacity (lowest)	=	25 %
Total vehicle capacity, all lanes (veh/h)	=	8945
Total vehicle flow (veh/h)	=	4817
Total person flow (pers/h)	=	7226
Total vehicle delay (veh-h/h)	=	29.06
Total person delay (pers-h/h)	=	43.58
Total effective vehicle stops (veh/h)	=	3765
Total effective person stops (pers/h)	=	5647
Total vehicle travel (veh-km/h)	=	2919.6
Total cost ($/h)	=	1845.14
Total fuel (L/h)	=	349.0
Total CO2 (kg/h)	=	872.42

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Grn+Intgrn Prop.
G	0	4	6	10	0.167
B	10	14	9	13	0.217
H	23	27	16	20	0.333
F	43	47	13	17	0.283

Current Phase Sequence No.: 3
Input phase sequence: G B H F
Output phase sequence: G B H F

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.5 - MOVEMENT PERFORMANCE

Mov No.	Total Delay	Total Delay	Aver. Delay	Prop. Queued	Eff. Stop	Longest Queue 95% Back	Perf. Index	Aver. Speed

		(veh-h/h)	(pers-h/h)	(sec)		Rate	(vehs)	(m)		(km/h)
South: PR-940 S										
1	L	0.39	0.58	36.9	0.94	0.72	1.8	13	1.59	29.8
2	T	0.23	0.35	25.2	0.90	0.67	1.8	13	1.23	35.5
3	R	0.09	0.13	12.8	0.46	0.69	0.5	3	0.62	44.2
East: PR-3 E										
4	L	1.78	2.67	38.4	0.98	0.76	3.6	25	7.23	29.1
5	T	6.31	9.46	19.8	0.91	0.79	11.9	83	41.01	38.9
6	R	0.38	0.56	29.4	0.91	0.87	11.7	82	1.77	33.1
North: PR-194 N										
7	L	1.67	2.50	31.9	0.92	0.81	6.7	47	7.52	31.9
8	T	2.21	3.31	26.0	0.98	0.89	10.7	75	12.33	35.0
9	R	0.83	1.24	11.0	0.43	0.72	3.5	24	6.16	45.9
West: PR-3 W										
10	L	5.96	8.93	31.6	0.95	0.87	11.1	78	27.72	32.0
11	T	9.19	13.78	17.3	0.82	0.74	34.3	240	75.37	40.7
12	R	0.04	0.06	35.0	0.82	0.86	34.3	240	0.23	30.5

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.6 - INTERSECTION PERFORMANCE

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 (m)	Perf. Index	Aver. Speed (km/h)
South: PR-940 S									
96	0.170	0.71	1.06	26.6	0.806	0.70	13	3.44	34.6
East: PR-3 E									
1361	0.644	8.46	12.70	22.4	0.921	0.79	83	50.02	37.1
North: PR-194 N									
765	0.722	4.70	7.05	22.1	0.775	0.81	75	26.01	37.3
West: PR-3 W									
2595	0.685	15.18	22.77	21.1	0.859	0.77	240	103.32	38.0
INTERSECTION (persons):									
7226	0.722		43.58	21.7	0.862	0.78		182.79	37.6

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

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.7 - LANE PERFORMANCE

Lane No.	Mov 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)	Queue (m)	Shrt Lane (m)
South: PR-940 S													
1	L	1	55	5	0	0	26	154	0.170	38.3	0.71	1.2	8
2	LT	1, 2	51	9	0	0	45	263	0.170	27.4	0.69	1.8	13
3	R	3	19	14	6	21	25	722	0.035	12.8	0.69	0.5	3
East: PR-3 E													
1	L	4	54	6	0	0	84	186	0.450	38.4	0.76	3.6	25	70
2	L	4	54	6	0	0	84	186	0.450	38.4	0.76	3.6	25	80
3	T	5	41	19	0	0	397	618	0.643	19.5	0.79	11.9	83	
4	T	5	41	19	0	0	397	618	0.643	19.5	0.79	11.9	83	
5	TR	5, 6	27	19	13	1	400	622	0.643	21.4	0.81	11.7	82	
North: PR-194 N													
1	L	7	47	13	0	0	188	370	0.508	31.9	0.81	6.7	47	
2	T	7, 8	47	13	0	0	305	423	0.722	26.0	0.89	10.7	75	
3	R	9	14	29	6	11	272	972	0.280	11.0	0.72	3.5	24	
West: PR-3 W													
1	L	10	44	16	0	0	339	495	0.685	31.6	0.87	11.1*	78	70
2	L	10	44	16	0	0	339	495	0.685	31.6	0.87	11.1	78	80
3	T	11	31	29	0	0	640	943	0.679	13.0	0.73	15.8	111	
4	T	11	31	29	0	0	640	943	0.679	13.0	0.73	15.8	111	
5	TR	11, 12	14	1	16	29	636	937	0.679	26.0	0.74	34.3	240	

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

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	End Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: PR-940 S													
1	L	1	26	0	0	26	3.30	1950	1849	0	79	154	0.170	100
2	LT	1, 2	12	33	0	45	3.30	1950	1755	0	79	263	0.170	100
3	R	3	0	0	25	25	3.30	1950	308	1857	60	722	0.035	100
East: PR-3 E														
1	L	4	84	0	0	84	3.30	1950	1857	0	0	186	0.450	100
2	L	4	84	0	0	84	3.30	1950	1857	0	0	186	0.450	100
3	T	5	0	397	0	397	3.30	1950	1950	0	0	618	0.643	100
4	T	5	0	397	0	397	3.30	1950	1950	0	0	618	0.643	100
5	TR	5, 6	0	354	46	400	3.30	1950	1939	468	60	622	0.643	100
North: PR-194 N														
1	L	7	188	0	0	188	3.30	1950	1710	0	132	370	0.508	70P
2	T	7, 8	0	305	0	305	3.30	1950	1950	0	0	423	0.722	100
3	R	9	0	0	272	272	3.30	1950	1308	1857	60	972	0.280	100
West: PR-3 W														
1	L	10	339	0	0	339	3.30	1950	1857	0	0	495	0.685	100
2	L	10	339	0	0	339	3.30	1950	1857	0	0	495	0.685	100
3	T	11	0	640	0	640	3.30	1950	1950	0	0	943	0.679	100
4	T	11	0	640	0	640	3.30	1950	1950	0	0	943	0.679	100
5	TR	11, 12	0	632	4	636	3.30	1950	23	1937	60	937	0.679	100

P Lane under-utilisation found by the "Program"

Basic Saturation Flow in this table is adjusted for lane width, approach

grade, parking manoeuvres and number of buses stopping. Saturation flow scale applies if specified.

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh /h)	Total Cap. (veh /h)	Lane Util (%)	Deg. Satn x	Eff. Grn 1st Grn	Eff. Grn 2nd Grn	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
South: PR-940 S											
1 L		38	223	100	0.170	5		36.9	0.72	1.8	1.59
2 T		33	194	100	0.170	13		25.2	0.67	1.8	1.23
3 R	(Und)	25	722	100	0.035	14	21	12.8	0.69	0.5	0.62
East: PR-3 E											
4 L		167	371	100	0.450	6*		38.4	0.76	3.6	7.23
5 T		1148	1785	100	0.643	19		19.8	0.79	11.9	41.01
6 R	(Un2)	46	71	100	0.644	19	24	29.4	0.87	11.7	1.77
North: PR-194 N											
7 L		188	371	70	0.507	13		31.9	0.81	6.7	7.52
8 T		305	423	100	0.722*	13*		26.0	0.89	10.7	12.33
9 R	(Und)	272	973	100	0.280	29	11	11.0	0.72	3.5	6.16
West: PR-3 W											
10 L		678	990	100	0.685	16		31.6	0.87	11.1	27.72
11 T		1913	2816	100	0.679	29		17.3	0.74	34.3	75.37
12 R	(Un2)	4	6	100	0.632	29*	13	35.0	0.86	34.3	0.23

* Maximum degree of saturation, or critical green periods

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: PR-940 S												
1 L	26			26	0	1950	5		0.170	38.3	8	
2 LT	12	33		45	0	1950	9		0.170	27.4	13	
3 R			25	25	0	1950	14	21	0.035	12.8	3	
	38	33	25	96	0				0.170	26.6	13	
East: PR-3 E												
1 L	84			84	0	1950	6		0.450	38.4	25	70
2 L	84			84	0	1950	6		0.450	38.4	25	80
3 T		397		397	0	1950	19		0.643	19.5	83	
4 T		397		397	0	1950	19		0.643	19.5	83	
5 TR		354	46	400	0	1950	19	1	0.643	21.4	82	
	167	1148	46	1361	0				0.643	22.4	83	
North: PR-194 N												
1 L	188			188	0	1950	13		0.508	31.9	47	
2 T		305		305	0	1950	13		0.722	26.0	75	
3 R			272	272	0	1950	29	11	0.280	11.0	24	
	188	305	272	765	0				0.722	22.1	75	
West: PR-3 W												
1 L	339			339	0	1950	16		0.685	31.6	78*	70
2 L	339			339	0	1950	16		0.685	31.6	78	80
3 T		640		640	0	1950	29		0.679	13.0	111	
4 T		640		640	0	1950	29		0.679	13.0	111	
5 TR		632	4	636	0	1950	1	29	0.679	26.0	240	
	678	1913	4	2595	0				0.685	21.1	240	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	4817	0	60	0.722	21.7	240

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

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

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

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

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	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
South: PR-940 S								
1 L		0.083		38	223	0.170	36.9	D
2 T		0.217		33	194	0.170	25.2	C
3 R	(Und)	0.233	0.350	25	722	0.035	12.8	B
				96	1139	0.170	26.6	C
East: PR-3 E								
4 L		0.100*		167	371	0.450	38.4	D
5 T		0.317		1148	1785	0.643	19.8	B
6 R	(Un2)	0.317	0.400	46	71	0.644	29.4	C
				1361	2228	0.644	22.4	C
North: PR-194 N								
7 L		0.217		188	371	0.507	31.9	C
8 T		0.217*		305	423	0.722*	26.0	C
9 R	(Und)	0.483	0.183	272	973	0.280	11.0	B
				765	1766	0.722	22.1	C
West: PR-3 W								
10 L		0.267		678	990	0.685	31.6	C
11 T		0.483		1913	2816	0.679	17.3	B
12 R	(Un2)	0.483*	0.217	4	6	0.632	35.0	C
				2595	3813	0.685	21.1	C
ALL VEHICLES:				4817	8945	0.722	21.7	C

INTERSECTION (persons): 7226 8945 0.722 21.7

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
aaSIDRA Output Guide or the Output section of the on-line help.
* Maximum v/c ratio, or critical green periods

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.672	75
Average Delay	21.7	60
Stop Rate	0.74	95
Max. Queue for Any Movement	34.3	60
Perf. Index	182.8	60
Cost	1845.1	60

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	9215	75
Prac. Spare Cap.	34	75

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

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
South: PR-940 S						
	East	20.0	26.1	31.4	500	109
	North	S	60.0	31.7	500	106
	West	17.1	24.2	26.9	500	105
East: PR-3 E						
	South	14.5	22.3	22.8	500	104
	North	10.0	18.5	15.7	500	102
	West	S	60.0	20.4	500	106
North: PR-194 N						
	South	S	60.0	31.7	500	106
	East	17.1	24.2	26.9	500	105
	West	20.0	26.1	31.4	500	109
West: PR-3 W						
	South	10.0	18.5	15.7	500	102
	East	S	60.0	20.4	500	106
	North	14.5	22.3	22.8	500	104

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

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table D.1 - LANE DELAYS

Lane No.	Mov No.	Deg. Satn x	Stop-line Delay 1st d1	Stop-line Delay 2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	Queuing MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
			Delay (seconds/veh)								
South: PR-940 S											
1 L	1	0.170	29.7	0.0	29.7	4.5	25.2	0.0	25.2	8.6	38.3
2 LT	1, 2	0.170	25.2	0.0	25.2	6.8	18.3	0.0	18.3	8.6 0.0	27.4
3 R	3	0.035	4.5	0.0	4.5	2.3	2.4	0.0	2.4	8.3	12.8
East: PR-3 E											
1 L	4	0.450	29.7	0.0	29.7	4.3	25.4	0.0	25.4	8.7	38.4
2 L	4	0.450	29.7	0.0	29.7	4.3	25.4	0.0	25.4	8.7	38.4
3 T	5	0.643	19.5	0.1	19.5	7.8	11.7	0.0	11.7	0.0	19.5
4 T	5	0.643	19.5	0.1	19.5	7.8	11.7	0.0	11.7	0.0	19.5
5 TR	5, 6	0.643	20.3	0.1	20.4	7.3	13.1	0.4	12.7	0.0 9.0	21.4
North: PR-194 N											
1 L	7	0.508	23.4	0.0	23.4	4.3	19.0	0.0	19.0	8.6	31.9
2 T	7, 8	0.722	24.6	1.5	26.0	8.4	17.6	0.9	16.7	0.0 0.0	26.0
3 R	9	0.280	2.7	0.0	2.7	2.2	0.7	0.0	0.7	8.3	11.0
West: PR-3 W											
1 L	10	0.685	22.1	0.8	22.9	4.2	18.7	0.5	18.2	8.7	31.6
2 L	10	0.685	22.1	0.8	22.9	4.2	18.7	0.5	18.2	8.7	31.6
3 T	11	0.679	13.0	0.0	13.0	7.1	5.9	0.0	5.9	0.0	13.0
4 T	11	0.679	13.0	0.0	13.0	7.1	5.9	0.0	5.9	0.0	13.0
5 TR	11, 12	0.679	26.0	0.0	26.0	7.0	18.9	0.1	18.8	0.0 9.0	26.0

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

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 60

Table D.3 - LANE QUEUES

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: PR-940 S											
1 L	0.170	0.0	0.5	0.0	0.5	0.6	0.8	0.9	1.2	1.4	0.02
2 LT	0.170	0.0	0.7	0.0	0.7	0.9	1.2	1.4	1.8	2.2	0.03
3 R	0.035	0.0	0.2	0.0	0.2	0.2	0.3	0.4	0.5	0.6	0.01
East: PR-3 E											

1	L	0.450	0.0	1.5	0.0	1.5	1.9	2.5	2.9	3.6	4.3	0.36
2	L	0.450	0.0	1.5	0.0	1.5	1.9	2.5	2.9	3.6	4.3	0.31
3	T	0.643	0.0	6.3	0.0	6.3	7.7	9.4	10.3	11.9	13.4	0.17
4	T	0.643	0.0	6.3	0.0	6.3	7.7	9.4	10.3	11.9	13.4	0.17
5	TR	0.643	0.0	6.2	0.0	6.2	7.6	9.2	10.2	11.7	13.2	0.16
North: PR-194 N												
1	L	0.508	0.0	3.1	0.0	3.1	3.9	4.9	5.5	6.7	7.8	0.09
2	T	0.722	0.2	5.3	0.2	5.5	6.8	8.3	9.2	10.7	12.2	0.15
3	R	0.280	0.0	1.5	0.0	1.5	1.9	2.4	2.8	3.5	4.2	0.05
West: PR-3 W												
1	L	0.685	0.1	5.7	0.2	5.8	7.2	8.7	9.6	11.1*	12.6*	1.11
2	L	0.685	0.1	5.7	0.2	5.8	7.2	8.7	9.6	11.1	12.6*	0.97
3	T	0.679	0.0	9.0	0.0	9.0	10.9	13.0	14.2	15.8	17.5	0.22
4	T	0.679	0.0	9.0	0.0	9.0	10.9	13.0	14.2	15.8	17.5	0.22
5	TR	0.679	0.0	21.3	0.0	21.3	25.5	29.8	32.0	34.3	36.6	0.48

Values printed in this table are back of queue (vehicles).
* Queue length exceeds short lane length due to specification of a percentile queue in the aaSIDRA Configuration File. For calculation of this statistic, you may specify the lane with full length.

Int. PR-3 y PR-194
Pico AM Futuro
Intersection ID: 2

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Total Veh. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h
60	8945	0.722	25	21.7	0.78	34.3	182.8	1845.1
65	9078	0.698	29	22.8	0.77	36.8	189.7	1875.5
70	9200	0.710	27	24.0	0.77	39.0	196.9	1908.6
75	9215	0.672	34	24.9	0.76	41.2	203.2	1934.0
80	9172	0.701	28	25.6	0.75	43.5	209.0	1954.4
85	9174	0.718	25	26.7	0.75	45.7	215.9	1985.0
90	9135	0.735	22	28.0	0.75	45.7	223.1	2024.2
95	9149	0.743	21	28.8	0.74	49.9	229.6	2045.9
100	9116	0.755	19	30.3	0.74	52.2	238.0	2088.6
105	9110	0.767	17	31.6	0.75	54.4	246.2	2129.0
110	9097	0.782	15	32.6	0.74	56.7	252.6	2157.6
115	9091	0.792	14	34.2	0.74	59.0	261.1	2201.8
120	9063	0.816	10	36.0	0.75	61.2	270.6	2256.3
125	9072	0.818	10	37.1	0.74	63.5	277.0	2287.1
130	9045	0.829	9	39.1	0.75	65.7	286.7	2345.6
135	9030	0.845	7	40.7	0.75	68.0	294.8	2390.5
140	9028	0.852	6	42.3	0.75	72.6	304.1	2438.0
145	9014	0.872	3	43.7	0.74	74.9	311.3	2476.8
150	8987	0.874	3	45.6	0.75	74.8	319.7	2532.6

--- End of aaSIDRA Output ---

Akcelik & Associates Pty Ltd - aaSIDRA 2.0.3.217

Traffic Consulting Group
TCG Registered User No. M0276
Licence Type: Professional, Multi Computer

Time and Date of Analysis 4:02 PM, 25 Jun 2004

Filename: C:\My Documents\aaSIDRA Projects\Paisajes\02_PR-3 y PR-194_FP.OUT

Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID: 2

RUN INFORMATION

Variable cycle time run: "Optimum" cycle time = 85 s

* Basic Parameters:
Intersection Type: Signalised - Fixed Time
Driving on the right-hand side of the road
Input data specified in Metric units
Default Values File No. 30
Peak flow period (for performance): 15 minutes
Unit time (for volumes): 60 minutes (Hourly Rate)
Specified performance measure for "best" cycle time in variable run - Delay
Delay definition: Control delay
Geometric delay included
aaSIDRA Standard Delay and Queue models used
Level of Service based on: Delay (HCM method)
Queue definition: Back of queue, 95th Percentile

* No. of Main (Timing-Capacity) Iterations = 6
Comparison of last two iterations:
Difference in intersection degree of satn = 0.0 %
Difference in total vehicle capacity = 1.0 %
Largest difference in eff. green times = 2 secs
(max. value for stopping = 2 secs)
Information on Previous Iteration:
Cycle Time = 85
Phase Times: 0, 27, 38, 54
Critical Movements: 4, 12(1st), 2

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

One or more sets of variable run results have been omitted due to unsettled results.

Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID: 2

DEFAULT PARAMETERS

Default values for some of the important general parameters:
(Default Values File: DEF30.SDF)

1. Basic saturation flow: 1950 tcu/h

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

2. Through car equivalents for signalised intersections

	LEFT		THROUGH		RIGHT	
	LV	HV	LV	HV	LV	HV
Normal	1.050	1.800	1.000	1.650	1.050	1.800
Restricted	1.250	2.250			1.250	2.250

3. Opposed turn parameters (Signalised intersection)

	Crit. Gap	Fol.up Hdway	Deps at End	% Exit Flow Opposing
Left turns :	4.5	2.6	2.2	0
Right turns:	4.0	2.4	2.5	0

4. Cruise speed= 60 km/h, Approach Distance= 500 m

5. Queue space per vehicle in metres
Light vehicles: 7.0 Heavy vehicles: 13.0

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

Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 85

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
	LV	HV	LV	HV	LV	HV		
VEHICLES Demand flows in veh/hour as used by the program								
South: PR-940 S								
1	590	0	0	0	0	0	1.00	1.00
2	0	0	439	0	0	0	1.00	1.00
3	0	0	0	0	284	0	1.00	1.00
East: PR-3 E								
4	970	0	0	0	0	0	1.00	1.00
5	0	0	2256	0	0	0	1.00	1.00
6	0	0	0	0	134	0	1.00	1.00
North: PR-194 N								
7	180	0	0	0	0	0	1.00	1.00
8	0	0	192	0	0	0	1.00	1.00
9	0	0	0	0	209	0	1.00	1.00
West: PR-3 W								
10	711	0	0	0	0	0	1.00	1.00
11	0	0	1270	0	0	0	1.00	1.00
12	0	0	0	0	63	0	1.00	1.00

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

Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 85

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	PHASE MATRIX First Green				PHASE MATRIX Second Green				Lost Tim		Req.Mov.Time		Eff. Grn	
		Fr	To	Op	Pr	Fr	To	Op	Pr	1st Grn	2nd Grn	1st Grn	2nd Grn	1st Grn	2nd Grn

```
South: PR-940 S
   1 L         F  G  L                      11        36.4                20
   2 T        *F  G                          4        38.2                27
   3 R  (Und) B  F  R        F  B           26    6   10.0Min  22.0Min    3   50
-------------------------------------------------------------------------------
East: PR-3 E
   4 L        *G  B                          4        27.3                21
   5 LT        G  H                          4        44.4                35
   6 R  (Un2) G  H           H  G  R        4   31   47.0     22.0Min    35   15
-------------------------------------------------------------------------------
North: PR-194 N
   7 L         F  G  L                      20        27.9                11
   8 T         F  G                          4        23.4                27
   9 R  (Und) G  F  R        F  G           39    6   20.0Min  16.6       15   25
-------------------------------------------------------------------------------
West: PR-3 W
  10 L         H  F                          4        17.4                11
  11 LT        B  F                          4        29.5                25
  12 R  (Un2)*B  F          F  B  R         4   29   37.1     56.4       25   27
-------------------------------------------------------------------------------
  Current Phase Sequence No.: 3
  Input phase sequence: G  B  H  F
  Output phase sequence: G  B  H  F
-------------------------------------------------------------------------------

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

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

Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID:     2
           Fixed-Time Signals, Cycle Time =  85


Table S.2 - MOVEMENT CAPACITY PARAMETERS
-------------------------------------------------------------------------------
 Mov      Dem      Satn Flow      Flow Ratio     Total  Prac.  Prac.  Lane   Deg.
 No.      Flow     ----------     ----------      Cap.  Deg.   Spare  Util   Satn
          (veh     1st   2nd      1st   2nd      (veh  Satn   Cap.
           /h)     Grn   Grn      Grn   Grn      /h)   xp     (%)    (%)    x
-------------------------------------------------------------------------------
South: PR-940 S
   1 L     590    2196            0.269           517  0.90    -21    100  1.142*
   2 T     439    1211            0.363           385  0.90    -21    100  1.141
   3 R     284    1200  1857      0.000  0.153   1135  0.90    260    100  0.250
-------------------------------------------------------------------------------
East: PR-3 E
   4 L     859    3475<           0.247           859  0.90    -10    100  1.000
   5 LT   2367E   5541            0.427          2282  0.90    -13    100  1.038
   6 R     134     294    46      0.456  0.000    129  0.90    -13    100  1.037
-------------------------------------------------------------------------------
North: PR-194 N
   7 L     180    2146            0.084           278  0.90     39    100  0.648
   8 T     192     933            0.206           296  0.90     39    100  0.648
   9 R     209    1857  1857      0.000  0.113    874  0.90    276    100  0.239
-------------------------------------------------------------------------------
West: PR-3 W
  10 L     517    3637            0.142           471  0.90    -18     96  1.098
  11 LT   1464E   5426            0.270          1596  0.90     -2    100  0.917
  12 R      63       0   216      0.351  0.290     69  0.90     -2    100  0.914
-------------------------------------------------------------------------------
  E  "Excess" flow from the short lane of an adjacent movement
     added to normal flow
  <  Reduced saturation flow due to a short lane effect

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

Int. PR-3 y PR-194
```

```
Pico PM Futuro
Intersection ID:     2
           Fixed-Time Signals, Cycle Time =  85


Table S.3 - INTERSECTION PARAMETERS
-------------------------------------------------------------------------------
  Crit  App.   Green   Phases   Adjusted     Adjusted    Required   Required
  Mov   &      Period  ------   Lost         Flow        Grn Time   Movement
  No.   Turn           Fr  To   Time         Ratio       Ratio      Time
-------------------------------------------------------------------------------
    4   E_L            G   B      4          0.247       0.275      27.3
   12   W_R    1st     B   F      4          0.351       0.390      37.1
    2   S_T            F   G      4          0.363       0.403      38.2
                                  ----       ------      ------     ------
                       Total:     12         0.960       1.067      102.7
-------------------------------------------------------------------------------

  Cycle Time:
    Minimum   Maximum   Practical   Chosen
       32       150        ****       85
    (Variable cycle times: Program-determined)


    **** Y and U values are too large ****
  Intersection Level of Service                =    E
  Worst movement Level of Service              =    F
  Average intersection delay (s)               =   66.6
  Largest average movement delay (s)           =  128.1
  Largest back of queue, 95% (m)               =    377
  Performance Index                            =  505.17
  Degree of saturation (highest)               =  1.142
  Practical Spare Capacity (lowest)            =   -21 %
  Total vehicle capacity, all lanes (veh/h)    =   8899
  Total vehicle flow (veh/h)                   =   7298
  Total person flow (pers/h)                   =  10947
  Total vehicle delay (veh-h/h)                =  135.11
  Total person delay (pers-h/h)                =  202.66
  Total effective vehicle stops (veh/h)        =   8652
  Total effective person stops (pers/h)        =  12977
  Total vehicle travel (veh-km/h)              =  4422.3
  Total cost ($/h)                             =  4822.65
  Total fuel (L/h)                             =   698.0
  Total CO2 (kg/h)                             =  1744.90

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

Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID:     2
           Fixed-Time Signals, Cycle Time =  85


Table S.4 - PHASE INFORMATION
-------------------------------------------------------
  Phase    Change   Green   Displayed   Grn+Intgrn
   No.      Time    Start    Green      Secs  Prop.
-------------------------------------------------------
    G         0       4        21        25  0.294
    B        25      29        10        14  0.165
    H        39      43        11        15  0.176
    F        54      58        27        31  0.365
-------------------------------------------------------
  Current Phase Sequence No.: 3
  Input phase sequence: G  B  H  F
  Output phase sequence: G  B  H  F

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

Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID:     2
           Fixed-Time Signals, Cycle Time =  85
```

Table S.5 - MOVEMENT PERFORMANCE

Mov No.		Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest 95% Back (vehs)	Queue (m)	Perf. Index	Aver. Speed (km/h)
South: PR-940 S										
1	L	21.00	31.50	128.1	1.00	1.50	45.2	317	60.29	13.3
2	T	14.41	21.61	118.1	1.00	1.54	45.2	317	43.81	14.1
3	R	1.31	1.97	16.6	0.48	0.78	6.6	46	8.50	41.2
East: PR-3 E										
4	L	10.36	15.54	43.4	1.00	0.86	20.3	142	45.10	27.3
5	LT	45.07	67.61	68.5	1.00	1.34	53.9	377	175.51	20.8
6	R	2.45	3.67	65.8	1.00	1.23	41.3	289	8.84	21.3
North: PR-194 N										
7	L	2.39	3.58	47.7	0.98	0.84	11.1	78	9.64	25.9
8	T	1.83	2.75	34.3	0.96	0.82	11.1	78	9.28	30.9
9	R	1.15	1.72	19.8	0.63	0.75	6.2	43	6.99	38.8
West: PR-3 W										
10	L	14.86	22.29	103.5	1.00	1.26	19.4	136	45.08	15.6
11	LT	19.23	28.85	47.3	1.00	1.10	26.5	186	88.11	26.1
12	R	1.05	1.57	60.0	1.00	1.13	24.3	170	4.03	22.6

Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 85

Table S.6 - INTERSECTION PERFORMANCE

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 (m)	Perf. Index	Aver. Speed (km/h)
South: PR-940 S									
1313	1.142	36.72	55.08	100.7	0.889	1.36	317	112.60	15.9
East: PR-3 E									
3360	1.038	57.88	86.82	62.0	1.000	1.21	377	229.45	22.2
North: PR-194 N									
581	0.648	5.37	8.05	33.2	0.853	0.80	78	25.91	31.3
West: PR-3 W									
2044	1.098	35.14	52.72	61.9	1.000	1.14	186	137.21	22.2
INTERSECTION (persons):									
10947	1.142		202.66	66.6	0.968	1.19		505.17	21.2

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

Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 85

Table S.7 - LANE PERFORMANCE

Lane No.	Mov 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)	Queue (m)	Shrt Lane (m)
South: PR-940 S													
1	L	1	65	20	0	0	445	390	1.142	128.6	1.48	34.6	242
2	LT	1, 2	61	24	0	0	584	511	1.142	120.3	1.54	45.2	317
3	R	3	26	3	6	50	284	1135	0.250	16.6	0.78	6.6	46
East: PR-3 E													
1	L	4	64	21	0	0	400	400	1.000	42.6r	0.86	17.4*	121< 70
2	L	4	64	21	0	0	459	459	1.000	44.1r	0.87	20.3*	142< 80
3	LT	5	50	35	0	0	833	803	1.038	73.5	1.18	53.9	377
4	T	5	50	35	0	0	833	803	1.038	73.5	1.38	53.9	377
5	TR	5, 6	17	35	31	2	835	805	1.038	58.2	1.23	41.3	289
North: PR-194 N													
1	L	7	74	11	0	0	132	203	0.648	49.5	0.84	7.2	50
2	LT	7, 8	67	18	0	0	240	371	0.648	36.1	0.82	11.1	78
3	R	9	39	15	6	25	209	874	0.239	19.8	0.75	6.2	43
West: PR-3 W													
1	L	10	74	11	0	0	253	240	1.052	94.9	1.22	17.3*	121< 70
2	L	10	74	11	0	0	264	240	1.098	111.8	1.29	19.4*	136< 80
3	LT	11	60	25	0	0	526	574	0.917	45.8	1.18	26.5	186
4	T	11	60	25	0	0	526	574	0.917	45.8	1.09	26.5	186
5	TR	11, 12	29	1	30	25	475	518	0.917	52.2	1.13	24.3	170

< Short lane capacity is reached and there is excess flow into an adjacent lane
* Queue length exceeds short lane length due to specification of a percentile queue in the aaSIDRA Configuration File. For calculation of this statistic, you may specify the lane with full length.
r Delay, stops and queue length for this lane have been cut down to fit in the queuing space. The amount cut may not be accounted for fully in the adjacent lane performance statistics. You may wish to change the short lane to a full lane to investigate the extent of this effect.

Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 85

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	End Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: PR-940 S													
1	L 1	445	0	0	445	3.30	1950	1657	0	55	390	1.142	100
2	LT 1, 2	145	439	0	584	3.30	1950	1811	0	55	511	1.142	100
3	R 3	0	0	284	284	3.30	1950	1200	1857	42	1135	0.250	100
East: PR-3 E													
1	L 4	400	0	0	400	3.30	1950	1618<	0	0	400	1.000	100
2	L 4	459	0	0	459	3.30	1950	1857	0	0	459	1.000	100
3	LT 5	111E	722	0	833	3.30	1950	1950	0	0	803	1.038	100
4	T 5	0	833	0	833	3.30	1950	1950	0	0	803	1.038	100
5	TR 5, 6	0	701	134	835	3.30	1950	1934	361	42	805	1.038	100
North: PR-194 N													
1	L 7	132	0	0	132	3.30	1950	1569	0	53	203	0.648	100
2	LT 7, 8	48	192	0	240	3.30	1950	1751	0	53	371	0.648	100

3 R	9	0	0	209	209	3.30	1950	1857	1857	42	874	0.239	100
West: PR-3 W													
1 L	10	253	0	0	253	3.30	1950	1857	0	0	240	1.052	96P
2 L	10	264	0	0	264	3.30	1950	1857	0	0	240	1.098	100
3 LT	11	194E	332	0	526	3.30	1950	1950	0	0	574	0.917	100
4 T	11	0	526	0	526	3.30	1950	1950	0	0	574	0.917	100
5 TR	11, 12	0	412	63	475	3.30	1950	639	1734	42	518	0.917	100

E "Excess" flow from back of an adjacent short lane
< Reduced saturation flow due to a short lane effect
P Lane under-utilisation found by the "Program"

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

Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 85

Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh /h)	Total Cap. (veh /h)	Lane Util (%)	Deg. Satn x	Eff. Grn 1st Grn	Eff. Grn 2nd Grn	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
South: PR-940 S											
1 L		590	517	100	1.142*	20		128.1	1.50	45.2	60.29
2 T		439	385	100	1.141	27*		118.1	1.54	45.2	43.81
3 R	(Und)	284	1135	100	0.250	3	50	16.6	0.78	6.6	8.50
East: PR-3 E											
4 L		859	859<	100	1.000	21*		43.4	0.86	20.3	45.10
5 LT		2367E	2282	100	1.038	35		68.5	1.34	53.9	175.51
6 R	(Un2)	134E	129	100	1.037	35	15	65.8	1.23	41.3	8.84
North: PR-194 N											
7 L		180	278	100	0.648	11		47.7	0.84	11.1	9.64
8 T		192	296	100	0.648	27		34.3	0.82	11.1	9.28
9 R	(Und)	209	874	100	0.239	15	25	19.8	0.75	6.2	6.99
West: PR-3 W											
10 L		517	471	96	1.098	11		103.5	1.26	19.4	45.08
11 LT		1464E	1596	100	0.917	25		47.3	1.10	26.5	88.11
12 R	(Un2)	63E	69	100	0.914	25*	27	60.0	1.13	24.3	4.03

E "Excess" flow from the short lane of an adjacent movement added to normal flow
< Reduced capacity due to a short lane effect
* Maximum degree of saturation, or critical green periods

Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 85

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: PR-940 S												
1 L	445			445	0	1950	20		1.142	128.6	242	
2 LT	145	439		584	0	1950	24		1.142	120.3	317	
3 R			284	284	0	1950	3	50	0.250	16.6	46	
	590	439	284	1313	0				1.142	100.7	317	
East: PR-3 E												
1 L	400			400	0	1950	21		1.000	42.6r	121*	70
2 L	459			459	0	1950	21		1.000	44.1r	142*	80
3 LT	459	722		833	0	1950	35		1.038	73.5	377	
4 T		833		833	0	1950	35		1.038	73.5	377	
5 TR		701	134	835	0	1950	35	2	1.038	58.2	289	
	970	2256	134	3360	0				1.038	62.0	377	
North: PR-194 N												
1 L	132			132	0	1950	11		0.648	49.5	50	
2 LT	48	192		240	0	1950	18		0.648	36.1	78	
3 R			209	209	0	1950	15	25	0.239	19.8	43	
	180	192	209	581	0				0.648	33.2	78	
West: PR-3 W												
1 L	253			253	0	1950	11		1.052	94.9	121*	70
2 L	264			264	0	1950	11		1.098	111.8	136*	80
3 LT	264	332		526	0	1950	25		0.917	45.8	186	
4 T		526		526	0	1950	25		0.917	45.8	186	
5 TR		412	63	475	0	1950	1	25	0.917	52.2	170	
	711	*1270*	*63*	*2044*	*0*				1.098	61.9	186	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	7298	0	85	1.142	66.6	377

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

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

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

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

r Delay, stops and queue length for this lane have been cut down to fit in the queuing space. The amount cut may not be accounted for fully in the adjacent lane performance statistics. You may wish to change the short lane to a full lane to investigate the extent of this effect.

Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 85

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	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
South: PR-940 S								
1 L		0.235		590	517	1.142*	128.1	F
2 T		0.318*		439	385	1.141	118.1	F
3 R	(Und)	0.035	0.588	284	1135	0.250	16.6	B
				1313	2036	1.142	100.7	F

East: PR-3 E							
4 L	0.247*		859	859<	1.000	43.4	D
5 LT	0.412		2367E	2282	1.038	68.5	E
6 R (Un2)	0.412	0.176	134E	129	1.037	65.8	E
			3360	3269	1.038	62.0	E
North: PR-194 N							
7 L	0.129		180	278	0.648	47.7	D
8 T	0.318		192	296	0.648	34.3	C
9 R (Und)	0.176	0.294	209	874	0.239	19.8	B
			581	1448	0.648	33.2	C
West: PR-3 W							
10 L	0.129		517	471	1.098	103.5	F
11 LT	0.294		1464E	1596	0.917	47.3	D
12 R (Un2)	0.294*	0.318	63E	69	0.914	60.0	E
			2044	2135	1.098	61.9	E
ALL VEHICLES:			7298	8899	1.142	66.6	E
INTERSECTION (persons):			10947	8899	1.142	66.6	

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 aaSIDRA Output Guide or the Output section of the on-line help.

< Reduced capacity due to a short lane effect

* Maximum v/c ratio, or critical green periods

E "Excess" flow from the short lane of an adjacent movement added to normal flow

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Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID: 2

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	1.067	115
Average Delay	66.6	85
Stop Rate	1.11	150
Max. Queue for Any Movement	53.9	85
Perf. Index	505.2	85
Cost	4822.7	85

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	9087	90
Prac. Spare Cap.	-16	115

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

Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID: 2

Fixed-Time Signals, Cycle Time = 85

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
South: PR-940 S						
	East	20.0	26.1	31.4	500	109
	North	S	60.0	31.7	500	106
	West	17.1	24.2	26.9	500	105
East: PR-3 E						
	South	14.5	22.3	22.8	500	104
	North	10.0	18.5	15.7	500	102
	West	S	60.0	20.4	500	106
North: PR-194 N						
	South	S	60.0	31.7	500	106
	East	17.1	24.2	26.9	500	105
	West	20.0	26.1	31.4	500	109
West: PR-3 W						
	South	10.0	18.5	15.7	500	102
	East	S	60.0	20.4	500	106
	North	14.5	22.3	22.8	500	104

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

Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 85

Table D.1 - LANE DELAYS

Lane No.	Mov No.	Deg. Satn x	Stop-line Delay 1st d1	Stop-line Delay 2nd d2	Total dSL	Delay (seconds/veh) Acc. Dec. dn	Queuing Total dq	Queuing MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: PR-940 S											
1 L	1	1.142	36.2	83.8	120.0	4.7	115.3	8.4	107.0	8.6	128.6
2 LT	1, 2	1.142	33.6	84.5	118.1	7.6	110.5	8.3	102.3	8.6 0.0	120.3
3 R	3	0.250	8.4	0.0	8.4	2.4	6.0	0.8	5.1	8.3	16.6
East: PR-3 E											
1 L	4	1.000	33.9	0.0	33.9	4.4	29.5	0.0	29.5	8.7	42.6
2 L	4	1.000	35.4	0.0	35.4	4.4	31.0	0.0	31.0	8.7	44.1
3 LT	5	1.038	27.1	46.4	73.5	8.6	64.9	4.8	60.1	0.0	73.5
4 T	5	1.038	27.1	46.4	73.5	8.6	64.9	4.8	60.1	0.0	73.5
5 TR	5, 6	1.038	9.4	47.4	56.8	7.8	49.0	3.5	45.5	0.0 9.0	58.2
North: PR-194 N											
1 L	7	0.648	40.2	0.8	40.9	4.7	36.3	0.6	35.7	8.6	49.5
2 LT	7, 8	0.648	34.0	0.3	34.3	7.5	26.8	0.2	26.6	8.6 0.0	36.1
3 R	9	0.239	11.5	0.0	11.5	3.1	8.5	0.0	8.5	8.3	19.8
West: PR-3 W											
1 L	10	1.052	42.1	44.1	86.2	4.4	81.7	6.1	75.7	8.7	94.9
2 L	10	1.098	42.1	61.0	103.0	4.4	98.6	7.1	91.6	8.7	111.8

3	LT	11	0.917	31.8	14.1	45.8	8.6	37.3	2.6	34.7	0.0	45.8
4	T	11	0.917	31.8	14.1	45.8	8.6	37.3	2.6	34.7	0.0	45.8
5	TR	11, 12	0.917	35.5	15.5	51.0	7.9	43.0	3.4	39.6	0.0 9.0	52.2

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

Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID: 2
Fixed-Time Signals, Cycle Time = 85

Table D.3 - LANE QUEUES

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: PR-940 S											
1 L	1.142	8.9	11.7	9.7	21.4	25.8	30.1	32.3	34.6	36.9	0.48
2 LT	1.142	11.8	15.2	13.0	28.2	33.9	39.5	42.4	45.2	48.1	0.63
3 R	0.250	0.0	3.1	0.0	3.1	3.9	4.8	5.5	6.6	7.7	0.09
East: PR-3 E											
1 L	1.000	3.5	10.0	0.0	10.0	12.1*	14.4*	15.7*	17.4*	19.0*	1.74
2 L	1.000	3.9	12.0	0.0	12.0	14.5*	17.1*	18.5*	20.3*	22.0*	1.77
3 LT	1.038	10.0	21.3	12.3	33.7	40.4	47.1	50.5	53.9	57.3	0.75
4 T	1.038	10.0	21.3	12.3	33.7	40.4	47.1	50.5	53.9	57.3	0.75
5 TR	1.038	10.2	13.1	12.6	25.7	30.9	36.1	38.7	41.3	44.0	0.58
North: PR-194 N											
1 L	0.648	0.0	3.4	0.1	3.4	4.3	5.3	6.0	7.2	8.4	0.10
2 LT	0.648	0.0	5.8	0.0	5.8	7.1	8.7	9.6	11.1	12.6	0.16
3 R	0.239	0.0	2.8	0.0	2.8	3.6	4.5	5.1	6.2	7.3	0.09
West: PR-3 W											
1 L	1.052	2.9	6.8	3.2	10.0	12.1*	14.4*	15.7*	17.3*	19.0*	1.73
2 L	1.098	4.0	7.1	4.3	11.4	13.8*	16.3*	17.7*	19.4*	21.1*	1.70
3 LT	0.917	2.1	13.2	3.0	16.2	19.5	22.8	24.6	26.5	28.5	0.37
4 T	0.917	2.1	13.2	3.0	16.2	19.5	22.8	24.6	26.5	28.5	0.37
5 TR	0.917	2.1	11.7	3.0	14.7	17.7	20.8	22.4	24.3	26.1	0.34

Values printed in this table are back of queue (vehicles).
* Queue length exceeds short lane length due to specification of a percentile queue in the aaSIDRA Configuration File. For calculation of this statistic, you may specify the lane with full length.

Int. PR-3 y PR-194
Pico PM Futuro
Intersection ID: 2

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Total Veh. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h
60	8513	1.212	-26	89.0	1.45	63.5	553.8	5831.0
65	8624	1.184	-24	82.6	1.38	61.6	537.6	5544.6
70	8751	1.143	-21	75.8	1.31	59.0	518.9	5237.3
75	8823	1.115	-19	71.5	1.25	57.8	509.0	5043.9
85	8899	1.142	-21	66.6	1.19	53.9	505.2	4822.7
105	8890	1.088	-17	77.2	1.19	70.8	574.0	5291.3
110	9069	1.111	-19	71.2	1.13	71.3	555.1	5018.4
115	8912	1.067	-16	77.9	1.17	74.1	592.4	5321.5
125	8905	1.086	-17	83.5	1.16	82.1	626.1	5564.9
130	8923	1.076	-16	82.5	1.15	83.6	628.6	5521.2
135	8971	1.072	-16	81.7	1.13	86.1	632.2	5483.7
140	8937	1.078	-17	85.4	1.14	89.5	653.5	5645.9
145	8917	1.090	-17	88.2	1.14	93.8	670.9	5770.0
150	8955	1.073	-16	85.4	1.11	93.7	667.1	5626.3

One or more sets of variable run results have been omitted due to unsettled results.

--- End of aaSIDRA Output ---

Akcelik & Associates Pty Ltd - aaSIDRA 2.0.3.217

Traffic Consulting Group
TCG Registered User No. M0276
Licence Type: Professional, Multi Computer

Time and Date of Analysis 1:52 PM, 22 Jun 2004

Filename: C:\My Documents\aaSIDRA Projects\Paisajes\03_PR-3 y Paisajes_BA.OUT

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3

RUN INFORMATION

Variable cycle time run: "Optimum" cycle time = 110 s

* Basic Parameters:
  Intersection Type: Signalised - Fixed Time
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Specified performance measure for "best" cycle time in variable run - Delay
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile

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

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

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3

DEFAULT PARAMETERS

Default values for some of the important general parameters:
(Default Values File: DEF30.SDF)

1. Basic saturation flow: 1950 tcu/h

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

2. Through car equivalents for signalised intersections

	LEFT		THROUGH		RIGHT	
	LV	HV	LV	HV	LV	HV
Normal	1.050	1.800	1.000	1.650	1.050	1.800
Restricted	1.250	2.250			1.250	2.250

3. Opposed turn parameters (Signalised intersection)

	Crit. Gap	Fol.up Hdway	Deps at End	% Exit Flow Opposing
Left turns :	4.5	2.6	2.2	0
Right turns:	4.0	2.4	2.5	0

4. Cruise speed= 60 km/h, Approach Distance= 500 m

5. Queue space per vehicle in metres
   Light vehicles: 7.0 Heavy vehicles: 13.0

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

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
South: Paisajes S								
1	28	0	0	0	0	0	1.00	1.00
3	0	0	0	0	16	0	1.00	1.00
East: PR-3 E								
4	24	0	0	0	0	0	1.00	1.00
5	0	0	1304	0	0	0	1.00	1.00
West: PR-3 W								
10	1	0	0	0	0	0	1.00	1.00
11	0	0	2224	0	0	0	1.00	1.00
12	0	0	0	0	4	0	1.00	1.00

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

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	PHASE First Green Fr	To	Op	Pr	PHASE Second Green Fr	To	Op	Pr	Lost Tim 1st Grn	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
South: Paisajes S															
1	L	*C	A							4		9.0Min		5	
East: PR-3 E															
4	L	*A	B							4		9.0Min		5	
5	T	A	C							4		44.9		97	
West: PR-3 W															
11	T	*B	C							4		73.9		88	
10	L	B	C	L						4		65.1		88	

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

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

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

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.		Dem Flow (veh /h)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: Paisajes S											
1	L	28	3714		0.008		169	0.90	443	100	0.166
3	R	16	1857		0.009		1857	0.98	****	100	0.009
East: PR-3 E											
4	L	24	1857		0.013		84	0.90	217	100	0.284
5	T	1304	3900		0.334		3439	0.90	137	100	0.379
West: PR-3 W											
11	T	2224	3891		0.572		3113	0.90	26	100	0.714*
12	R	4	1857		0.002		1857	0.98	****	100	0.002
10	L	1	2		0.500		2	0.90	44	100	0.625

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.3 - INTERSECTION PARAMETERS

Crit Mov No.	App. & Turn	Green Period	Phases Fr	Phases To	Adjusted Lost Time	Adjusted Flow Ratio	Required Grn Time Ratio	Required Movement Time
4	E_L		A	B	9	-	-	9.0Min
11	W_T		B	C	4	0.572	0.635	73.9
1	S_L		C	A	9	-	-	9.0Min
				Total:	22	0.572	0.635	91.9

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

Cycle Time:

Minimum	Maximum	Practical	Chosen
28	150	60	110

(Variable cycle times: Program-determined)

Intersection Level of Service	=	A
Worst movement Level of Service	=	E
Average intersection delay (s)	=	4.8
Largest average movement delay (s)	=	67.8
Largest back of queue, 95% (m)	=	192
Performance Index	=	91.05
Degree of saturation (highest)	=	0.714
Practical Spare Capacity (lowest)	=	26 %
Total vehicle capacity, all lanes (veh/h)	=	10521
Total vehicle flow (veh/h)	=	3601
Total person flow (pers/h)	=	5402
Total vehicle delay (veh-h/h)	=	4.80
Total person delay (pers-h/h)	=	7.20
Total effective vehicle stops (veh/h)	=	1299
Total effective person stops (pers/h)	=	1948
Total vehicle travel (veh-km/h)	=	2183.1
Total cost ($/h)	=	988.20
Total fuel (L/h)	=	196.1
Total CO2 (kg/h)	=	490.17

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Grn+Intgrn Prop.
A	0	4	5	9	0.082
B	9	13	88	92	0.836
C	101	105	5	9	0.082

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

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.5 - MOVEMENT PERFORMANCE

Mov No.		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 (m)	Perf. Index	Aver. Speed (km/h)
South: Paisajes S										
1	L	0.52	0.78	67.0	0.99	0.68	1.2	8	1.86	21.0
3	R	0.04	0.06	8.3		0.62	0.3#		0.25	48.9
East: PR-3 E										
4	L	0.45	0.68	67.8	0.99	0.71	2.0	14	1.61	20.9
5	T	0.44	0.66	1.2	0.19	0.14	7.7	54	22.07	57.4
West: PR-3 W										
11	T	3.34	5.02	5.4	0.51	0.48	27.4	192	65.19	52.2
12	R	0.01	0.01	8.3		0.62	0.1#		0.06	48.9
10	L	0.00	0.00	0.0	0.00	0.00	0.0	0	0.00	41.5

Largest density (passenger cars per km or mile) for any lane

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.6 - INTERSECTION PERFORMANCE

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 (m)	Perf. Index	Aver. Speed (km/h)

South: Paisajes S									
44	0.166	0.56	0.84	45.7	0.630	0.66	8	2.11	26.6
East: PR-3 E									
1328	0.379	0.89	1.34	2.4	0.207	0.15	54	23.68	55.7
West: PR-3 W									
2229	0.714	3.35	5.03	5.4	0.508	0.48	192	65.26	52.2
INTERSECTION (persons):									
5402	0.714		7.20	4.8	0.399	0.36		91.05	52.8

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

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.7 - LANE PERFORMANCE

Lane No.	Mov 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)	Queue (m)	Shrt Lane (m)
South: Paisajes S													
1 L	1	105	5	0	0	14	84	0.166	67.0	0.68	1.2	8	
2 L	1	105	5	0	0	14	84	0.166	67.0	0.68	1.2	8	
3 R	3	0	110	0	0	16	1857	0.009	8.3	0.62	0.3#		
East: PR-3 E													
1 L	4	105	5	0	0	24	84	0.284	67.8	0.71	2.0	14	50
2 T	5	13	97	0	0	652	1720	0.379	1.2	0.14	7.7	54	
3 T	5	13	97	0	0	652	1720	0.379	1.2	0.14	7.7	54	
West: PR-3 W													
1 LT	10, 11	22	88	0	0	1110	1554	0.714	5.4	0.48	27.3	191	
2 T	11	22	88	0	0	1115	1560	0.714	5.4	0.48	27.4	192	
3 R	12	0	110	0	0	4	1857	0.002	8.3	0.62	0.1#		

Density (passenger cars per km or mile)

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	End Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: Paisajes S													
1 L	1	14	0	0	14	3.30	1950	1857	0	0	84	0.166	100
2 L	1	14	0	0	14	3.30	1950	1857	0	0	84	0.166	100
3 R	3	0	0	16	16	3.30	1950	1857	1857	0	1857	0.009	100
East: PR-3 E													
1 L	4	24	0	0	24	3.30	1950	1857	0	0	84	0.284	100
2 T	5	0	652	0	652	3.30	1950	1950	0	0	1720	0.379	100
3 T	5	0	652	0	652	3.30	1950	1950	0	0	1720	0.379	100
West: PR-3 W													
1 LT	10, 11	1	1109	0	1110	3.30	1950	1943	0	33	1554	0.714	100
2 T	11	0	1115	0	1115	3.30	1950	1950	0	0	1560	0.714	100
3 R	12	0	0	4	4	3.30	1950	1857	1857	0	1857	0.002	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.

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh /h)	Total Cap. (veh /h)	Lane Util (%)	Deg. Satn x	Eff. Grn 1st Grn	Eff. Grn 2nd Grn	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
South: Paisajes S											
1 L		28	169	100	0.166	5*		67.0	0.68	1.2	1.86
3 R	(Con)	16	1857	100	0.009	110		8.3	0.62	0.3 #	0.25
East: PR-3 E											
4 L		24	84	100	0.284	5*		67.8	0.71	2.0	1.61
5 T		1304	3439	100	0.379	97		1.2	0.14	7.7	22.07
West: PR-3 W											
11 T		2224	3113	100	0.714*	88*		5.4	0.48	27.4	65.19
12 R	(Con)	4	1857	100	0.002	110		8.3	0.62	0.1 #	0.06
10 L		1	2	100	0.625	88		0.0	0.00	0.0	0.00

* Maximum degree of saturation, or critical green periods
\# Largest density (passenger cars per km or mile) for any lane

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: Paisajes S												
1 L	14			14	0	1950	5		0.166	67.0	8	
2 L	14			14	0	1950	5		0.166	67.0	8	
3 R			16	16	0	1950	110		0.009	8.3		
	28	0	16	44	0				0.166	45.7	8	
East: PR-3 E												
1 L	24			24	0	1950	5		0.284	67.8	14	50
2 T		652		652	0	1950	97		0.379	1.2	54	
3 T		652		652	0	1950	97		0.379	1.2	54	
	24	1304	0	1328	0				0.379	2.4	54	
West: PR-3 W												
1 LT	0	1109		1110	0	1950	88		0.714	5.4	191	
2 T		1115		1115	0	1950	88		0.714	5.4	192	
3 R			4	4	0	1950	110		0.002	8.3		

1	2224	4	2229	0		0.714	5.4	192

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	3601	0	110	0.714	4.8	192

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

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

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

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	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
South: Paisajes S								
1 L		0.045*		28	169	0.166	67.0	E
3 R	(Con)	1.000		16	1857	0.009	8.3	A#
				44	2026	0.166	45.7	D
East: PR-3 E								
4 L		0.045*		24	84	0.284	67.8	E
5 T		0.882		1304	3439	0.379	1.2	A
				1328	3524	0.379	2.4	A
West: PR-3 W								
11 T		0.800*		2224	3113	0.714*	5.4	A
12 R	(Con)	1.000		4	1857	0.002	8.3	A#
10 L		0.800		1	2	0.625	0.0	A
				2229	4971	0.714	5.4	A
ALL VEHICLES:				3601	10521	0.714	4.8	A
INTERSECTION (persons):				5402	10521	0.714	4.8	

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
aaSIDRA Output Guide or the Output section of the on-line help.
\# Level Of Service for continuous movements based on density
* Maximum v/c ratio, or critical green periods

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.714	110
Average Delay	4.8	110
Stop Rate	0.36	110
Max. Queue for Any Movement	27.4	110
Perf. Index	91.0	110
Cost	988.2	110

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	10521	110
Prac. Spare Cap.	26	110

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

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
South: Paisajes S						
	East	20.0	26.1	31.4	500	109
	West	13.2	21.3	20.8	500	104
East: PR-3 E						
	South	13.1	21.2	20.6	500	104
	West	S	60.0	20.8	500	106
West: PR-3 W						
	South	20.0	26.1	31.4	500	109
	East	S	60.0	20.8	500	106
	West	5.9	14.3	18.7	500	111

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

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table D.1 - LANE DELAYS

Lane No.	Mov No.	Deg. Satn x	Delay (seconds/veh) Stop-line 1st d1	2nd d2	Delay Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: Paisajes S											
1 L	1	0.166	58.2	0.0	58.2	4.2	54.0	0.0	54.0	8.8	67.0
2 L	1	0.166	58.2	0.0	58.2	4.2	54.0	0.0	54.0	8.8	67.0
3 R	3	0.009			0.0					8.3	8.3
East: PR-3 E											

1 L	4	0.284	59.0	0.0	59.0	4.2	54.7	0.0	54.7	8.8	67.8
2 T	5	0.379	1.2	0.0	1.2	1.6	0.0	0.0	0.0	0.0	1.2
3 T	5	0.379	1.2	0.0	1.2	1.6	0.0	0.0	0.0	0.0	1.2
West: PR-3 W											
1 LT	10, 11	0.714	5.4	0.0	5.4	4.4	1.1	0.0	1.1	11.0 0.0	5.4
2 T	11	0.714	5.4	0.0	5.4	4.4	1.1	0.0	1.1	0.0	5.4
3 R	12	0.002			0.0					8.3	8.3

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

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table D.3 - LANE QUEUES

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: Paisajes S											
1 L	0.166	0.0	0.5	0.0	0.5	0.6	0.8	0.9	1.2	1.5	0.02
2 L	0.166	0.0	0.5	0.0	0.5	0.6	0.8	0.9	1.2	1.5	0.02
3 R	0.009				0.3#						0.00#
East: PR-3 E											
1 L	0.284	0.0	0.8	0.0	0.8	1.1	1.4	1.6	2.0	2.4	0.28
2 T	0.379	0.0	3.7	0.0	3.7	4.6	5.7	6.5	7.7	9.0	0.11
3 T	0.379	0.0	3.7	0.0	3.7	4.6	5.7	6.5	7.7	9.0	0.11
West: PR-3 W											
1 LT	0.714	0.0	16.7	0.0	16.7	20.1	23.5	25.3	27.3	29.3	0.38
2 T	0.714	0.0	16.8	0.0	16.8	20.2	23.7	25.4	27.4	29.4	0.38
3 R	0.002				0.1#						0.00#

Values printed in this table are back of queue (vehicles).
Continuous movements: Density (passenger cars per km or mile) instead of queue, Space Occupancy Ratio instead of Queue Storage Ratio

Int PR-3 y Acceso Paisajes
Pico AM Base
Intersection ID: 3

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Total Veh. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h
60	9699	0.902	0	15.2	0.76	37.3	121.5	1244.2
70	9958	0.834	8	9.0	0.59	31.2	104.2	1097.0
80	10151	0.788	14	6.0	0.49	27.7	94.8	1024.0
90	10302	0.756	19	5.5	0.44	27.6	93.2	1008.9
100	10422	0.733	23	5.1	0.39	27.5	92.0	997.3
110	10521	0.714	26	4.8	0.36	27.4	91.0	988.2

--- End of aaSIDRA Output ---

Akcelik & Associates Pty Ltd - aaSIDRA 2.0.3.217

Traffic Consulting Group
TCG Registered User No. M0276
Licence Type: Professional, Multi Computer

Time and Date of Analysis 10:05 AM, 23 Jun 2004

Filename: C:\My Documents\aaSIDRA Projects\Paisajes\03_PR-3 y Paisajes_BP.OUT

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3

RUN INFORMATION

Variable cycle time run: "Optimum" cycle time = 110 s

* Basic Parameters:
Intersection Type: Signalised - Fixed Time
Driving on the right-hand side of the road
Input data specified in Metric units
Default Values File No. 30
Peak flow period (for performance): 15 minutes
Unit time (for volumes): 60 minutes (Hourly Rate)
Specified performance measure for "best" cycle time in variable run - Delay
Delay definition: Control delay
Geometric delay included
aaSIDRA Standard Delay and Queue models used
Level of Service based on: Delay (HCM method)
Queue definition: Back of queue, 95th Percentile

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

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

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3

DEFAULT PARAMETERS

Default values for some of the important general parameters:
(Default Values File: DEF30.SDF)

1. Basic saturation flow: 1950 tcu/h

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

2. Through car equivalents for signalised intersections

	LEFT		THROUGH		RIGHT	
	LV	HV	LV	HV	LV	HV
Normal	1.050	1.800	1.000	1.650	1.050	1.800
Restricted	1.250	2.250			1.250	2.250

3. Opposed turn parameters (Signalised intersection)

	Crit. Gap	Fol.up Hdway	Deps at End	% Exit Flow Opposing
Left turns :	4.5	2.6	2.2	0
Right turns:	4.0	2.4	2.5	0

4. Cruise speed= 60 km/h, Approach Distance= 500 m

5. Queue space per vehicle in metres
Light vehicles: 7.0 Heavy vehicles: 13.0

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

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES	Demand flows in veh/hour as used by the program							
South: Paisajes S								
1	20	0	0	0	0	0	1.00	1.00
3	0	0	0	0	8	0	1.00	1.00
East: PR-3 E								
4	48	0	0	0	0	0	1.00	1.00
5	0	0	2196	0	0	0	1.00	1.00
West: PR-3 W								
10	20	0	0	0	0	0	1.00	1.00
11	0	0	1560	0	0	0	1.00	1.00
12	0	0	0	0	28	0	1.00	1.00

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

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	Phase First Green Fr	To	Op	Pr	Phase Second Green Fr	To	Op	Pr	Lost Tim 1st Grn	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
South: Paisajes S															
1	L	*C	A							4		9.0Min		5	
East: PR-3 E															
4	L		A	B						4		9.0Min		6	
5	T	*A	C							4		72.8		97	
West: PR-3 W															
11	T		B	C						4		61.3		87	
10	L		B	C	L					10		63.1		81	

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

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

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

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.		Dem Flow (veh /h)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: Paisajes S											
1	L	20	3714		0.005		169	0.90	660	100	0.118
3	R	8	1857		0.004		1857	0.98	****	100	0.004
East: PR-3 E											
4	L	48	1857		0.026		101	0.90	90	100	0.474
5	T	2196	3900		0.563		3439	0.90	41	100	0.639*
West: PR-3 W											
11	T	1560	3327		0.469		2631	0.90	52	100	0.593
12	R	28	1857		0.015		1857	0.98	6400	100	0.015
10	L	20	46		0.435		34	0.90	52	100	0.590

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.3 - INTERSECTION PARAMETERS

Crit Mov No.	App. & Turn	Green Period	Phases Fr	Phases To	Adjusted Lost Time	Adjusted Flow Ratio	Required Grn Time Ratio	Required Movement Time
5	E_T		A	C	4	0.563	0.626	72.8
1	S_L		C	A	9	-	-	9.0Min
				Total:	13	0.563	0.626	81.8

\- 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
28	150	35	110

(Variable cycle times: Program-determined)

Intersection Level of Service	=	A
Worst movement Level of Service	=	E
Average intersection delay (s)	=	4.3
Largest average movement delay (s)	=	67.3
Largest back of queue, 95% (m)	=	138
Performance Index	=	91.94
Degree of saturation (highest)	=	0.639
Practical Spare Capacity (lowest)	=	41 %
Total vehicle capacity, all lanes (veh/h)	=	10089
Total vehicle flow (veh/h)	=	3880
Total person flow (pers/h)	=	5820
Total vehicle delay (veh-h/h)	=	4.64
Total person delay (pers-h/h)	=	6.96
Total effective vehicle stops (veh/h)	=	1181
Total effective person stops (pers/h)	=	1772
Total vehicle travel (veh-km/h)	=	2353.0
Total cost ($/h)	=	1056.74
Total fuel (L/h)	=	207.8
Total CO2 (kg/h)	=	519.57

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Grn+Intgrn Prop.
A	0	4	6	10	0.091
B	10	14	87	91	0.827
C	101	105	5	9	0.082

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

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.5 - MOVEMENT PERFORMANCE

Mov No.		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 (m)	Perf. Index	Aver. Speed (km/h)
South: Paisajes S										
1	L	0.37	0.56	66.6	0.98	0.67	0.9	6	1.32	21.1
3	R	0.02	0.03	8.3		0.62	0.1#		0.13	48.9
East: PR-3 E										
4	L	0.90	1.35	67.3	1.00	0.74	3.8	27	3.22	21.0
5	T	1.13	1.69	1.8	0.29	0.22	16.7	117	45.05	56.1
West: PR-3 W										
11	T	2.08	3.11	4.8	0.42	0.40	19.7	138	41.13	53.0
12	R	0.06	0.10	8.3		0.62	0.5#		0.45	48.9
10	L	0.09	0.13	15.8	0.42	0.84	15.2	106	0.64	41.9

\# Largest density (passenger cars per km or mile) for any lane

---

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.6 - INTERSECTION PERFORMANCE

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 (m)	Perf. Index	Aver. Speed (km/h)

South: Paisajes S									
28	0.118	0.39	0.58	50.0	0.704	0.66	6	1.45	25.2
East: PR-3 E									
2244	0.639	2.03	3.04	3.2	0.311	0.23	117	48.28	54.2
West: PR-3 W									
1608	0.593	2.23	3.34	5.0	0.421	0.41	138	42.22	52.8
INTERSECTION (persons):									
5820	0.639		6.96	4.3	0.359	0.30		91.94	53.1

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

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.7 - LANE PERFORMANCE

Lane No.	Mov 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)	Queue Back (m)	Shrt Lane (m)
South: Paisajes S													
1 L	1	105	5	0	0	10	84	0.118	66.6	0.67	0.9	6	
2 L	1	105	5	0	0	10	84	0.118	66.6	0.67	0.9	6	
3 R	3	0	110	0	0	8	1857	0.004	8.3	0.62	0.1#		
East: PR-3 E													
1 L	4	104	6	0	0	48	101	0.474	67.3	0.74	3.8	27	50
2 T	5	13	97	0	0	1098	1720	0.639	1.8	0.22	16.7	117	
3 T	5	13	97	0	0	1098	1720	0.639	1.8	0.22	16.7	117	
West: PR-3 W													
1 LT	10, 11	23	87	0	0	666	1123	0.593	5.1	0.41	15.2	106	
2 T	11	23	87	0	0	914	1542	0.593	4.8	0.40	19.7	138	
3 R	12	0	110	0	0	28	1857	0.015	8.3	0.62	0.5#		

Density (passenger cars per km or mile)

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m).	*Saturation Flow* Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	*End* Cap (veh /h)	*Tot* Cap (veh /h)	Deg. Satn x	Lane Util %
South: Paisajes S													
1 L	1	10	0	0	10	3.30	1950	1857	0	0	84	0.118	100
2 L	1	10	0	0	10	3.30	1950	1857	0	0	84	0.118	100
3 R	3	0	0	8	8	3.30	1950	1857	1857	0	1857	0.004	100
East: PR-3 E													
1 L	4	48	0	0	48	3.30	1950	1857	0	0	101	0.474	100
2 T	5	0	1098	0	1098	3.30	1950	1950	0	0	1720	0.639	100
3 T	5	0	1098	0	1098	3.30	1950	1950	0	0	1720	0.639	100
West: PR-3 W													
1 LT	10, 11	20	646	0	666	3.30	1950	1420	0	34	1123	0.593	100
2 T	11	0	914	0	914	3.30	1950	1950	0	0	1542	0.593	100
3 R	12	0	0	28	28	3.30	1950	1857	1857	0	1857	0.015	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.

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh /h)	Total Cap. (veh /h)	Lane Util (%)	Deg. Satn x	Eff. Grn 1st Grn	Eff. Grn 2nd Grn	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
South: Paisajes S											
1 L		20	169	100	0.118	5*		66.6	0.67	0.9	1.32
3 R	(Con)	8	1857	100	0.004	110		8.3	0.62	0.1 #	0.13
East: PR-3 E											
4 L		48	101	100	0.474	6		67.3	0.74	3.8	3.22
5 T		2196	3439	100	0.639*	97*		1.8	0.22	16.7	45.05
West: PR-3 W											
11 T		1560	2631	100	0.593	87		4.8	0.40	19.7	41.13
12 R	(Con)	28	1857	100	0.015	110		8.3	0.62	0.5 #	0.45
10 L		20	34	100	0.590	81		15.8	0.84	15.2	0.64

* Maximum degree of saturation, or critical green periods
\# Largest density (passenger cars per km or mile) for any lane

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: Paisajes S												
1 L	10			10	0	1950	5		0.118	66.6	6	
2 L	10			10	0	1950	5		0.118	66.6	6	
3 R			*8*	*8*	*0*	*1950*	*110*		*0.004*	*8.3*		
	20	0	8	28	0				0.118	50.0	6	
East: PR-3 E												
1 L	48			48	0	1950	6		0.474	67.3	27	50
2 T		1098		1098	0	1950	97		0.639	1.8	117	
3 T		1098		1098	0	1950	97		0.639	1.8	117	
	48	2196	0	2244	0				*0.639*	3.2	117	
West: PR-3 W												
1 LT	20	646		666	0	1950	87		0.593	5.1	106	
2 T		914		914	0	1950	87		0.593	4.8	138	
3 R			28	28	0	1950	110		0.015	8.3		
	20	1560	28	1608	0				0.593	5.0	138	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	3880	0	110	0.639	4.3	138

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

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

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

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Ratio 1st grn	Green Ratio 2nd grn	Time (g/C)	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
South: Paisajes S									
1	L	0.045*			20	169	0.118	66.6	E
3	R (Con)	1.000			8	1857	0.004	8.3	A#
					28	2026	0.118	50.0	D
East: PR-3 E									
4	L	0.055			48	101	0.474	67.3	E
5	T	0.882*			2196	3439	0.639*	1.8	A
					2244	3540	0.639	3.2	A
West: PR-3 W									
11	T	0.791			1560	2631	0.593	4.8	A
12	R (Con)	1.000			28	1857	0.015	8.3	A#
10	L	0.736			20	34	0.590	15.8	B
					1608	4522	0.593	5.0	A
ALL VEHICLES:					3880	10089	0.639	4.3	A
INTERSECTION (persons):					5820	10089	0.639	4.3	

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 aaSIDRA Output Guide or the Output section of the on-line help.

\# Level Of Service for continuous movements based on density

* Maximum v/c ratio, or critical green periods

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.639	110
Average Delay	4.3	110
Stop Rate	0.30	110
Max. Queue for Any Movement	17.7	60
Perf. Index	91.3	100
Cost	1056.7	110

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	10089	110
Prac. Spare Cap.	41	110

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

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
South: Paisajes S						
	East	20.0	26.1	31.4	500	109
	West	13.2	21.3	20.8	500	104
East: PR-3 E						
	South	13.1	21.2	20.6	500	104
	West	S	60.0	20.8	500	106
West: PR-3 W						
	South	20.0	26.1	31.4	500	109
	East	S	60.0	20.8	500	106
	West	5.9	14.3	18.7	500	111

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

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table D.1 - LANE DELAYS

Lane No.	Mov No.	Deg. Satn x	Delay (seconds/veh) Stop-line 1st d1	Stop-line 2nd d2	Delay Total dSL	Acc. Dec. dn	Queuing Total dq	Queuing MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: Paisajes S											
1 L	1	0.118	57.8	0.0	57.8	4.2	53.6	0.0	53.6	8.8	66.6
2 L	1	0.118	57.8	0.0	57.8	4.2	53.6	0.0	53.6	8.8	66.6
3 R	3	0.004			0.0					8.3	8.3
East: PR-3 E											
1 L	4	0.474	58.4	0.0	58.4	4.2	54.2	0.0	54.2	8.8	67.3

2 T	5	0.639	1.8	0.0	1.8	2.5	0.0	0.0	0.0	0.0	1.8
3 T	5	0.639	1.8	0.0	1.8	2.5	0.0	0.0	0.0	0.0	1.8
West: PR-3 W											
1 LT	10, 11	0.593	4.8	0.0	4.8	3.6	1.2	0.0	1.2	11.0 0.0	5.1
2 T	11	0.593	4.8	0.0	4.8	3.7	1.1	0.0	1.1	0.0	4.8
3 R	12	0.015			0.0					8.3	8.3

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

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 110

Table D.3 - LANE QUEUES

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: Paisajes S											
1 L	0.118	0.0	0.3	0.0	0.3	0.4	0.6	0.7	0.9	1.0	0.01
2 L	0.118	0.0	0.3	0.0	0.3	0.4	0.6	0.7	0.9	1.0	0.01
3 R	0.004				0.1#						0.00#
East: PR-3 E											
1 L	0.474	0.0	1.6	0.0	1.6	2.1	2.7	3.1	3.8	4.6	0.54
2 T	0.639	0.0	9.5	0.0	9.5	11.6	13.8	15.0	16.7	18.4	0.23
3 T	0.639	0.0	9.5	0.0	9.5	11.6	13.8	15.0	16.7	18.4	0.23
West: PR-3 W											
1 LT	0.593	0.0	8.5	0.0	8.5	10.4	12.4	13.5	15.2	16.8	0.21
2 T	0.593	0.0	11.6	0.0	11.6	14.0	16.6	18.0	19.7	21.4	0.28
3 R	0.015				0.5#						0.00#

Values printed in this table are back of queue (vehicles).
\# Continuous movements: Density (passenger cars per km or mile) instead of queue, Space Occupancy Ratio instead of Queue Storage Ratio

Int PR-3 y Acceso Paisajes
Pico PM Base
Intersection ID: 3

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Total Veh. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h
60	9493	0.719	25	6.0	0.51	17.7	96.2	1117.2
70	9694	0.691	30	5.3	0.45	18.0	94.3	1095.7
80	9840	0.672	34	4.9	0.39	18.3	93.0	1080.2
90	9950	0.658	37	4.6	0.36	18.5	92.0	1068.6
100	10037	0.647	39	4.3	0.32	18.7	91.3	1059.8
110	10089	0.639	41	4.3	0.30	19.7	91.9	1056.7

--- End of aaSIDRA Output ---

Akcelik & Associates Pty Ltd - aaSIDRA 2.0.3.217

Traffic Consulting Group
TCG Registered User No. M0276
Licence Type: Professional, Multi Computer

Time and Date of Analysis 10:13 AM, 28 Jun 2004

Filename: C:\My Documents\aaSIDRA Projects\Paisajes\03_PR-3 y Paisajes_FA.OUT

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3

RUN INFORMATION

Variable cycle time run: "Optimum" cycle time = 100 s

* Basic Parameters:
  Intersection Type: Signalised - Fixed Time
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Specified performance measure for "best" cycle time in variable run - Delay
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile

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

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

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3

DEFAULT PARAMETERS

Default values for some of the important general parameters:
(Default Values File: DEF30.SDF)

1. Basic saturation flow: 1950 tcu/h

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

2. Through car equivalents for signalised intersections

	LEFT		THROUGH		RIGHT	
	LV	HV	LV	HV	LV	HV
Normal	1.050	1.800	1.000	1.650	1.050	1.800
Restricted	1.250	2.250			1.250	2.250

3. Opposed turn parameters (Signalised intersection)

	Crit. Gap	Fol.up Hdway	Deps at End	% Exit Flow Opposing
Left turns :	4.5	2.6	2.2	0
Right turns:	4.0	2.4	2.5	0

4. Cruise speed= 60 km/h, Approach Distance= 500 m

5. Queue space per vehicle in metres
   Light vehicles: 7.0 Heavy vehicles: 13.0

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

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES	Demand flows in veh/hour as used by the program							
South: Paisajes S								
1	127	0	0	0	0	0	1.00	1.00
East: PR-3 E								
4	92	0	0	0	0	0	1.00	1.00
5	0	0	1467	0	0	0	1.00	1.00
West: PR-3 W								
10	1	0	0	0	0	0	1.00	1.00
11	0	0	2520	0	0	0	1.00	1.00
12	0	0	0	0	104	0	1.00	1.00

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

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	PHASE MATRIX First Green Fr	To	Op	Pr	Second Green Fr	To	Op	Pr	Lost Tim 1st Grn	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
South: Paisajes S															
1 L	*C	A								4		9.0Min		5	
East: PR-3 E															
4 L	*A	B								4		9.5		6	
5 T		A	C							4		45.8		87	
West: PR-3 W															
11 T	*B	C								4		76.0		77	
10 L		B	C	L						4		59.6		77	

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

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

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

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Dem Flow (veh /h)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: Paisajes S										
1 L	127	5571		0.023		279	0.90	97	100	0.456
East: PR-3 E										
4 L	92	1857		0.050		111	0.90	9	100	0.826
5 T	1467	3900		0.376		3393	0.90	108	100	0.432
West: PR-3 W										
11 T	2520	3890		0.648		2995	0.90	7	100	0.841*
12 R	104	1857		0.056		1857	0.98	1650	100	0.056
10 L	1	2		0.500		2	0.90	39	100	0.649

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table S.3 - INTERSECTION PARAMETERS

Crit Mov No.	App. & Turn	Green Period	Phases Fr	Phases To	Adjusted Lost Time	Adjusted Flow Ratio	Required Grn Time Ratio	Required Movement Time
4	E_L		A	B	4	0.050	0.055	9.5
11	W_T		B	C	4	0.648	0.720	76.0
1	S_L		C	A	9	-	-	9.0Min
				Total:	17	0.697	0.775	94.5

- 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
28	150	76	100

(Variable cycle times: Program-determined)

Intersection Level of Service	=	A
Worst movement Level of Service	=	E
Average intersection delay (s)	=	8.6
Largest average movement delay (s)	=	66.8
Largest back of queue, 95% (m)	=	273
Performance Index	=	130.44
Degree of saturation (highest)	=	0.841
Practical Spare Capacity (lowest)	=	7 %
Total vehicle capacity, all lanes (veh/h)	=	8637
Total vehicle flow (veh/h)	=	4311
Total person flow (pers/h)	=	6467
Total vehicle delay (veh-h/h)	=	10.31
Total person delay (pers-h/h)	=	15.47
Total effective vehicle stops (veh/h)	=	2183
Total effective person stops (pers/h)	=	3275
Total vehicle travel (veh-km/h)	=	2613.4
Total cost ($/h)	=	1293.09
Total fuel (L/h)	=	257.2
Total CO2 (kg/h)	=	643.09

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Grn+Intgrn Prop.
A	0	4	6	10	0.100
B	10	14	77	81	0.810
C	91	95	5	9	0.090

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

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table S.5 - MOVEMENT PERFORMANCE

Mov No.	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 (m)	Perf. Index	Aver. Speed (km/h)
South: Paisajes S									
1 L	2.22	3.33	62.9	1.00	0.73	3.2	22	8.03	21.9
East: PR-3 E									
4 L	1.71	2.56	66.8	1.00	0.90	6.6	46	6.18	21.1
5 T	0.58	0.87	1.4	0.22	0.17	9.0	63	25.71	57.0
West: PR-3 W									
11 T	5.57	8.35	8.0	0.71	0.67	39.0	273	88.87	49.2
12 R	0.24	0.36	8.3		0.62	1.7#		1.65	48.9
10 L	0.00	0.00	0.0	0.00	0.00	0.0	0	0.00	39.6

\# Largest density (passenger cars per km or mile) for any lane

---

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table S.6 - INTERSECTION PERFORMANCE

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 (m)	Perf. Index	Aver. Speed (km/h)
South: Paisajes S									
127	0.456	2.22	3.33	62.9	1.000	0.73	22	8.03	21.9

East: PR-3 E									
1559	0.826	2.29	3.43	5.3	0.272	0.21	63	31.88	51.8
West: PR-3 W									
2625	0.841	5.81	8.71	8.0	0.685	0.67	273	90.53	49.2
INTERSECTION (persons):									
6467	0.841		15.47	8.6	0.545	0.51		130.44	48.3

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

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table S.7 - LANE PERFORMANCE

Lane No.	Mov 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)	(m)	Shrt Lane (m)
South: Paisajes S													
1 L	1	95	5	0	0	42	93	0.456	62.9	0.73	3.2	22	
2 L	1	95	5	0	0	42	93	0.456	62.9	0.73	3.2	22	
3 L	1	95	5	0	0	42	93	0.456	62.9	0.73	3.2	22	
East: PR-3 E													
1 L	4	94	6	0	0	92	111	0.826	66.8	0.90	6.6	46	50
2 T	5	13	87	0	0	734	1697	0.432	1.4	0.17	9.0	63	
3 T	5	13	87	0	0	734	1697	0.432	1.4	0.17	9.0	63	
West: PR-3 W													
1 LT	10, 11	23	77	0	0	1258	1495	0.841	8.0	0.67	38.8	272	
2 T	11	23	77	0	0	1263	1502	0.841	8.0	0.67	39.0	273	
3 R	12	0	100	0	0	104	1857	0.056	8.3	0.62	1.7#		

Density (passenger cars per km or mile)

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	End Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: Paisajes S													
1 L	1	42	0	0	42	3.30	1950	1857	0	0	93	0.456	100
2 L	1	42	0	0	42	3.30	1950	1857	0	0	93	0.456	100
3 L	1	42	0	0	42	3.30	1950	1857	0	0	93	0.456	100
East: PR-3 E													
1 L	4	92	0	0	92	3.30	1950	1857	0	0	111	0.826	100
2 T	*5*	*0*	*734*	*0*	*734*	*3.30*	*1950*	*1950*	*0*	*0*	*1697*	*0.432*	*100*
3 T	5	0	734	0	734	3.30	1950	1950	0	0	1697	0.432	100
West: PR-3 W													
1 LT	10, 11	1	1257	0	1258	3.30	1950	1942	0	36	1495	0.841	100
2 T	11	0	1263	0	1263	3.30	1950	1950	0	0	1502	0.841	100
3 R	12	0	0	104	104	3.30	1950	1857	1857	0	1857	0.056	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.

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh /h)	Total Cap. (veh /h)	Lane Util (%)	Deg. Satn x	Eff. Grn 1st Grn	Eff. Grn 2nd Grn	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
South: Paisajes S											
1 L		127	279	100	0.456	5*		62.9	0.73	3.2	8.03
East: PR-3 E											
4 L		92	111	100	0.826	6*		66.8	0.90	6.6	6.18
5 T		1467	3393	100	0.432	87		1.4	0.17	9.0	25.71
West: PR-3 W											
11 T		2520	2995	100	0.841*	77*		8.0	0.67	39.0	88.87
12 R	(Con)	104	1857	100	0.056	100		8.3	0.62	1.7 #	1.65
10 L		1	2	100	0.649	77		0.0	0.00	0.0	0.00

* Maximum degree of saturation, or critical green periods
\# Largest density (passenger cars per km or mile) for any lane

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: Paisajes S												
1 L	42			42	0	1950	5		0.456	62.9	22	
2 L	42			42	0	1950	5		0.456	62.9	22	
3 L	42			42	0	1950	5		0.456	62.9	22	
	127	0	0	127	0				0.456	62.9	22	
East: PR-3 E												
1 L	92			92	0	1950	6		0.826	66.8	46	50
2 T		734		734	0	1950	87		0.432	1.4	63	
3 T		734		734	0	1950	87		0.432	1.4	63	
	92	1467	0	1559	0				0.826	5.3	63	
West: PR-3 W												
1 LT	0	1257		1258	0	1950	77		0.841	8.0	272	
2 T		*1263*		*1263*	*0*	*1950*	*77*		*0.841*	*8.0*	*273*	
3 R			104	104	0	1950	100		0.056	8.3		
	1	2520	104	2625	0				0.841	8.0	273	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue

	4311	0	100	0.841	8.6	273

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

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

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

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	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
South: Paisajes S								
1	L	0.050*		127	279	0.456	62.9	E
				127	279	0.456	62.9	E
East: PR-3 E								
4	L	0.060*		92	111	0.826	66.8	E
5	T	0.870		1467	3393	0.432	1.4	A
				1559	3504	0.826	5.3	A
West: PR-3 W								
11	T	0.770*		2520	2995	0.841*	8.0	A
12	R (Con)	1.000		104	1857	0.056	8.3	A#
10	L	0.770		1	2	0.649	0.0	A
				2625	4854	0.841	8.0	A
ALL VEHICLES:				4311	8637	0.841	8.6	A
INTERSECTION (persons):				6467	8637	0.841	8.6	

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
aaSIDRA Output Guide or the Output section of the on-line help.
\# Level Of Service for continuous movements based on density
* Maximum v/c ratio, or critical green periods

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.829	110
Average Delay	8.6	100
Stop Rate	0.48	110
Max. Queue for Any Movement	39.0	100
Perf. Index	130.4	100
Cost	1293.1	100

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	8710	110
Prac. Spare Cap.	9	110

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

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
South: Paisajes S						
	West	13.2	21.3	20.8	500	104
East: PR-3 E						
	South	13.1	21.2	20.6	500	104
	West	S	60.0	20.8	500	106
West: PR-3 W						
	South	20.0	26.1	31.4	500	109
	East	S	60.0	20.8	500	106
	West	5.9	14.3	18.7	500	111

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

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table D.1 - LANE DELAYS

Lane No.	Mov No.	Deg. Satn x	Delay (seconds/veh) 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: Paisajes S											
1 L	1	0.456	54.1	0.0	54.1	4.3	49.8	0.0	49.8	8.8	62.9
2 L	1	0.456	54.1	0.0	54.1	4.3	49.8	0.0	49.8	8.8	62.9
3 L	1	0.456			54.1					8.8	62.9
East: PR-3 E											
1 L	4	0.826	54.3	3.6	58.0	4.2	53.7	2.1	51.6	8.8	66.8
2 T	5	0.432	1.4	0.0	1.4	1.9	0.0	0.0	0.0	0.0	1.4
3 T	5	0.432	1.4	0.0	1.4	1.9	0.0	0.0	0.0	0.0	1.4
West: PR-3 W											
1 LT	10,	0.841	7.9	0.0	7.9	6.1	1.8	0.0	1.8	11.0	8.0

	11									0.0	
2 T	11	0.841	8.0	0.0	8.0	6.1	1.8	0.0	1.8	0.0	8.0
3 R	12	0.056			0.0					8.3	8.3

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

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 100

Table D.3 - LANE QUEUES

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nb1	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: Paisajes S											
1 L	0.456	0.0	1.3	0.0	1.3	1.7	2.2	2.5	3.2	3.8	0.04
2 L	0.456	0.0	1.3	0.0	1.3	1.7	2.2	2.5	3.2	3.8	0.04
3 L	0.456				1.3#						0.04#
East: PR-3 E											
1 L	0.826	0.1	3.0	0.1	3.1	3.9	4.8	5.5	6.6	7.7*	0.92
2 T	0.432	0.0	4.5	0.0	4.5	5.5	6.8	7.6	9.0	10.3	0.13
3 T	0.432	0.0	4.5	0.0	4.5	5.5	6.8	7.6	9.0	10.3	0.13
West: PR-3 W											
1 LT	0.841	0.0	24.2	0.0	24.2	29.0	33.9	36.3	38.8	41.3	0.54
2 T	0.841	0.0	24.3	0.0	24.3	29.1	34.0	36.5	39.0	41.5	0.55
3 R	0.056				1.7#						0.01#

Values printed in this table are back of queue (vehicles).
* Queue length exceeds short lane length due to specification of a percentile queue in the aaSIDRA Configuration File. For calculation of this statistic, you may specify the lane with full length.
\# Continuous movements: Density (passenger cars per km or mile) instead of queue, Space Occupancy Ratio instead of Queue Storage Ratio

Int PR-3 y Acceso Paisajes
Pico AM Futuro
Intersection ID: 3

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Total Veh. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h
60	7997	1.023	-12	34.3	1.02	64.4	202.5	2011.9
70	8233	0.944	-5	20.9	0.82	54.0	169.4	1644.3
80	8410	0.893	1	14.2	0.66	46.4	148.8	1454.4
90	8525	0.870	3	11.6	0.59	44.0	141.4	1376.1
100	8637	0.841	7	8.6	0.51	39.0	130.4	1293.1
110	8710	0.829	9	8.7	0.48	40.6	132.6	1294.4

--- End of aaSIDRA Output ---

Akcelik & Associates Pty Ltd - aaSIDRA 2.0.3.217

Traffic Consulting Group
TCG Registered User No. M0276
Licence Type: Professional, Multi Computer

Time and Date of Analysis 10:18 AM, 28 Jun 2004

Filename: C:\My Documents\aaSIDRA Projects\Paisajes\03_PR-3 y Paisajes_FP.OUT

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3

RUN INFORMATION

Variable cycle time run: "Optimum" cycle time = 90 s

* Basic Parameters:
  Intersection Type: Signalised - Fixed Time
  Driving on the right-hand side of the road
  Input data specified in Metric units
  Default Values File No. 30
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Hourly Rate)
  Specified performance measure for "best" cycle time in variable run - Delay
  Delay definition: Control delay
  Geometric delay included
  aaSIDRA Standard Delay and Queue models used
  Level of Service based on: Delay (HCM method)
  Queue definition: Back of queue, 95th Percentile

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

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

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3

DEFAULT PARAMETERS

Default values for some of the important general parameters:
(Default Values File: DEF30.SDF)

1. Basic saturation flow: 1950 tcu/h

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

2. Through car equivalents for signalised intersections

	LEFT LV	LEFT HV	THROUGH LV	THROUGH HV	RIGHT LV	RIGHT HV
Normal	1.050	1.800	1.000	1.650	1.050	1.800
Restricted	1.250	2.250			1.250	2.250

3. Opposed turn parameters (Signalised intersection)

	Crit. Gap	Fol.up Hdway	Deps at End	% Exit Flow Opposing
Left turns :	4.5	2.6	2.2	0
Right turns:	4.0	2.4	2.5	0

4. Cruise speed= 60 km/h, Approach Distance= 500 m

5. Queue space per vehicle in metres
   Light vehicles: 7.0 Heavy vehicles: 13.0

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

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.0 - TRAFFIC FLOW DATA

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
VEHICLES Demand flows in veh/hour as used by the program								
South: Paisajes S								
1	209	0	0	0	0	0	1.00	1.00
East: PR-3 E								
4	179	0	0	0	0	0	1.00	1.00
5	0	0	2612	0	0	0	1.00	1.00
West: PR-3 W								
10	21	0	0	0	0	0	1.00	1.00
11	0	0	1872	0	0	0	1.00	1.00
12	0	0	0	0	223	0	1.00	1.00

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

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.1 - MOVEMENT PHASE AND TIMING PARAMETERS

Mov No.	Mov Typ	PHASE MATRIX First Green Fr To Op Pr	PHASE MATRIX Second Green Fr To Op Pr	Lost Tim 1st Grn	Lost Tim 2nd Grn	Req.Mov.Time 1st Grn	Req.Mov.Time 2nd Grn	Eff. Grn 1st Grn	Eff. Grn 2nd Grn
South: Paisajes S									
1	L	*C A		4		9.0Min		5	
East: PR-3 E									
4	L	*A B		4		13.6		11	
5	T	A C		4		71.0		77	
West: PR-3 W									
11	T	B C		4		59.7		62	
10	L	*B C L		15		60.7		51	

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

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

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

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.		Dem Flow (veh /h)	Satn Flow 1st Grn	Satn Flow 2nd Grn	Flow Ratio 1st Grn	Flow Ratio 2nd Grn	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
South: Paisajes S											
1	L	209	5571		0.038		310	0.90	33	100	0.675
East: PR-3 E											
4	L	179	1857		0.096		227	0.90	14	100	0.789
5	T	2612	3900		0.670		3337	0.90	15	100	0.783
West: PR-3 W											
11	T	1872	3358		0.557		2313	0.90	11	100	0.809*
12	R	223	1857		0.120		1857	0.98	716	100	0.120
10	L	21	46		0.457		26	0.90	12	100	0.806

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.3 - INTERSECTION PARAMETERS

Crit Mov No.	App. & Turn	Green Period	Phases Fr	Phases To	Adjusted Lost Time	Adjusted Flow Ratio	Required Grn Time Ratio	Required Movement Time
4	E_L		A	B	4	0.096	0.107	13.6
10	W_L		B	C	15	0.457	0.507	60.7
1	S_L		C	A	9	-	-	9.0Min
				Total:	28	0.553	0.614	83.3

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

Cycle Time:

Minimum	Maximum	Practical	Chosen
28	150	73	90

(Variable cycle times: Program-determined)

Intersection Level of Service	=	B
Worst movement Level of Service	=	E
Average intersection delay (s)	=	10.7
Largest average movement delay (s)	=	58.9
Largest back of queue, 95% (m)	=	231
Performance Index	=	160.82
Degree of saturation (highest)	=	0.809
Practical Spare Capacity (lowest)	=	11 %
Total vehicle capacity, all lanes (veh/h)	=	8070
Total vehicle flow (veh/h)	=	5116
Total person flow (pers/h)	=	7674
Total vehicle delay (veh-h/h)	=	15.17
Total person delay (pers-h/h)	=	22.76
Total effective vehicle stops (veh/h)	=	2774
Total effective person stops (pers/h)	=	4160
Total vehicle travel (veh-km/h)	=	3102.0
Total cost ($/h)	=	1617.19
Total fuel (L/h)	=	319.8
Total CO2 (kg/h)	=	799.40

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.4 - PHASE INFORMATION

Phase No.	Change Time	Green Start	Displayed Green	Grn+Intgrn Secs	Grn+Intgrn Prop.
A	0	4	11	15	0.167
B	15	19	62	66	0.733
C	81	85	5	9	0.100

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

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.5 - MOVEMENT PERFORMANCE

Mov No.		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 (m)	Perf. Index	Aver. Speed (km/h)
South: Paisajes S										
1	L	3.42	5.13	58.9	1.00	0.81	4.6	32	12.60	22.9
East: PR-3 E										
4	L	2.76	4.14	55.4	1.00	0.91	10.1	71	10.65	23.7
5	T	2.19	3.28	3.0	0.47	0.35	24.9	175	63.95	53.9
West: PR-3 W										
11	T	6.16	9.24	11.8	0.76	0.73	33.0	231	69.18	45.3
12	R	0.51	0.77	8.3		0.62	3.7#		3.55	48.9
10	L	0.14	0.22	24.6	0.76	0.93	27.1	190	0.90	35.9

Largest density (passenger cars per km or mile) for any lane

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.6 - INTERSECTION PERFORMANCE

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 (m)	Perf. Index	Aver. Speed (km/h)
South: Paisajes S									
209	0.675	3.42	5.13	58.9	1.000	0.81	32	12.60	22.9

East: PR-3 E									
2791	0.789	4.94	7.41	6.4	0.512	0.39	175	74.60	49.9
West: PR-3 W									
2116	0.809	6.81	10.22	11.6	0.684	0.72	231	73.63	45.5
INTERSECTION (persons):									
7674	0.809		22.76	10.7	0.603	0.54		160.82	45.8

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

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.7 - LANE PERFORMANCE

Lane No.	Mov 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)	Queue Back (m)	Shrt Lane (m)
South: Paisajes S													
1 L	1	85	5	0	0	70	103	0.675	58.9	0.81	4.6	32	
2 L	1	85	5	0	0	70	103	0.675	58.9	0.81	4.6	32	
3 L	1	85	5	0	0	70	103	0.675	58.9	0.81	4.6	32	
East: PR-3 E													
1 L	4	79	11	0	0	179	227	0.789	55.4	0.91	10.1*	71	50
2 T	5	13	77	0	0	1306	1668	0.783	3.0	0.35	24.9	175	
3 T	5	13	77	0	0	1306	1668	0.783	3.0	0.35	24.9	175	
West: PR-3 W													
1 LT	10, 11	28	62	0	0	806	996	0.809	13.9	0.75	27.1	190	
2 T	11	28	62	0	0	1087	1343	0.809	10.6	0.71	33.0	231	
3 R	12	0	90	0	0	223	1857	0.120	8.3	0.62	3.7#		

\# Density (passenger cars per km or mile)
* Queue length exceeds short lane length due to specification of a percentile queue in the aaSIDRA Configuration File. For calculation of this statistic, you may specify the lane with full length.

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Dem Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (m)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	End Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
South: Paisajes S													
1 L	1	70	0	0	70	3.30*	1950	1857	0	0	103	0.675	100
2 L	1	70	0	0	70	3.30	1950	1857	0	0	103	0.675	100
3 L	1	70	0	0	70	3.30	1950	1857	0	0	103	0.675	100
East: PR-3 E													
1 L	4	179	0	0	179	3.30	1950	1857	0	0	227	0.789	100
2 T	5	0	1306	0	1306	3.30	1950	1950	0	0	1668	0.783	100
3 T	5	0	1306	0	1306	3.30	1950	1950	0	0	1668	0.783	100
West: PR-3 W													
1 LT	10, 11	21	785	0	806	3.30	1950	1446	0	41	996	0.809	100
2 T	11	0	1087	0	1087	3.30	1950	1950	0	0	1343	0.809	100
3 R	12	0	0	223	223	3.30	1950	1857	1857	0	1857	0.120	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.

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.10 - MOVEMENT CAPACITY AND PERFORMANCE SUMMARY

Mov No.	Mov Typ	Dem Flow (veh /h)	Total Cap. (veh /h)	Lane Util (%)	Deg. Satn x	Eff. Grn 1st Grn	Eff. Grn 2nd Grn	Aver. Delay (sec)	Eff. Stop Rate	95% Back of Queue (veh)	Perf. Index
South: Paisajes S											
1 L		209	310	100	0.675	5*		58.9	0.81	4.6	12.60
East: PR-3 E											
4 L		179	227	100	0.789	11*		55.4	0.91	10.1	10.65
5 T		2612	3337	100	0.783	77		3.0	0.35	24.9	63.95
West: PR-3 W											
11 T		1872	2313	100	0.809*	62		11.8	0.73	33.0	69.18
12 R	(Con)	223	1857	100	0.120	90		8.3	0.62	3.7 #	3.55
10 L		21	26	100	0.806	51*		24.6	0.93	27.1	0.90

* Maximum degree of saturation, or critical green periods
\# Largest density (passenger cars per km or mile) for any lane

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Demand Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	Longest Queue (m)	Shrt Lane (m)
South: Paisajes S												
1 L	70			70	0	1950	5		0.675	58.9	32	
2 L	70			70	0	1950	5		0.675	58.9	32	
3 L	70			70	0	1950	5		0.675	58.9	32	
	209	0	0	209	0				0.675	58.9	32	
East: PR-3 E												
1 L	179			179	0	1950	11		0.789	55.4	71*	50
2 T		1306		1306	0	1950	77		0.783	3.0	175	
3 T		1306		1306	0	1950	77		0.783	3.0	175	
	179	2612	0	2791	0				0.789	6.4	175	
West: PR-3 W												
1 LT	21	785		806	0	1950	62		0.809	13.9	190	
2 T		1087		1087	0	1950	62		0.809	10.6	231	
3 R			223	223	0	1950	90		0.120	8.3		
	21	1872	223	2116	0				0.809	11.6	231	

ALL VEHICLES	Total Flow	% HV	Cycle Time	Max X	Aver. Delay	Max Queue
	5116	0	90	0.809	10.7	231

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

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

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

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

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table S.15 - CAPACITY AND LEVEL OF SERVICE

Mov No.	Mov Typ	Green Time Ratio (g/C) 1st grn	Green Time Ratio (g/C) 2nd grn	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
South: Paisajes S								
1	L	0.056*		209	310	0.675	58.9	E
				209	310	0.675	58.9	E
East: PR-3 E								
4	L	0.122*		179	227	0.789	55.4	E
5	T	0.856		2612	3337	0.783	3.0	A
				2791	3564	0.789	6.4	A
West: PR-3 W								
11	T	0.689		1872	2313	0.809*	11.8	B
12	R (Con)	1.000		223	1857	0.120	8.3	A#
10	L	0.567*		21	26	0.806	24.6	C
				2116	4196	0.809	11.6	B
ALL VEHICLES:				5116	8070	0.809	10.7	B
INTERSECTION (persons):				7674	8070	0.809	10.7	

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 aaSIDRA Output Guide or the Output section of the on-line help.

\# Level Of Service for continuous movements based on density

* Maximum v/c ratio, or critical green periods

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3

Table S.21 - VARIABLE CYCLE TIME RESULTS

Performance Measure	Smallest Value	Cycle Time
Degree of Satn	0.803	100
Average Delay	10.7	90
Stop Rate	0.51	100
Max. Queue for Any Movement	30.4	70
Perf. Index	160.8	90
Cost	1613.1	100

Performance Measure	Largest Value	Cycle Time
Total Vehicle Cap.	8118	100
Prac. Spare Cap.	12	100

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

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table D.0 - GEOMETRIC DELAY DATA

From Approach	To Approach	Negn Radius (m)	Negn Speed (km/h)	Negn Dist. (m)	Appr. Dist. (m)	Downstream Distance (m)
South: Paisajes S						
	West	13.2	21.3	20.8	500	104
East: PR-3 E						
	South	13.1	21.2	20.6	500	104
	West	S	60.0	20.8	500	106
West: PR-3 W						
	South	20.0	26.1	31.4	500	108
	East	S	60.0	20.8	500	106
	West	5.9	14.3	18.7	500	111

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

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table D.1 - LANE DELAYS

Lane No.	Mov No.	Deg. Satn x	Delay (seconds/veh) Stop-line 1st d1	Stop-line 2nd d2	Delay Total dSL	Acc. Dec. dn	Queuing Total dq	Queuing MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: Paisajes S											
1	L	1 0.675	49.2	0.9	50.0	4.3	45.8	1.0	44.8	8.8	58.9
2	L	1 0.675	49.2	0.9	50.0	4.3	45.8	1.0	44.8	8.8	58.9
3	L	1 0.675			50.0					8.8	58.9

East: PR-3 E											
1 L	4	0.789	43.5	3.2	46.6	4.2	42.4	1.6	40.8	8.8	55.4
2 T	5	0.783	3.0	0.0	3.0	4.1	0.0	0.0	0.0	0.0	3.0
3 T	5	0.783	3.0	0.0	3.0	4.1	0.0	0.0	0.0	0.0	3.0
West: PR-3 W											
1 LT	10, 11	0.809	10.6	3.0	13.6	6.4	7.2	0.3	6.8	11.0 0.0	13.9
2 T	11	0.809	10.5	0.1	10.6	6.6	4.0	0.0	4.0	0.0	10.6
3 R	12	0.120			0.0					8.3	8.3

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

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3
Fixed-Time Signals, Cycle Time = 90

Table D.3 - LANE QUEUES

Lane No.	Deg. Satn x	Ovrfl. Queue No	Average (veh) Nbl	Nb2	Nb	Percentile (veh) 70%	85%	90%	95%	98%	Queue Stor. Ratio
South: Paisajes S											
1 L	0.675	0.0	2.0	0.0	2.0	2.6	3.3	3.7	4.6	5.5	0.06
2 L	0.675	0.0	2.0	0.0	2.0	2.6	3.3	3.7	4.6	5.5	0.06
3 L	0.675				2.0#						0.06#
East: PR-3 E											
1 L	0.789	0.2	4.9	0.3	5.2	6.4	7.8*	8.7*	10.1*	11.6*	1.42
2 T	0.783	0.0	15.1	0.0	15.1	18.2	21.4	23.1	24.9	26.8	0.35
3 T	0.783	0.0	15.1	0.0	15.1	18.2	21.4	23.1	24.9	26.8	0.35
West: PR-3 W											
1 LT	0.809	0.8	15.2	1.3	16.6	19.9	23.4	25.1	27.1	29.1	0.38
2 T	0.809	0.0	20.3	0.1	20.4	24.5	28.7	30.8	33.0	35.2	0.46
3 R	0.120				3.7#						0.02#

Values printed in this table are back of queue (vehicles).
* Queue length exceeds short lane length due to specification of a percentile queue in the aaSIDRA Configuration File. For calculation of this statistic, you may specify the lane with full length.
\# Continuous movements: Density (passenger cars per km or mile) instead of queue, Space Occupancy Ratio instead of Queue Storage Ratio

Int PR-3 y Acceso Paisajes
Pico PM Futuro
Intersection ID: 3

Table V.21 - INTERSECTION SUMMARY FOR VARIABLE CYCLE TIME

Cycle Time (sec)	Total Veh. Cap.	Intersn Deg. of Satn	Prac. Spare Cap.	Aver. Delay (sec)	Stop Rate	Longest Queue (veh)	Perf. Index	Cost Total $/h
60	7771	0.870	4	16.0	0.84	31.1	180.6	1791.5
70	7923	0.843	7	12.4	0.71	30.4	166.6	1666.4
80	8001	0.824	9	11.4	0.59	32.7	162.2	1645.2
90	8070	0.809	11	10.7	0.54	33.0	160.8	1617.2
100	8118	0.803	12	10.7	0.51	35.3	162.6	1613.1
110	8048	0.834	8	12.2	0.52	42.1	173.6	1658.1

--- End of aaSIDRA Output ---